

**3rd Generation Partnership Project;  
Technical Specification Group Radio Access Network;  
5GS;  
User Equipment (UE) conformance specification;  
Part 1: Common test environment  
(Release 16)**



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**Keywords**

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Postal address

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3GPP support office address

650 Route des Lucioles - Sophia Antipolis  
Valbonne - FRANCE  
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

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Internet

<http://www.3gpp.org>

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## Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

The present document is part 1 of a multi-part deliverable covering the 5G System (5GS) User Equipment (UE) conformance specification, as identified below:

- **3GPP TS 38.508-1: "5GS; User Equipment (UE) conformance specification; Part 1: Common test environment"** (the present document).
- 3GPP TS 38.508-2 [10]: "5GS; User Equipment (UE) conformance specification; Part 2: Common Implementation Conformance Statement (ICS) proforma".

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## 1 Scope

The present document defines the test environment for the 5G System.

This specification covers all aspects, including NG-RAN, 5GC and interworking between 5GS and EPS used for conformance tests of User Equipment (UE).

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## 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 36.508: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); Common test environments for User Equipment (UE) conformance testing".
- [3] 3GPP TS 36.300: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Universal Terrestrial Radio Access (E-UTRAN); Overall description; Stage 2".
- [4] 3GPP TS 36.331: "Evolved Universal Terrestrial Radio Access (E-UTRA); Radio Resource Control (RRC); Protocol specification".
- [5] 3GPP TS 38.300: "NR; Overall description; Stage 2".
- [6] 3GPP TS 38.331: "NR; Radio Resource Control (RRC); Protocol specification".
- [7] 3GPP TS 38.101-1: "NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone".
- [8] 3GPP TS 38.101-2: "NR; User Equipment (UE) radio transmission and reception; Part 2: Range 2 Standalone".
- [9] 3GPP TS 38.101-3: "NR; User Equipment (UE) radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios".
- [10] 3GPP TS 38.508-2: "5GS; User Equipment (UE) conformance specification; Part 2: Common Implementation Conformance Statement (ICS) proforma".
- [11] 3GPP TS 38.509: "5GS; Special conformance testing functions for User Equipment (UE)".
- [12] 3GPP TS 38.523-1: "5GS; User Equipment (UE) conformance specification; Part 1: Protocol".
- [13] 3GPP TS 38.133: "NR; Requirements for support of radio resource management".
- [14] 3GPP TS 38.521-1: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Range 1 Standalone".
- [15] 3GPP TS 38.521-2: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 2: Range 2 Standalone".
- [16] 3GPP TS 38.521-3: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios".

- [17] 3GPP TS 38.521-4: "NR; User Equipment (UE) conformance specification; Radio transmission and reception; Part 4: Performance".
- [18] 3GPP TS 38.533: "NR; User Equipment (UE) conformance specification; Radio resource management".
- [19] 3GPP TS 38.523-2: "5GS; User Equipment (UE) conformance specification; Part 2: Applicability of protocol test cases".
- [20] 3GPP TS 38.321: "NR; Medium Access Control (MAC) protocol specification".
- [21] 3GPP TS 38.214: "NR; Physical layer procedures for data".
- [22] 3GPP TS 38.213: "NR; Physical layer procedures for control".
- [23] 3GPP TS 38.523-3: "5GS; UE conformance specification; Part 3: Protocol Test Suites".
- [24] 3GPP TR 38.810: "NR; Study on test methods"
- [25] 3GPP TS 23.041: "Technical realization of Cell Broadcast Service (CBS)"
- [26] 3GPP TS 23.003: "Numbering, addressing and identification"
- [27] 3GPP TS 38.212: "NR; Multiplexing and channel coding"
- [28] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS);Stage 3"
- [29] 3GPP TS 38.211: "NR; Physical channels and modulation".
- [30] IETF RFC 4187: " Extensible Authentication Protocol Method for 3rd Generation Authentication and Key Agreement (EAP-AKA) ".
- [31] IETF RFC 5448: "Improved Extensible Authentication Protocol Method for 3rd Generation Authentication and Key Agreement (EAP-AKA)".
- [32] IETF RFC 3748: "Extensible Authentication Protocol (EAP)".
- [33] 3GPP TS 23.502: "Procedures for the 5G System (5GS); Stage 2".
- [34] IETF RFC 7296: "Internet Key Exchange Protocol Version 2 (IKEv2)".
- [35] 3GPP TS 24.502: "Access to the 3GPP 5G Core Network (5GCN) via Non-3GPP Access Networks (N3AN); Stage 3"
- [36] 3GPP TS 34.123-2: "User Equipment (UE) conformance specification; Part 2: Implementation Conformance Statement (ICS) proforma specification ".
- [37] 3GPP TS 36.523-2: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 2: Implementation Conformance Statement (ICS) proforma specification".
- [38] 3GPP TR 38.903: "NR; Derivation of test tolerances and measurement uncertainty for User Equipment (UE) conformance test cases"
- [39] 3GPP TS 37.571-1: "Universal Terrestrial Radio Access (UTRA) and Evolved UTRA (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification for UE positioning; Part 1: Conformance test specification".
- [40] 3GPP TS 37.571-2: "Universal Terrestrial Radio Access (UTRA) and Evolved UTRA (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification for UE positioning; Part 2: Protocol conformance".
- [41] 3GPP TS 36.523-3: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 3: Test Suites".

- [42] 3GPP TS 36.523-1: "Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification".
- [43] 3GPP TS 33.501: "Security architecture and procedures for 5G system".
- [44] 3GPP TS 34.229-1: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); User Equipment (UE) conformance specification; Part 1: Protocol conformance specification".
- [45] 3GPP TS 26.114: "IP Multimedia Subsystem (IMS);Multimedia Telephony;Media handling and interaction".
- [46] IETF RFC 4566: "SDP: Session Description Protocol".
- [47] 3GPP TS 34.229-5: "Internet Protocol (IP) multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); User Equipment (UE) conformance specification; Part 5: Protocol conformance specification using 5G System (5GS)".

## 3 Definitions, symbols and abbreviations

### 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

**B:** a value followed by "B" is a binary value.

**H:** a value followed by "H" is a hexadecimal value.

### 3.2 Symbols

For the purposes of the present document, the following symbols apply:

### 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

|         |                                    |
|---------|------------------------------------|
| 5GC     | 5G Core Network                    |
| 5GMM    | 5GS Mobility Management            |
| 5GS     | 5G System                          |
| 5GSM    | 5GS Session Management             |
| EN-DC   | E-UTRA-NR Dual Connectivity        |
| MCG     | Master Cell Group                  |
| MR-DC   | Multi-RAT Dual Connectivity        |
| NE-DC   | NR-E-UTRA Dual Connectivity        |
| NGC     | NG Core Network. Synonym of 5GC.   |
| NGEN-DC | NG-RAN E-UTRA-NR Dual Connectivity |
| NG-RAN  | NG Radio Access Network            |
| NR      | NR Radio Access                    |
| RRC     | Radio Resource Control             |
| SCG     | Secondary Cell Group               |
| SS      | System Simulator                   |

## 4 Common test environments

### 4.1 Environmental conditions

The requirements in this clause apply to all types of UE(s).

#### 4.1.1 Temperature

Regarding FR1 the UE shall fulfil all the requirements in the full temperature range of:

**Table 4.1.1-1: Temperature conditions for FR1**

|                |   |
|----------------|---|
| +15°C to +35°C | For normal conditions (with relative humidity of 25 % to 75 %)  |
| -10°C to +55°C | For extreme conditions (see IEC publications 68-2-1 and 68-2-2) |

Outside this temperature range the UE, if powered on, shall not make ineffective use of the radio frequency spectrum. In no case shall the UE exceed the transmitted levels as defined in TS 38.101-1 [7] clause 6.2 for extreme operation.

The normative reference for this requirement is TS 38.101-1 [7] Annex E.2.

All RF requirements for UEs operating in FR2 are defined over the air and can only be tested in an OTA chamber.

Regarding FR2 the UE shall fulfil all requirements in the temperature range defined in Table 4.1.1-2.

**Table 4.1.1-2: Temperature conditions for FR2**

|                |   |
|----------------|---|
| +15°C to +35°C | For normal (room temperature) conditions with relative humidity of 25% to 75% |
| -10°C to +55°C | For extreme conditions  |

Outside this temperature range the UE, if powered on, shall not make ineffective use of the radio frequency spectrum. In no case shall the UE exceed the transmitted levels as defined in TS 38.101-2[8] clause 6.2 for extreme operation.

The normative reference for this requirement is TS 38.101-2 [8] Annex E.2.

Some tests are performed also in extreme temperature conditions. These test conditions are denoted as TL (temperature low, -10°C) and TH (temperature high, +55°C).

#### 4.1.2 Voltage

**Editor's Note: This clause is incomplete. The following items are missing or are incomplete:**

- Methodology to control the voltage in a case which a power cable is not connected to DUT is FFS since it is not agreed whether we can connect the power cable to DUT at the OTA measurement situation yet.

Regarding both FR1 and FR2 the UE shall fulfil all the requirements in the full voltage range, i.e. the voltage range between the extreme voltages.

The manufacturer shall declare the lower and higher extreme voltages and the approximate shutdown voltage. For the equipment that can be operated from one or more of the power sources listed below, the lower extreme voltage shall not be higher, and the higher extreme voltage shall not be lower than that specified below.

**Table 4.1.2-1: Voltage conditions**

| <b>Power source</b>         | <b>Lower extreme voltage</b> | <b>Higher extreme voltage</b> | <b>Normal conditions voltage</b> |
|-----------------------------|------------------------------|-------------------------------|----------------------------------|
| AC mains                    | 0.9 * nominal                | 1.1 * nominal                 | nominal                          |
| Regulated lead acid battery | 0.9 * nominal                | 1.3 * nominal                 | 1.1 * nominal                    |
| Non regulated batteries:    |                              |                               |                                  |
| Leclanché                   | 0.85 * nominal               | nominal                       | nominal                          |
| Lithium                     | 0.95 * nominal               | 1.1 * nominal                 | 1.1 * nominal                    |
| Mercury/nickel & cadmium    | 0.90 * nominal               |                               | nominal                          |

Outside this voltage range the UE if powered on, shall not make ineffective use of the radio frequency spectrum. In no case shall the UE exceed the transmitted levels as defined in TS 38.101-1[7] and TS 38.101-2[8] clause 6.2 for extreme operation. In particular, the UE shall inhibit all RF transmissions when the power supply voltage is below the manufacturer declared shutdown voltage.

The normative reference for this requirement is TS 38.101-1 [7] Annex E.2 and TS 38.101-2 [8] Annex E.2.

Some tests are performed also in extreme voltage conditions. These test conditions are denoted as VL (lower extreme voltage) and VH (higher extreme voltage).

## 4.2 Common requirements of test equipment

Mobile conformance testing can be categorized into 3 distinct areas:

- RF Conformance Testing consisting of:
  - Transmission and Reception Conformance Testing.
  - Performance Conformance Testing.
- RRM Conformance Testing.
- Signalling Conformance Testing.

The test equipment required for each category of testing may or not be different, depending on the supplier of the test equipment. However, there will be some generic requirements of the test equipment that are essential for all three categories of test, and these are specified in this clause.

In addition, there will be requirements to test operation in multi-system configurations other than E-UTRA and NR dual connectivity (EN-DC). However, these would not form a common test equipment requirement for the three test areas and are not considered in the present document.

### 4.2.1 General functional requirements

**NOTE:** This clause has been written such that it does not constrain the implementation of different architectures and designs of test equipment.

All test equipment used to perform conformance testing for frequency range 1 on a UE shall provide the following minimum functionality:

- Conducted test method

All test equipment used to perform conformance testing for frequency range 2 on a UE shall provide the following minimum functionality:

- OTA test method

All test equipment used to perform conformance testing on a UE shall provide a platform suitable for testing UE's that are either:

- non-standalone(NSA) mode; or
- standalone(SA) mode.

All test equipment used to perform conformance testing on a UE shall provide a platform suitable for testing UE's that are either of following duplex mode for NR and E-UTRA (NSA only) respectively.

- a) FDD Mode; or
- b) TDD Mode; or
- c) both FDD/TDD Modes.

All test equipment shall provide the following minimum functionality.

- The capability of emulating a single NR cell and a single E-UTRA (for NSA mode only) cell with the appropriate channels to allow the UE to register on the cell.
- The capability to allow the UE to set up an RRC connection with the system simulator, and to maintain the connection for the duration of the test.
- The capability (for the specific test):
  - to select and support an appropriate radio bearer for the downlink;
  - to set up and support the appropriate radio bearer for the uplink;

## 4.2.2 Minimum functional requirements

### 4.2.2.1 Supported Cell Configuration

The System Simulator shall provide the capability to simulate a minimum number of cells whose number and capabilities are governed by the test cases that need to be performed (test cases are defined in TS 38.523-1 [12] (Signalling), TS 38.521-1 [14], TS 38.521-2 [15], TS 38.521-3 [16] (TRx), TS 38.521-4 [17] (Performance), TS 38.533 [18] (RRM), TS 37.571-1 [39] and TS 37.571-2 [40] (Positioning)).

To perform test cases requiring multiple cell(s), the system simulator shall provide multiple cells offering the capabilities as required by the test case.

The type and number of channels (especially physical channels) constitute an important set of capabilities for a cell. The following clauses list possible channels that may be supported by the SS. Each channel type, however, and the minimum number of channels needed are only mandatory if specific test cases require them.

The mapping between Logical and Transport channels is as described in TS 38.321 [20]. Similarly, the mapping between Transport channels and Physical channels is as described in TS 38.211, TS 38.302 and TS 38.212. The reference measurement channels (mapping between Transport channels and Physical channels for PDSCH/PDCCH) are defined in TS 38.521-1 [14] annex A

#### 4.2.2.1.1 Supported Channels for an E-UTRA cell (NSA mode only)

Requirement for supported channels for E-UTRA cell is described in TS 36.508[2].

#### 4.2.2.1.2 Supported Channels for a NR cell

##### 4.2.2.1.2.1 Logical channels

| Logical channel | Minimum number        | Comments   |
|-----------------|-----------------------|--|
| BCCH            | 0 for EN-DC, 1 for SA |  |
| CCCH            | 0 for EN-DC, 1 for SA |  |
| DCCH            | 0 for EN-DC, 2 for SA | Split SRB or SRB3 is optional in EN-DC           |
| PCCH            | 0 for EN-DC, 1 for SA |  |
| DTCH            | n                     | Depending on SS's support for RB service testing |

##### 4.2.2.1.2.2 Transport channels

| Transport channel | Minimum number | Comments |
|-------------------|----------------|----------|
|-------------------|----------------|----------|

|        |                         |  |
|--------|-------------------------|--|
| BCH    | 1                       |  |
| PCH    | N/A for EN-DC, 1 for SA |  |
| RACH   | 1                       |  |
| DL-SCH | 1                       |  |
| UL-SCH | 1                       |  |

#### 4.2.2.1.2.3 Physical channels

| Physical channel | Minimum number | Comments  |
|------------------|----------------|---|
| PBCH             | 1              | Physical Broadcast Channel  |
| PDCCH            | 1              | The physical downlink control channel carries scheduling assignments and other control information. |
| PDSCH            | 1              | Physical Downlink Shared Channel  |
| PUCCH            | 1              | The physical uplink control channel carries uplink control information                              |
| PUSCH            | 1              | Physical Uplink Shared Channel  |
| PRACH            | 1              | Physical Random Access Channel  |

#### 4.2.2.1.2.4 Physical signals

| Physical signal                      | Minimum number | Comments          |
|--------------------------------------|----------------|-------------------|
| Demodulation reference signal        | NA             | UL                |
| Sounding Reference signal            | NA             | UL, if applicable |
| Phase Tracking Reference Signal      | NA             | UL, if applicable |
| Demodulation reference signal(PDSCH) | NA             | DL                |
| Demodulation reference signal(PDCCH) | NA             | DL                |
| Demodulation reference signal(PBCH)  | NA             | DL                |
| Phase Tracking Reference Signal      | NA             | DL, if applicable |
| CSI reference signal                 | NA             | DL                |
| Primary synchronisation signal       | NA             | DL                |
| Secondary synchronisation signal     | NA             | DL                |

## 4.3 Reference test conditions

### 4.3.1 Test frequencies

#### 4.3.1.0 General

The test frequencies are based on operating bands defined in TS 38.101-1 [7], TS 38.101-2 [8] and TS 38.101-3 [9].

#### 4.3.1.0A Mid test channel bandwidth

The Mid test channel bandwidth definition for RF is given in Table 4.3.1.0A-1 and Table 4.3.1.0A-2 for FR1 and FR2 respectively.

**Table 4.3.1.0A-1: Mid Test Channel bandwidths for each NR band, FR1**

| NR band / UE Mid Test Channel bandwidth  | Mid [MHz]                         |
|--|-----------------------------------|
| n1   | 15 <sup>6</sup> , 25 <sup>7</sup> |
| n2   | 15                                |
| n3   | 20                                |
| n5   | 15                                |
| n7   | 15 <sup>6</sup> , 25 <sup>7</sup> |
| n8   | 15                                |
| n12  | 10                                |
| n14  | 10                                |
| n20  | 15                                |
| n25  | 15                                |
| n26  | 10 <sup>8</sup>                   |
| n28  | 15                                |
| n29  | 10 <sup>2</sup>                   |
| n30  | 10                                |
| n34  | 10                                |
| n38  | 15                                |
| n39  | 20                                |
| n40  | 30                                |
| n41  | 60                                |
| n48  | 20 <sup>4</sup> , 40 <sup>5</sup> |
| n50  | 20                                |
| n51  | 5                                 |
| n53  | 10                                |
| n65  | 15                                |
| n66  | 20                                |
| n70  | 15                                |
| n71  | 10                                |
| n74  | 15                                |
| n75  | 15 <sup>2</sup>                   |
| n76  | 5 <sup>2</sup>                    |
| n77  | 50                                |
| n78  | 50                                |
| n79  | 60                                |
| n80  | 20 <sup>3</sup>                   |
| n81  | 15 <sup>3</sup>                   |
| n82  | 15 <sup>3</sup>                   |
| n83  | 15 <sup>3</sup>                   |
| n84  | 15 <sup>3</sup>                   |
| n86  | 20 <sup>3</sup>                   |
| Note 1: For UEs with limited UE channel bandwidth capability, if mid channel BW is not supported by the UE, select the closest channel BW to the average channel BW of all supported channel bandwidths among all SCSs. If there are two channel bandwidths that have same distance to the mathematical center, the higher one is selected. This shall apply only for Rel 15 UEs.<br>Note 2: This UE channel bandwidth is applicable only to downlink.<br>Note 3: This UE channel bandwidth is applicable only to uplink.<br>Note 4: Applicable when for use as single carrier, PCell in CA or PCell in DC configuration.<br>Note 5: Applicable for use as SCell in CA or SCell in DC configuration. |                                   |

|         |  |
|---------|--|
| Note 6: | This Mid test channel bandwidth is applicable to UEs supporting maximum channel bandwidth 20MHz. |
| Note 7: | This Mid test channel bandwidth is applicable to UEs supporting maximum channel bandwidth 50MHz. |
| Note 8: | This Mid test channel bandwidth is chosen since it is more commonly used.                        |

**Table 4.3.0A.1-2: Mid Test Channel bandwidths for each NR band, FR2**

| NR band / UE Mid Test Channel bandwidth |           |
|---|-----------|
| NR Band                                 | Mid [MHz] |
| n257                                    | 200       |
| n258                                    | 200       |
| n260                                    | 200       |
| n261                                    | 200       |

Note 1: For UEs with limited UE channel bandwidth capability, if mid channel BW is not supported by the UE, select the closest channel BW to the average channel BW of all supported channel bandwidths among all SCSs. If there are two channel bandwidths that have same distance to the mathematical center, the higher one is selected. This shall apply only for Rel 15 UEs.

#### 4.3.1.0B Low test channel bandwidth

The low test channel bandwidth definition for RF is given in Table 4.3.1.0B-1 and Table 4.3.1.0B-2 for FR1 and FR2 respectively.

**Table 4.3.1.0B-1: Low Test Channel bandwidths for each NR band, FR1**

| NR band / UE Low Test Channel bandwidth  |             |
|--|-------------|
| NR Band  | Low [MHz]   |
| n1   | 5           |
| n2   | 5           |
| n3   | 5           |
| n5   | 5           |
| n7   | 5           |
| n8   | 5           |
| n12  | 5           |
| n14  | 5           |
| n20  | 5           |
| n25  | 5           |
| n26  | 5           |
| n28  | 5           |
| n29  | $5^2$       |
| n30  | 5           |
| n34  | 5           |
| n38  | 5           |
| n39  | 5           |
| n40  | $5^4, 10^5$ |
| n41  | 10          |
| n48  | $5^4, 10^5$ |
| n50  | $5^4, 10^5$ |
| n51  | 5           |
| n53  | 5           |
| n65  | 5           |
| n66  | 5           |
| n70  | 5           |
| n71  | 5           |
| n74  | 5           |
| n75  | $5^2$       |
| n76  | $5^2$       |
| n77  | 10          |
| n78  | 10          |
| n79  | 40          |
| n80  | $5^3$       |
| n81  | $5^3$       |
| n82  | $5^3$       |
| n83  | $5^3$       |
| n84  | $5^3$       |
| n86  | $5^3$       |
| Note 1: For UEs with limited UE channel bandwidth capability, if the above defined low channel bandwidth is not supported by the UE, select the closest channel bandwidth in both DL and UL. This shall apply only for Rel.15 UEs. |             |
| Note 2: This UE channel bandwidth is applicable only to downlink.  |             |
| Note 3: This UE channel bandwidth is applicable only to uplink.  |             |
| Note 4: Applicable for use as SCell in CA or SCell in DC configuration.  |             |

Note 5: Applicable for use as single carrier, PCell in CA or PCell in DC configuration.

**Table 4.3.1.0B-2: Low Test Channel bandwidths for each NR band, FR2**

| NR band / UE Low Test Channel bandwidth |           |
|---|-----------|
| NR Band                                 | Low [MHz] |
| n257                                    | 50        |
| n258                                    | 50        |
| n260                                    | 50        |
| n261                                    | 50        |

Note 1: For UEs with limited UE channel bandwidth capability, if the above defined low channel bandwidth is not supported by the UE, select the closest channel bandwidth in both DL and UL. This shall apply only for Rel.15 UEs..

#### 4.3.1.0C High test channel bandwidth

The high test channel bandwidth definition for RF is given in Table 4.3.1.0C-1 and Table 4.3.1.0C-2 for FR1 and FR2 respectively.

**Table 4.3.1.0C-1: High Test Channel bandwidths for each NR band, FR1**

| NR band / UE High Test Channel bandwidth  |               |
|---|---------------|
| NR Band   | High [MHz]    |
| n1  | $20^6, 50^7$  |
| n2  | 20            |
| n3  | $30^8, 40^9$  |
| n5  | 20            |
| n7  | $20^6, 50^7$  |
| n8  | 20            |
| n12   | 15            |
| n14   | 10            |
| n20   | 20            |
| n25   | $20^6, 40^9$  |
| n26   | 20            |
| n28   | $20^6, 30^8$  |
| n29   | $10^2$        |
| n30   | 10            |
| n34   | 15            |
| n38   | 20            |
| n39   | 40            |
| n40   | 80            |
| n41   | 100           |
| n48   | $40^3, 100^4$ |
| n50   | 80            |
| n51   | 5             |
| n53   | 10            |
| n65   | 20            |
| n66   | 40            |
| n70   | $15^1/25^2$   |
| n71   | 20            |
| n74   | 20            |
| n75   | $20^2$        |
| n76   | $5^2$         |
| n77   | 100           |
| n78   | 100           |
| n79   | 100           |
| n80   | $30^1$        |
| n81   | $20^1$        |
| n82   | $20^1$        |
| n83   | $20^1$        |
| n84   | $20^1$        |
| n86   | $40^1$        |
| Note 1: This UE channel bandwidth is applicable only to uplink.   |               |
| Note 2: This UE channel bandwidth is applicable only to downlink.   |               |
| Note 3: Applicable for use as single carrier, PCell in CA or PCell in DC configuration.   |               |
| Note 4: Applicable for use as DL SCell in CA or DL SCell in DC configuration.   |               |
| Note 5: For UEs with limited UE channel bandwidth capability, if the above defined high channel bandwidth is not supported by the UE, select the closest channel bandwidth in both DL and UL. This shall apply only for Rel-15 UEs. |               |
| Note 6: This High test channel bandwidth is applicable to UEs supporting maximum channel bandwidth 20MHz.   |               |
| Note 7: This High test channel bandwidth is applicable to UEs supporting maximum channel bandwidth 50MHz.   |               |

- |         |   |
|---------|---|
| Note 8: | This High test channel bandwidth is applicable to UEs supporting maximum channel bandwidth 30MHz. |
| Note 9: | This High test channel bandwidth is applicable to UEs supporting maximum channel bandwidth 40MHz. |

**Table 4.3.1.0C-2: High Test Channel bandwidths for each NR band, FR2**

| NR band / UE High Test Channel bandwidth  |            |
|---|------------|
| NR Band   | High [MHz] |
| n257  | 400        |
| n258  | 400        |
| n260  | 400        |
| n261  | 400        |
| Note 1: For UEs with limited UE channel bandwidth capability, if the above defined high channel bandwidth is not supported by the UE, select the closest channel bandwidth in both DL and UL. This shall apply only for Rel-15 UEs. |            |

#### 4.3.1.0D Bandwidth part

The value of *locationAndBandwidth* in *BWP* for FR1 is given in Table 4.3.1.0D-1. The value of *locationAndBandwidth* in *BWP* for FR2 is given in Table 4.3.1.0D-2.

**Table 4.3.1.0D-1: *locationAndBandwidth* in BWP for FR1**

| <b>BW<br/>[MHz]</b>   | <b>SCS<br/>[kHz]</b> | <b>L_RBs<br/>(MAX N<sub>RB</sub>)</b> | <b>locationAndBandwidth<br/>(Note 1)</b> |
|---|----------------------|---------------------------------------|--|
| 5   | 15                   | 25                                    | 6600                                     |
| 5   | 30                   | 11                                    | 2750                                     |
| 5   | 60                   | N/A                                   | N/A                                      |
| 10  | 15                   | 52                                    | 14025                                    |
| 10  | 30                   | 24                                    | 6325                                     |
| 10  | 60                   | 11                                    | 2750                                     |
| 15  | 15                   | 79                                    | 21450                                    |
| 15  | 30                   | 38                                    | 10175                                    |
| 15  | 60                   | 18                                    | 4675                                     |
| 20  | 15                   | 106                                   | 28875                                    |
| 20  | 30                   | 51                                    | 13750                                    |
| 20  | 60                   | 24                                    | 6325                                     |
| 25  | 15                   | 133                                   | 36300                                    |
| 25  | 30                   | 65                                    | 17600                                    |
| 25  | 60                   | 31                                    | 8250                                     |
| 30  | 15                   | 160                                   | 32174                                    |
| 30  | 30                   | 78                                    | 21175                                    |
| 30  | 60                   | 38                                    | 10175                                    |
| 40  | 15                   | 216                                   | 16774                                    |
| 40  | 30                   | 106                                   | 28875                                    |
| 40  | 60                   | 51                                    | 13750                                    |
| 50  | 15                   | 270                                   | 1924                                     |
| 50  | 30                   | 133                                   | 36300                                    |
| 50  | 60                   | 65                                    | 17600                                    |
| 60  | 15                   | N/A                                   | N/A                                      |
| 60  | 30                   | 162                                   | 31624                                    |
| 60  | 60                   | 79                                    | 21450                                    |
| 70  | 15                   | N/A                                   | N/A                                      |
| 70  | 30                   | 189                                   | 24199                                    |
| 70  | 60                   | 93                                    | 25300                                    |
| 80  | 15                   | N/A                                   | N/A                                      |
| 80  | 30                   | 217                                   | 16499                                    |
| 80  | 60                   | 107                                   | 29150                                    |
| 90  | 15                   | N/A                                   | N/A                                      |
| 90  | 30                   | 245                                   | 8799                                     |
| 90  | 60                   | 121                                   | 33000                                    |
| 100   | 15                   | N/A                                   | N/A                                      |
| 100   | 30                   | 273                                   | 1099                                     |
| 100   | 60                   | 135                                   | 36850                                    |
| Note 1: The value for <i>locationAndBandwidth</i> parameter is calculated as the RIV value in accordance to TS 38.214 [21] with $N_{\text{BWP}}^{\text{size}} = 275$ , $RB_{\text{start}} = 0$ and $L_{RBs} = \text{Max } N_{\text{RB}}$ for each bandwidth and subcarrier spacing. |                      |                                       |  |

**Table 4.3.1.0D-2: *locationAndBandwidth* in BWP for FR2**

| BW [MHz] | SCS [kHz] | L_RBs (MAX N <sub>RB</sub> ) | locationAndBandwidth (Note 1) |
|----------|-----------|------------------------------|-------------------------------|
| 50       | 60        | 66                           | 17875                         |
| 50       | 120       | 32                           | 8525                          |
| 100      | 60        | 132                          | 36025                         |
| 100      | 120       | 66                           | 17875                         |
| 200      | 60        | 264                          | 3574                          |
| 200      | 120       | 132                          | 36025                         |
| 400      | 60        | N/A                          | N/A                           |
| 400      | 120       | 264                          | 3574                          |

Note 1: The value for *locationAndBandwidth* parameter is calculated as the RIV value in accordance to TS 38.214 [21] with  $N_{\text{BWP}}^{\text{size}} = 275$ ,  $RB_{\text{start}} = 0$  and  $L_{RBs} = \text{Max } N_{\text{RB}}$  for each bandwidth and subcarrier spacing.

#### 4.3.1.0E      Void

### 4.3.1.1 Test frequencies for NR operating bands in FR1

#### 4.3.1.1.1 NR operating bands in FR1

##### 4.3.1.1.1.1 Reference test frequencies for NR operating band n1

**Table 4.3.1.1.1.1-1: Test frequencies for NR operating band n1 and SCS 15 kHz**

| CBW [MHz] | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 Index (Offset [RBs]) Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---|--|-------------------------------------|
| 5         | 25                       | Downlink | Low  | 2112.5               | 422500                 | 2110.25       | 422050                            | 0                               | 15                 | 5279 | 422410                        | 0         | 0   | 0 (0)                                  | 0                                   |
|           |                          |          | Mid  | 2140                 | 428000                 | 2119.39       | 423878                            | 102                             |                    | 5350 | 427970                        | 8         | 1   | 0 (0)                                  | 103                                 |
|           |                          |          | High | 2167.5               | 433500                 | 2074.53       | 414906                            | 504                             |                    | 5418 | 433470                        | 8         | 1   | 0 (0)                                  | 505                                 |
|           |                          | Uplink   | Low  | 1922.5               | 384500                 | 1920.25       | 384050                            | 0                               | -                  | -    | -                             | -         | -   | -                                      | -                                   |
|           |                          |          | Mid  | 1950                 | 390000                 | 1857.03       | 371406                            | 504                             |                    | -    | -                             | -         | -   | -                                      | -                                   |
|           |                          |          | High | 1977.5               | 395500                 | 1974.17       | 394834                            | 6                               |                    | -    | -                             | -         | -   | -                                      | -                                   |
|           |                          | Downlink | Low  | 2115                 | 423000                 | 2110.32       | 422064                            | 0                               | 15                 | 5280 | 422430                        | 2         | 0   | 0 (0)                                  | 0                                   |
|           |                          |          | Mid  | 2140                 | 428000                 | 2116.96       | 423392                            | 102                             |                    | 5344 | 427490                        | 10        | 1   | 0 (0)                                  | 103                                 |
|           |                          |          | High | 2165                 | 433000                 | 2069.6        | 413920                            | 504                             |                    | 5405 | 432490                        | 10        | 1   | 0 (0)                                  | 505                                 |
| 10        | 52                       | Uplink   | Low  | 1925                 | 385000                 | 1920.32       | 384064                            | 0                               | -                  | -    | -                             | -         | -   | -                                      | -                                   |
|           |                          |          | Mid  | 1950                 | 390000                 | 1854.6        | 370920                            | 504                             |                    | -    | -                             | -         | -   | -                                      | -                                   |
|           |                          |          | High | 1975                 | 395000                 | 1969.24       | 393848                            | 6                               |                    | -    | -                             | -         | -   | -                                      | -                                   |
|           |                          | Downlink | Low  | 2117.5               | 423500                 | 2110.39       | 422078                            | 0                               | 15                 | 5281 | 422450                        | 4         | 0   | 0 (0)                                  | 0                                   |
|           |                          |          | Mid  | 2140                 | 428000                 | 2114.53       | 422906                            | 102                             |                    | 5338 | 427010                        | 0         | 0   | 1 (2)                                  | 104                                 |
|           |                          |          | High | 2162.5               | 432500                 | 2064.67       | 412934                            | 504                             |                    | 5395 | 431570                        | 8         | 1   | 1 (2)                                  | 507                                 |
| 15        | 79                       | Uplink   | Low  | 1927.5               | 385500                 | 1920.39       | 384078                            | 0                               | -                  | -    | -                             | -         | -   | -                                      | -                                   |
|           |                          |          | Mid  | 1950                 | 390000                 | 1852.17       | 370434                            | 504                             |                    | -    | -                             | -         | -   | -                                      | -                                   |
|           |                          |          | High | 1972.5               | 394500                 | 1964.31       | 392862                            | 6                               |                    | -    | -                             | -         | -   | -                                      | -                                   |
|           |                          | Downlink | Low  | 2120                 | 424000                 | 2110.46       | 422092                            | 0                               | 15                 | 5282 | 422650                        | 6         | 1   | 2 (4)                                  | 5                                   |
|           |                          |          | Mid  | 2140                 | 428000                 | 2112.1        | 422420                            | 102                             |                    | 5332 | 426530                        | 2         | 0   | 1 (2)                                  | 104                                 |
|           |                          |          | High | 2160                 | 432000                 | 2059.74       | 411948                            | 504                             |                    | 5382 | 430590                        | 10        | 1   | 1 (2)                                  | 507                                 |
| 20        | 106                      | Uplink   | Low  | 1930                 | 386000                 | 1920.46       | 384092                            | 0                               | -                  | -    | -                             | -         | -   | -                                      | -                                   |
|           |                          |          | Mid  | 1950                 | 390000                 | 1849.74       | 369948                            | 504                             |                    | -    | -                             | -         | -   | -                                      | -                                   |
|           |                          |          | High | 1970                 | 394000                 | 1959.38       | 391876                            | 6                               |                    | -    | -                             | -         | -   | -                                      | -                                   |
|           |                          | Downlink | Low  | 2122.5               | 424500                 | 2110.53       | 422106                            | 0                               | 15                 | 5283 | 422670                        | 8         | 1   | 2 (4)                                  | 5                                   |
|           |                          |          | Mid  | 2140                 | 428000                 | 2109.67       | 421934                            | 102                             |                    | 5326 | 426050                        | 4         | 0   | 1 (2)                                  | 104                                 |
|           |                          |          | High | 2157.5               | 431500                 | 2054.81       | 410962                            | 504                             |                    | 5369 | 429610                        | 0         | 0   | 2 (4)                                  | 508                                 |

|    |     |          |      |        |        |         |        |     |    |      |        |    |   |       |     |   |
|----|-----|----------|------|--------|--------|---------|--------|-----|----|------|--------|----|---|-------|-----|---|
|    |     | Uplink   | Low  | 1932.5 | 386500 | 1920.53 | 384106 | 0   | -  | -    | -      | -  | - | -     | -   | - |
|    |     |          | Mid  | 1950   | 390000 | 1847.31 | 369462 | 504 |    | -    | -      | -  | - | -     | -   | - |
|    |     |          | High | 1967.5 | 393500 | 1954.45 | 390890 | 6   |    | -    | -      | -  | - | -     | -   | - |
| 30 | 160 | Downlink | Low  | 2125   | 425000 | 2110.6  | 422120 | 0   | 15 | 5284 | 422690 | 10 | 1 | 2 (4) | 5   |   |
|    |     |          | Mid  | 2140   | 428000 | 2107.24 | 421448 | 102 |    | 5320 | 425570 | 6  | 0 | 1 (2) | 104 |   |
|    |     |          | High | 2155   | 431000 | 2049.88 | 409976 | 504 |    | 5359 | 428690 | 10 | 1 | 2 (4) | 509 |   |
|    |     | Uplink   | Low  | 1935   | 387000 | 1920.6  | 384120 | 0   | -  | -    | -      | -  | - | -     | -   |   |
|    |     |          | Mid  | 1950   | 390000 | 1844.88 | 368976 | 504 |    | -    | -      | -  | - | -     | -   |   |
|    |     |          | High | 1965   | 393000 | 1949.52 | 389904 | 6   |    | -    | -      | -  | - | -     | -   |   |
| 40 | 216 | Downlink | Low  | 2130   | 426000 | 2110.56 | 422112 | 0   | 15 | 5283 | 422670 | 6  | 1 | 2 (4) | 5   |   |
|    |     |          | Mid  | 2140   | 428000 | 2102.2  | 420440 | 102 |    | 5308 | 424610 | 10 | 1 | 1 (2) | 105 |   |
|    |     |          | High | 2150   | 430000 | 2039.84 | 407968 | 504 |    | 5330 | 426490 | 6  | 0 | 0 (0) | 504 |   |
|    |     | Uplink   | Low  | 1940   | 388000 | 1920.56 | 384112 | 0   | -  | -    | -      | -  | - | -     | -   |   |
|    |     |          | Mid  | 1950   | 390000 | 1839.84 | 367968 | 504 |    | -    | -      | -  | - | -     | -   |   |
|    |     |          | High | 1960   | 392000 | 1939.48 | 387896 | 6   |    | -    | -      | -  | - | -     | -   |   |
| 50 | 270 | Downlink | Low  | 2135   | 427000 | 2110.7  | 422140 | 0   | 15 | 5282 | 422650 | 2  | 0 | 2 (4) | 4   |   |
|    |     |          | Mid  | 2140   | 428000 | 2097.34 | 419468 | 102 |    | 5296 | 423650 | 2  | 0 | 2 (4) | 106 |   |
|    |     |          | High | 2145   | 429000 | 2029.98 | 405996 | 504 |    | 5307 | 424590 | 6  | 0 | 1 (2) | 506 |   |
|    |     | Uplink   | Low  | 1945   | 389000 | 1920.7  | 384140 | 0   | -  | -    | -      | -  | - | -     | -   |   |
|    |     |          | Mid  | 1950   | 390000 | 1834.98 | 366996 | 504 |    | -    | -      | -  | - | -     | -   |   |
|    |     |          | High | 1955   | 391000 | 1929.62 | 385924 | 6   |    | -    | -      | -  | - | -     | -   |   |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.1.1-2: Test frequencies for NR operating band n1 and SCS 30 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 Index [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetTo PointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|
| 10        | 24                       | Downlink | Low  | 2115                 | 423000                 | 2110.68       | 422136                            | 0                               | 15                 | 5286 | 422910                        | 18        | 0  | 0 (5)                                  | 10                                   |
|           |                          |          | Mid  | 2140                 | 428000                 | 2098.96       | 419792                            | 102                             |                    | 5350 | 427970                        | 14        | 0  | 1 (6)                                  | 216                                  |
|           |                          |          | High | 2165                 | 433000                 | 1979.24       | 395848                            | 504                             |                    | 5411 | 432970                        | 14        | 0  | 1 (6)                                  | 1020                                 |
|           |                          | Uplink   | Low  | 1925                 | 385000                 | 1920.68       | 384136                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | Mid  | 1950                 | 390000                 | 1764.24       | 352848                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | High | 1975                 | 395000                 | 1968.52       | 393704                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                    |
| 15        | 38                       | Downlink | Low  | 2117.5               | 423500                 | 2110.66       | 422132                            | 0                               | 15                 | 5287 | 422930                        | 2         | 0  | 1 (6)                                  | 12                                   |
|           |                          |          | Mid  | 2140                 | 428000                 | 2096.44       | 419288                            | 102                             |                    | 5344 | 427490                        | 22        | 0  | 1 (6)                                  | 216                                  |
|           |                          |          | High | 2162.5               | 432500                 | 1974.22       | 394844                            | 504                             |                    | 5401 | 432050                        | 18        | 0  | 2 (7)                                  | 1022                                 |
|           |                          | Uplink   | Low  | 1927.5               | 385500                 | 1920.66       | 384132                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | Mid  | 1950                 | 390000                 | 1761.72       | 352344                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | High | 1972.5               | 394500                 | 1963.5        | 392700                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                    |
| 20        | 51                       | Downlink | Low  | 2120                 | 424000                 | 2110.82       | 422164                            | 0                               | 15                 | 5285 | 422890                        | 2         | 0  | 0 (5)                                  | 10                                   |
|           |                          |          | Mid  | 2140                 | 428000                 | 2094.1        | 418820                            | 102                             |                    | 5338 | 427010                        | 18        | 0  | 1 (6)                                  | 216                                  |
|           |                          |          | High | 2160                 | 432000                 | 1969.38       | 393876                            | 504                             |                    | 5388 | 431070                        | 14        | 0  | 2 (7)                                  | 1022                                 |
|           |                          | Uplink   | Low  | 1930                 | 386000                 | 1920.82       | 384164                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | Mid  | 1950                 | 390000                 | 1759.38       | 351876                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | High | 1970                 | 394000                 | 1958.66       | 391732                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                    |
| 25        | 65                       | Downlink | Low  | 2122.5               | 424500                 | 2110.8        | 422160                            | 0                               | 15                 | 5286 | 422910                        | 10        | 0  | 0 (5)                                  | 10                                   |
|           |                          |          | Mid  | 2140                 | 428000                 | 2091.58       | 418316                            | 102                             |                    | 5332 | 426530                        | 2         | 0  | 2 (7)                                  | 218                                  |
|           |                          |          | High | 2157.5               | 431500                 | 1964.36       | 392872                            | 504                             |                    | 5375 | 430090                        | 22        | 0  | 2 (7)                                  | 1022                                 |
|           |                          | Uplink   | Low  | 1932.5               | 386500                 | 1920.8        | 384160                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | Mid  | 1950                 | 390000                 | 1756.86       | 351372                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | High | 1967.5               | 393500                 | 1953.64       | 390728                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                    |
| 30        | 78                       | Downlink | Low  | 2125                 | 425000                 | 2110.96       | 422192                            | 0                               | 15                 | 5287 | 422930                        | 6         | 0  | 0 (5)                                  | 10                                   |
|           |                          |          | Mid  | 2140                 | 428000                 | 2089.24       | 417848                            | 102                             |                    | 5326 | 426050                        | 22        | 0  | 1 (6)                                  | 216                                  |
|           |                          |          | High | 2155                 | 431000                 | 1959.52       | 391904                            | 504                             |                    | 5362 | 428930                        | 6         | 0  | 0 (5)                                  | 1018                                 |
|           |                          | Uplink   | Low  | 1935                 | 387000                 | 1920.96       | 384192                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | Mid  | 1950                 | 390000                 | 1754.52       | 350904                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | High | 1965                 | 393000                 | 1948.8        | 389760                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                    |
| 40        | 106                      | Downlink | Low  | 2130                 | 426000                 | 2110.92       | 422184                            | 0                               | 15                 | 5286 | 422910                        | 2         | 0  | 0 (5)                                  | 10                                   |
|           |                          |          | Mid  | 2140                 | 428000                 | 2084.2        | 416840                            | 102                             |                    | 5314 | 425090                        | 14        | 0  | 2 (7)                                  | 218                                  |
|           |                          |          | High | 2150                 | 430000                 | 1949.48       | 389896                            | 504                             |                    | 5336 | 426970                        | 22        | 0  | 0 (5)                                  | 1018                                 |
|           |                          | Uplink   | Low  | 1940                 | 388000                 | 1920.92       | 384184                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                    |

|  |     |          |      |      |        |         |        |     |    |      |        |    |   |       |      |
|--|-----|----------|------|------|--------|---------|--------|-----|----|------|--------|----|---|-------|------|
|  |     |          | Mid  | 1950 | 390000 | 1749.48 | 349896 | 504 |    | -    | -      | -  | - | -     | -    |
|  |     |          | High | 1960 | 392000 | 1938.76 | 387752 | 6   |    | -    | -      | -  | - | -     | -    |
| 50   | 133 | Downlink | Low  | 2135 | 427000 | 2111.06 | 422212 | 0   | 15 | 5288 | 423130 | 18 | 0 | 2 (7) | 14   |
|  |     |          | Mid  | 2140 | 428000 | 2079.34 | 415868 | 102 |    | 5302 | 424130 | 18 | 0 | 2 (7) | 218  |
|  |     |          | High | 2145 | 429000 | 1939.62 | 387924 | 504 |    | 5313 | 425070 | 22 | 0 | 1 (6) | 1020 |
|  |     | Uplink   | Low  | 1945 | 389000 | 1921.06 | 384212 | 0   |    | -    | -      | -  | - | -     | -    |
|  |     |          | Mid  | 1950 | 390000 | 1744.62 | 348924 | 504 |    | -    | -      | -  | - | -     | -    |
|  |     |          | High | 1955 | 391000 | 1928.9  | 385780 | 6   |    | -    | -      | -  | - | -     | -    |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta f_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |     |          |      |      |        |         |        |     |    |      |        |    |   |       |      |

Table 4.3.1.1.1-3: Test frequencies for NR operating band n1 and SCS 60 kHz without CORESET#0

| CBW [MHz] | carrierBand width [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|-----------|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|-------------------------|--------------------|------|-------------------------------|
| 10        | 11                       | Downlink | Low  | 2115                 | 423000                 | 2111.04       | 422208                            | 0                       | 15                 | -    | 422568                        |
|           |                          |          | Mid  | 2140                 | 428000                 | 2062.6        | 412520                            | 102                     |                    | -    | 427568                        |
|           |                          |          | High | 2165                 | 433000                 | 1798.16       | 359632                            | 504                     |                    | -    | 432568                        |
|           |                          | Uplink   | Low  | 1925                 | 385000                 | 1921.04       | 384208                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1950                 | 390000                 | 1583.16       | 316632                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 1975                 | 395000                 | 1966.72       | 393344                            | 6                       |                    | -    | -                             |
| 15        | 18                       | Downlink | Low  | 2117.5               | 423500                 | 2111.02       | 422204                            | 0                       | 15                 | -    | 422564                        |
|           |                          |          | Mid  | 2140                 | 428000                 | 2060.08       | 412016                            | 102                     |                    | -    | 427064                        |
|           |                          |          | High | 2162.5               | 432500                 | 1793.14       | 358628                            | 504                     |                    | -    | 431564                        |
|           |                          | Uplink   | Low  | 1927.5               | 385500                 | 1921.02       | 384204                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1950                 | 390000                 | 1580.64       | 316128                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 1972.5               | 394500                 | 1961.7        | 392340                            | 6                       |                    | -    | -                             |
| 20        | 24                       | Downlink | Low  | 2120                 | 424000                 | 2111.36       | 422272                            | 0                       | 15                 | -    | 422632                        |
|           |                          |          | Mid  | 2140                 | 428000                 | 2057.92       | 411584                            | 102                     |                    | -    | 426632                        |
|           |                          |          | High | 2160                 | 432000                 | 1788.48       | 357696                            | 504                     |                    | -    | 430632                        |
|           |                          | Uplink   | Low  | 1930                 | 386000                 | 1921.36       | 384272                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1950                 | 390000                 | 1578.48       | 315696                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 1970                 | 394000                 | 1957.04       | 391408                            | 6                       |                    | -    | -                             |
| 25        | 31                       | Downlink | Low  | 2122.5               | 424500                 | 2111.34       | 422268                            | 0                       | 15                 | -    | 422628                        |
|           |                          |          | Mid  | 2140                 | 428000                 | 2055.4        | 411080                            | 102                     |                    | -    | 426128                        |
|           |                          |          | High | 2157.5               | 431500                 | 1783.46       | 356692                            | 504                     |                    | -    | 429628                        |
|           |                          | Uplink   | Low  | 1932.5               | 386500                 | 1921.34       | 384268                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1950                 | 390000                 | 1575.96       | 315192                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 1967.5               | 393500                 | 1952.02       | 390404                            | 6                       |                    | -    | -                             |
| 30        | 38                       | Downlink | Low  | 2125                 | 425000                 | 2111.32       | 422264                            | 0                       | 15                 | -    | 422624                        |
|           |                          |          | Mid  | 2140                 | 428000                 | 2052.88       | 410576                            | 102                     |                    | -    | 425624                        |
|           |                          |          | High | 2155                 | 431000                 | 1778.44       | 355688                            | 504                     |                    | -    | 428624                        |
|           |                          | Uplink   | Low  | 1935                 | 387000                 | 1921.32       | 384264                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1950                 | 390000                 | 1573.44       | 314688                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 1965                 | 393000                 | 1947          | 389400                            | 6                       |                    | -    | -                             |
| 40        | 51                       | Downlink | Low  | 2130                 | 426000                 | 2111.64       | 422328                            | 0                       | 15                 | -    | 422688                        |
|           |                          |          | Mid  | 2140                 | 428000                 | 2048.2        | 409640                            | 102                     |                    | -    | 424688                        |
|           |                          |          | High | 2150                 | 430000                 | 1768.76       | 353752                            | 504                     |                    | -    | 426688                        |
|           |                          | Uplink   | Low  | 1940                 | 388000                 | 1921.64       | 384328                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1950                 | 390000                 | 1568.76       | 313752                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 1960                 | 392000                 | 1937.32       | 387464                            | 6                       |                    | -    | -                             |

|   |    |          |      |      |        |         |        |     |    |   |        |
|---|----|----------|------|------|--------|---------|--------|-----|----|---|--------|
| 50  | 65 | Downlink | Low  | 2135 | 427000 | 2111.6  | 422320 | 0   | 15 | - | 422680 |
|   |    |          | Mid  | 2140 | 428000 | 2043.16 | 408632 | 102 |    | - | 423680 |
|   |    |          | High | 2145 | 429000 | 1758.72 | 351744 | 504 |    | - | 424680 |
|   |    | Uplink   | Low  | 1945 | 389000 | 1921.6  | 384320 | 0   | -  | - | -      |
|   |    |          | Mid  | 1950 | 390000 | 1563.72 | 312744 | 504 |    | - | -      |
|   |    |          | High | 1955 | 391000 | 1927.28 | 385456 | 6   |    | - | -      |
| Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$ , $controlResourceSetZero=0$ and $searchSpaceZero = 0$ (TS 38.213 [22], clause 13). |    |          |      |      |        |         |        |     |    |   |        |

## 4.3.1.1.1.2

Reference test frequencies for NR operating band n2

Table 4.3.1.1.1.2-1: Test frequencies for NR operating band n2 and SCS 15 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|-------------------------------------|
| 5  | 25                       | Downlink | Low                  | 1932.5                 | 386500        | 1930.25                           | 386050                          | 0                  | 15   | 4829                          | 386410    | 0                                      | 0                                      | 0 (0)                               |
|  |                          |          | Mid                  | 1960                   | 392000        | 1939.39                           | 387878                          | 102                |      | 4900                          | 391970    | 8                                      | 1                                      | 0 (0)                               |
|  |                          |          | High                 | 1987.5                 | 397500        | 1894.53                           | 378906                          | 504                |      | 4968                          | 397470    | 8                                      | 1                                      | 0 (0)                               |
|  |                          | Uplink   | Low                  | 1852.5                 | 370500        | 1850.25                           | 370050                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                   |
|  |                          |          | Mid                  | 1880                   | 376000        | 1787.03                           | 357406                          | 504                |      | -                             | -         | -                                      | -                                      | -                                   |
|  |                          |          | High                 | 1907.5                 | 381500        | 1904.17                           | 380834                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                   |
|  | 10                       | Downlink | Low                  | 1935                   | 387000        | 1930.32                           | 386064                          | 0                  | 15   | 4830                          | 386430    | 2                                      | 0                                      | 0 (0)                               |
|  |                          |          | Mid                  | 1960                   | 392000        | 1936.96                           | 387392                          | 102                |      | 4894                          | 391490    | 10                                     | 1                                      | 0 (0)                               |
|  |                          |          | High                 | 1985                   | 397000        | 1889.6                            | 377920                          | 504                |      | 4955                          | 396490    | 10                                     | 1                                      | 0 (0)                               |
|  |                          | Uplink   | Low                  | 1855                   | 371000        | 1850.32                           | 370064                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                   |
|  |                          |          | Mid                  | 1880                   | 376000        | 1784.6                            | 356920                          | 504                |      | -                             | -         | -                                      | -                                      | -                                   |
|  |                          |          | High                 | 1905                   | 381000        | 1899.24                           | 379848                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                   |
| 15   | 79                       | Downlink | Low                  | 1937.5                 | 387500        | 1930.39                           | 386078                          | 0                  | 15   | 4831                          | 386450    | 4                                      | 0                                      | 0 (0)                               |
|  |                          |          | Mid                  | 1960                   | 392000        | 1934.53                           | 386906                          | 102                |      | 4888                          | 391010    | 0                                      | 0                                      | 1 (2)                               |
|  |                          |          | High                 | 1982.5                 | 396500        | 1884.67                           | 376934                          | 504                |      | 4945                          | 395570    | 8                                      | 1                                      | 1 (2)                               |
|  |                          | Uplink   | Low                  | 1857.5                 | 371500        | 1850.39                           | 370078                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                   |
|  |                          |          | Mid                  | 1880                   | 376000        | 1782.17                           | 356434                          | 504                |      | -                             | -         | -                                      | -                                      | -                                   |
|  |                          |          | High                 | 1902.5                 | 380500        | 1894.31                           | 378862                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                   |
| 20   | 106                      | Downlink | Low                  | 1940                   | 388000        | 1930.46                           | 386092                          | 0                  | 15   | 4832                          | 386650    | 6                                      | 1                                      | 2 (4)                               |
|  |                          |          | Mid                  | 1960                   | 392000        | 1932.1                            | 386420                          | 102                |      | 4882                          | 390530    | 2                                      | 0                                      | 1 (2)                               |
|  |                          |          | High                 | 1980                   | 396000        | 1879.74                           | 375948                          | 504                |      | 4932                          | 394590    | 10                                     | 1                                      | 1 (2)                               |
|  |                          | Uplink   | Low                  | 1860                   | 372000        | 1850.46                           | 370092                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                   |
|  |                          |          | Mid                  | 1880                   | 376000        | 1779.74                           | 355948                          | 504                |      | -                             | -         | -                                      | -                                      | -                                   |
|  |                          |          | High                 | 1900                   | 380000        | 1889.38                           | 377876                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                   |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                     |

Table 4.3.1.1.2-2: Test frequencies for NR operating band n2 and SCS 30 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 2 | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|
| 10   | 24                       | Downlink | Low  | 1935                 | 387000                 | 1930.68       | 386136                            | 0                               | 15                 | 4836 | 386910                        | 18        | 0                                     | 0 (5)                                 | 10                                  |
|  |                          |          | Mid  | 1960                 | 392000                 | 1918.96       | 383792                            | 102                             |                    | 4900 | 391970                        | 14        | 0                                     | 1 (6)                                 | 216                                 |
|  |                          |          | High | 1985                 | 397000                 | 1799.24       | 359848                            | 504                             |                    | 4961 | 396970                        | 14        | 0                                     | 1 (6)                                 | 1020                                |
|  | Uplink                   | Uplink   | Low  | 1855                 | 371000                 | 1850.68       | 370136                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 1880                 | 376000                 | 1694.24       | 338848                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 1905                 | 381000                 | 1898.52       | 379704                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  | 38                       | Downlink | Low  | 1937.5               | 387500                 | 1930.66       | 386132                            | 0                               | 15                 | 4837 | 386930                        | 2         | 0                                     | 1 (6)                                 | 12                                  |
|  |                          |          | Mid  | 1960                 | 392000                 | 1916.44       | 383288                            | 102                             |                    | 4894 | 391490                        | 22        | 0                                     | 1 (6)                                 | 216                                 |
|  |                          |          | High | 1982.5               | 396500                 | 1794.22       | 358844                            | 504                             |                    | 4951 | 396050                        | 18        | 0                                     | 2 (7)                                 | 1022                                |
|  |                          | Uplink   | Low  | 1857.5               | 371500                 | 1850.66       | 370132                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 1880                 | 376000                 | 1691.72       | 338344                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 1902.5               | 380500                 | 1893.5        | 378700                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  | 51                       | Downlink | Low  | 1940                 | 388000                 | 1930.82       | 386164                            | 0                               | 15                 | 4835 | 386890                        | 2         | 0                                     | 0 (5)                                 | 10                                  |
|  |                          |          | Mid  | 1960                 | 392000                 | 1914.1        | 382820                            | 102                             |                    | 4888 | 391010                        | 18        | 0                                     | 1 (6)                                 | 216                                 |
|  |                          |          | High | 1980                 | 396000                 | 1789.38       | 357876                            | 504                             |                    | 4938 | 395070                        | 14        | 0                                     | 2 (7)                                 | 1022                                |
|  |                          | Uplink   | Low  | 1860                 | 372000                 | 1850.82       | 370164                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 1880                 | 376000                 | 1689.38       | 337876                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 1900                 | 380000                 | 1888.66       | 377732                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |          |      |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |

Table 4.3.1.1.1.2-3: Test frequencies for NR operating band n2 and SCS 60 kHz without CORESET#0

| CBW [MHz] | <i>carrierBand width</i> [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | <i>absolute FrequencyPoint A</i> [ARFCN] | <i>offsetTo Carrier</i> [PRBs] | SS block SCS [kHz] | GSCN | <i>absolute FrequencySSB</i> [ARFCN] |
|-----------|---------------------------------|----------|------|----------------------|------------------------|---------------|--|--------------------------------|--------------------|------|--------------------------------------|
| 10        | 11                              | Downlink | Low  | 1935                 | 387000                 | 1931.04       | 386208                                   | 0                              | 15                 | -    | 386568                               |
|           |                                 |          | Mid  | 1960                 | 392000                 | 1882.6        | 376520                                   | 102                            |                    | -    | 391568                               |
|           |                                 |          | High | 1985                 | 397000                 | 1618.16       | 323632                                   | 504                            |                    | -    | 396568                               |
|           |                                 | Uplink   | Low  | 1855                 | 371000                 | 1851.04       | 370208                                   | 0                              | -                  | -    | -                                    |
|           |                                 |          | Mid  | 1880                 | 376000                 | 1513.16       | 302632                                   | 504                            |                    | -    | -                                    |
|           |                                 |          | High | 1905                 | 381000                 | 1896.72       | 379344                                   | 6                              |                    | -    | -                                    |
| 15        | 18                              | Downlink | Low  | 1937.5               | 387500                 | 1931.02       | 386204                                   | 0                              | 15                 | -    | 386564                               |
|           |                                 |          | Mid  | 1960                 | 392000                 | 1880.08       | 376016                                   | 102                            |                    | -    | 391064                               |
|           |                                 |          | High | 1982.5               | 396500                 | 1613.14       | 322628                                   | 504                            |                    | -    | 395564                               |
|           |                                 | Uplink   | Low  | 1857.5               | 371500                 | 1851.02       | 370204                                   | 0                              | -                  | -    | -                                    |
|           |                                 |          | Mid  | 1880                 | 376000                 | 1510.64       | 302128                                   | 504                            |                    | -    | -                                    |
|           |                                 |          | High | 1902.5               | 380500                 | 1891.7        | 378340                                   | 6                              |                    | -    | -                                    |
| 20        | 24                              | Downlink | Low  | 1940                 | 388000                 | 1931.36       | 386272                                   | 0                              | 15                 | -    | 386632                               |
|           |                                 |          | Mid  | 1960                 | 392000                 | 1877.92       | 375584                                   | 102                            |                    | -    | 390632                               |
|           |                                 |          | High | 1980                 | 396000                 | 1608.48       | 321696                                   | 504                            |                    | -    | 394632                               |
|           |                                 | Uplink   | Low  | 1860                 | 372000                 | 1851.36       | 370272                                   | 0                              | -                  | -    | -                                    |
|           |                                 |          | Mid  | 1880                 | 376000                 | 1508.48       | 301696                                   | 504                            |                    | -    | -                                    |
|           |                                 |          | High | 1900                 | 380000                 | 1887.04       | 377408                                   | 6                              |                    | -    | -                                    |

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ ,  $controlResourceSetZero = 0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).

## 4.3.1.1.1.3

Reference test frequencies for NR operating band n3

Table 4.3.1.1.1.3-1: Test frequencies for NR operating band n3 and SCS 15 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetTo PointA (SIB1) [PRBs] Note 1 |     |
|-----------|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|-----|
| 5         | 25                       | Downlink | Low                  | 1807.5                 | 361500        | 1805.25                           | 361050                          | 0                  | 15   | 4518                          | 361470    | 8                                      | 1                                      | 0 (0)                                | 1   |
|           |                          |          | Mid                  | 1842.5                 | 368500        | 1821.89                           | 364378                          | 102                |      | 4604                          | 368410    | 0                                      | 0                                      | 0 (0)                                | 102 |
|           |                          |          | High                 | 1877.5                 | 375500        | 1784.53                           | 356906                          | 504                |      | 4693                          | 375410    | 0                                      | 0                                      | 0 (0)                                | 504 |
|           |                          | Uplink   | Low                  | 1712.5                 | 342500        | 1710.25                           | 342050                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|           |                          |          | Mid                  | 1747.5                 | 349500        | 1654.53                           | 330906                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|           |                          |          | High                 | 1782.5                 | 356500        | 1779.17                           | 355834                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|           | 10                       | Downlink | Low                  | 1810                   | 362000        | 1805.32                           | 361064                          | 0                  | 15   | 4519                          | 361490    | 10                                     | 1                                      | 0 (0)                                | 1   |
|           |                          |          | Mid                  | 1842.5                 | 368500        | 1819.46                           | 363892                          | 102                |      | 4598                          | 367930    | 2                                      | 0                                      | 0 (0)                                | 102 |
|           |                          |          | High                 | 1875                   | 375000        | 1779.6                            | 355920                          | 504                |      | 4680                          | 374430    | 2                                      | 0                                      | 0 (0)                                | 504 |
|           |                          | Uplink   | Low                  | 1715                   | 343000        | 1710.32                           | 342064                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|           |                          |          | Mid                  | 1747.5                 | 349500        | 1652.1                            | 330420                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|           |                          |          | High                 | 1780                   | 356000        | 1774.24                           | 354848                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
| 15        | 79                       | Downlink | Low                  | 1812.5                 | 362500        | 1805.39                           | 361078                          | 0                  | 15   | 4517                          | 361450    | 4                                      | 0                                      | 0 (0)                                | 0   |
|           |                          |          | Mid                  | 1842.5                 | 368500        | 1817.03                           | 363406                          | 102                |      | 4592                          | 367450    | 4                                      | 0                                      | 0 (0)                                | 102 |
|           |                          |          | High                 | 1872.5                 | 374500        | 1774.67                           | 354934                          | 504                |      | 4667                          | 373450    | 4                                      | 0                                      | 0 (0)                                | 504 |
|           |                          | Uplink   | Low                  | 1717.5                 | 343500        | 1710.39                           | 342078                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|           |                          |          | Mid                  | 1747.5                 | 349500        | 1649.67                           | 329934                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|           |                          |          | High                 | 1777.5                 | 355500        | 1769.31                           | 353862                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
| 20        | 106                      | Downlink | Low                  | 1815                   | 363000        | 1805.46                           | 361092                          | 0                  | 15   | 4518                          | 361470    | 6                                      | 0                                      | 0 (0)                                | 0   |
|           |                          |          | Mid                  | 1842.5                 | 368500        | 1814.6                            | 362920                          | 102                |      | 4586                          | 366970    | 6                                      | 0                                      | 0 (0)                                | 102 |
|           |                          |          | High                 | 1870                   | 374000        | 1769.74                           | 353948                          | 504                |      | 4657                          | 372530    | 2                                      | 0                                      | 1 (2)                                | 506 |
|           |                          | Uplink   | Low                  | 1720                   | 344000        | 1710.46                           | 342092                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|           |                          |          | Mid                  | 1747.5                 | 349500        | 1647.24                           | 329448                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|           |                          |          | High                 | 1775                   | 355000        | 1764.38                           | 352876                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
| 25        | 133                      | Downlink | Low                  | 1817.5                 | 363500        | 1805.53                           | 361106                          | 0                  | 15   | 4519                          | 361490    | 8                                      | 0                                      | 0 (0)                                | 0   |
|           |                          |          | Mid                  | 1842.5                 | 368500        | 1812.17                           | 362434                          | 102                |      | 4580                          | 366490    | 8                                      | 0                                      | 0 (0)                                | 102 |
|           |                          |          | High                 | 1867.5                 | 373500        | 1764.81                           | 352962                          | 504                |      | 4644                          | 371550    | 4                                      | 0                                      | 1 (2)                                | 506 |
|           |                          | Uplink   | Low                  | 1722.5                 | 344500        | 1710.53                           | 342106                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|           |                          |          | Mid                  | 1747.5                 | 349500        | 1644.81                           | 328962                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|           |                          |          | High                 | 1772.5                 | 354500        | 1759.45                           | 351890                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
| 30        | 160                      | Downlink | Low                  | 1820                   | 364000        | 1805.6                            | 361120                          | 0                  | 15   | 4520                          | 361690    | 10                                     | 1                                      | 2 (4)                                | 5   |
|           |                          |          | Mid                  | 1842.5                 | 368500        | 1809.74                           | 361948                          | 102                |      | 4574                          | 366010    | 10                                     | 0                                      | 0 (0)                                | 102 |
|           |                          |          | High                 | 1865                   | 373000        | 1759.88                           | 351976                          | 504                |      | 4631                          | 370570    | 6                                      | 0                                      | 1 (2)                                | 506 |

|  |     |          |      |        |        |         |        |     |    |      |        |   |   |       |     |   |   |  |  |  |
|--|-----|----------|------|--------|--------|---------|--------|-----|----|------|--------|---|---|-------|-----|---|---|--|--|--|
|  |     | Uplink   | Low  | 1725   | 345000 | 1710.6  | 342120 | 0   |    | -    | -      | - | - | -     | -   | - | - |  |  |  |
|  |     |          | Mid  | 1747.5 | 349500 | 1642.38 | 328476 | 504 |    | -    | -      | - | - | -     | -   | - | - |  |  |  |
|  |     |          | High | 1770   | 354000 | 1754.52 | 350904 | 6   |    | -    | -      | - | - | -     | -   | - | - |  |  |  |
| 40   | 216 | Downlink | Low  | 1825   | 365000 | 1805.56 | 361112 | 0   | 15 | 4519 | 361490 | 6 | 0 | 0 (0) | 0   |   |   |  |  |  |
|  |     |          | Mid  | 1842.5 | 368500 | 1804.7  | 360940 | 102 |    | 4562 | 365050 | 2 | 0 | 1 (2) | 104 |   |   |  |  |  |
|  |     |          | High | 1862.5 | 372500 | 1752.34 | 350468 | 504 |    | 4615 | 369170 | 6 | 1 | 2 (4) | 509 |   |   |  |  |  |
|  |     | Uplink   | Low  | 1730   | 346000 | 1710.56 | 342112 | 0   |    | -    | -      | - | - | -     | -   |   |   |  |  |  |
|  |     |          | Mid  | 1747.5 | 349500 | 1637.34 | 327468 | 504 |    | -    | -      | - | - | -     | -   |   |   |  |  |  |
|  |     |          | High | 1767.5 | 353500 | 1746.98 | 349396 | 6   |    | -    | -      | - | - | -     | -   |   |   |  |  |  |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |     |          |      |        |        |         |        |     |    |      |        |   |   |       |     |   |   |  |  |  |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.  |     |          |      |        |        |         |        |     |    |      |        |   |   |       |     |   |   |  |  |  |

Table 4.3.1.1.3-2: Test frequencies for NR operating band n3 and SCS 30 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 Index [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetTo PointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|
| 10        | 24                       | Downlink | Low  | 1810                 | 362000                 | 1805.68       | 361136                            | 0                               | 15                 | 4525 | 361970                        | 14        | 0  | 1 (6)                                  | 12                                   |
|           |                          |          | Mid  | 1842.5               | 368500                 | 1801.46       | 360292                            | 102                             |                    | 4604 | 368410                        | 18        | 0  | 0 (5)                                  | 214                                  |
|           |                          |          | High | 1875                 | 375000                 | 1689.24       | 337848                            | 504                             |                    | 4686 | 374910                        | 18        | 0  | 0 (5)                                  | 1018                                 |
|           |                          | Uplink   | Low  | 1715                 | 343000                 | 1710.68       | 342136                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | Mid  | 1747.5               | 349500                 | 1561.74       | 312348                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | High | 1780                 | 356000                 | 1773.52       | 354704                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                    |
|           | 15                       | Downlink | Low  | 1812.5               | 362500                 | 1805.66       | 361132                            | 0                               | 15                 | 4523 | 361930                        | 2         | 0  | 1 (6)                                  | 12                                   |
|           |                          |          | Mid  | 1842.5               | 368500                 | 1798.94       | 359788                            | 102                             |                    | 4598 | 367930                        | 2         | 0  | 1 (6)                                  | 216                                  |
|           |                          |          | High | 1872.5               | 374500                 | 1684.22       | 336844                            | 504                             |                    | 4673 | 373930                        | 2         | 0  | 1 (6)                                  | 1020                                 |
|           |                          | Uplink   | Low  | 1717.5               | 343500                 | 1710.66       | 342132                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | Mid  | 1747.5               | 349500                 | 1559.22       | 311844                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | High | 1777.5               | 355500                 | 1768.5        | 353700                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                    |
| 20        | 51                       | Downlink | Low  | 1815                 | 363000                 | 1805.82       | 361164                            | 0                               | 15                 | 4524 | 361950                        | 22        | 0  | 0 (5)                                  | 10                                   |
|           |                          |          | Mid  | 1842.5               | 368500                 | 1796.6        | 359320                            | 102                             |                    | 4592 | 367450                        | 22        | 0  | 0 (5)                                  | 214                                  |
|           |                          |          | High | 1870                 | 374000                 | 1679.38       | 335876                            | 504                             |                    | 4663 | 373010                        | 18        | 0  | 1 (6)                                  | 1020                                 |
|           |                          | Uplink   | Low  | 1720                 | 344000                 | 1710.82       | 342164                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | Mid  | 1747.5               | 349500                 | 1556.88       | 311376                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | High | 1775                 | 355000                 | 1763.66       | 352732                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                    |
| 25        | 65                       | Downlink | Low  | 1817.5               | 363500                 | 1805.8        | 361160                            | 0                               | 15                 | 4525 | 361970                        | 6         | 0  | 1 (6)                                  | 12                                   |
|           |                          |          | Mid  | 1842.5               | 368500                 | 1794.08       | 358816                            | 102                             |                    | 4586 | 366970                        | 6         | 0  | 1 (6)                                  | 216                                  |
|           |                          |          | High | 1867.5               | 373500                 | 1674.36       | 334872                            | 504                             |                    | 4650 | 372030                        | 2         | 0  | 2 (7)                                  | 1022                                 |
|           |                          | Uplink   | Low  | 1722.5               | 344500                 | 1710.8        | 342160                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | Mid  | 1747.5               | 349500                 | 1554.36       | 310872                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | High | 1772.5               | 354500                 | 1758.64       | 351728                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                    |
| 30        | 78                       | Downlink | Low  | 1820                 | 364000                 | 1805.96       | 361192                            | 0                               | 15                 | 4523 | 361930                        | 6         | 0  | 0 (5)                                  | 10                                   |
|           |                          |          | Mid  | 1842.5               | 368500                 | 1791.74       | 358348                            | 102                             |                    | 4580 | 366490                        | 2         | 0  | 1 (6)                                  | 216                                  |
|           |                          |          | High | 1865                 | 373000                 | 1669.52       | 333904                            | 504                             |                    | 4637 | 371050                        | 22        | 0  | 1 (6)                                  | 1020                                 |
|           |                          | Uplink   | Low  | 1725                 | 345000                 | 1710.96       | 342192                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | Mid  | 1747.5               | 349500                 | 1552.02       | 310404                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | High | 1770                 | 354000                 | 1753.8        | 350760                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                    |
| 40        | 106                      | Downlink | Low  | 1825                 | 365000                 | 1805.92       | 361184                            | 0                               | 15                 | 4525 | 361970                        | 22        | 0  | 0 (5)                                  | 10                                   |
|           |                          |          | Mid  | 1842.5               | 368500                 | 1786.7        | 357340                            | 102                             |                    | 4568 | 365530                        | 18        | 0  | 1 (6)                                  | 216                                  |
|           |                          |          | High | 1862.5               | 372500                 | 1661.98       | 332396                            | 504                             |                    | 4621 | 369650                        | 10        | 0  | 3 (8)                                  | 1024                                 |
|           |                          | Uplink   | Low  | 1730                 | 346000                 | 1710.92       | 342184                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                    |
|           |                          |          | Mid  | 1747.5               | 349500                 | 1546.98       | 000000                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                    |

|  |  |      |        |        |         |        |   |   |   |   |   |   |   |
|--|--|------|--------|--------|---------|--------|---|---|---|---|---|---|---|
|  |  | High | 1767.5 | 353500 | 1746.26 | 349252 | 6 | - | - | - | - | - | - |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |  |      |        |        |         |        |   |   |   |   |   |   |   |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta f_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.  |  |      |        |        |         |        |   |   |   |   |   |   |   |

Table 4.3.1.1.1.3-3: Test frequencies for NR operating band n3 and SCS 60 kHz without CORESET#0

| CBW [MHz] | carrierBand width [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|-----------|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|-------------------------|--------------------|------|-------------------------------|
| 10        | 11                       | Downlink | Low  | 1810                 | 362000                 | 1806.04       | 361208                            | 0                       | 15                 | -    | 361568                        |
|           |                          |          | Mid  | 1842.5               | 368500                 | 1765.1        | 353020                            | 102                     |                    | -    | 368068                        |
|           |                          |          | High | 1875                 | 375000                 | 1508.16       | 301632                            | 504                     |                    | -    | 374568                        |
|           |                          | Uplink   | Low  | 1715                 | 343000                 | 1711.04       | 342208                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1747.5               | 349500                 | 1380.66       | 276132                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 1780                 | 356000                 | 1771.72       | 354344                            | 6                       |                    | -    | -                             |
| 15        | 18                       | Downlink | Low  | 1812.5               | 362500                 | 1806.02       | 361204                            | 0                       | 15                 | -    | 361564                        |
|           |                          |          | Mid  | 1842.5               | 368500                 | 1762.58       | 352516                            | 102                     |                    | -    | 367564                        |
|           |                          |          | High | 1872.5               | 374500                 | 1503.14       | 300628                            | 504                     |                    | -    | 373564                        |
|           |                          | Uplink   | Low  | 1717.5               | 343500                 | 1711.02       | 342204                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1747.5               | 349500                 | 1378.14       | 275628                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 1777.5               | 355500                 | 1766.7        | 353340                            | 6                       |                    | -    | -                             |
| 20        | 24                       | Downlink | Low  | 1815                 | 363000                 | 1806.36       | 361272                            | 0                       | 15                 | -    | 361632                        |
|           |                          |          | Mid  | 1842.5               | 368500                 | 1760.42       | 352084                            | 102                     |                    | -    | 367132                        |
|           |                          |          | High | 1870                 | 374000                 | 1498.48       | 299696                            | 504                     |                    | -    | 372632                        |
|           |                          | Uplink   | Low  | 1720                 | 344000                 | 1711.36       | 342272                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1747.5               | 349500                 | 1375.98       | 275196                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 1775                 | 355000                 | 1762.04       | 352408                            | 6                       |                    | -    | -                             |
| 25        | 31                       | Downlink | Low  | 1817.5               | 363500                 | 1806.34       | 361268                            | 0                       | 15                 | -    | 361628                        |
|           |                          |          | Mid  | 1842.5               | 368500                 | 1757.9        | 351580                            | 102                     |                    | -    | 366628                        |
|           |                          |          | High | 1867.5               | 373500                 | 1493.46       | 298692                            | 504                     |                    | -    | 371628                        |
|           |                          | Uplink   | Low  | 1722.5               | 344500                 | 1711.34       | 342268                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1747.5               | 349500                 | 1373.46       | 274692                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 1772.5               | 354500                 | 1757.02       | 351404                            | 6                       |                    | -    | -                             |
| 30        | 38                       | Downlink | Low  | 1820                 | 364000                 | 1806.32       | 361264                            | 0                       | 15                 | -    | 361624                        |
|           |                          |          | Mid  | 1842.5               | 368500                 | 1755.38       | 351076                            | 102                     |                    | -    | 366124                        |
|           |                          |          | High | 1865                 | 373000                 | 1488.44       | 297688                            | 504                     |                    | -    | 370624                        |
|           |                          | Uplink   | Low  | 1725                 | 345000                 | 1711.32       | 342264                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1747.5               | 349500                 | 1370.94       | 274188                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 1770                 | 354000                 | 1752          | 350400                            | 6                       |                    | -    | -                             |
| 40        | 51                       | Downlink | Low  | 1825                 | 365000                 | 1806.64       | 361328                            | 0                       | 15                 | -    | 361688                        |
|           |                          |          | Mid  | 1842.5               | 368500                 | 1750.7        | 350140                            | 102                     |                    | -    | 365188                        |
|           |                          |          | High | 1862.5               | 372500                 | 1481.26       | 296252                            | 504                     |                    | -    | 369188                        |
|           |                          | Uplink   | Low  | 1730                 | 346000                 | 1711.64       | 342328                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1747.5               | 349500                 | 1366.26       | 273252                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 1767.5               | 353500                 | 1744.82       | 348964                            | 6                       |                    | -    | -                             |

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ ,  $controlResourceSetZero=0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).

## 4.3.1.1.4 FFS

## 4.3.1.1.5 Reference test frequencies for NR operating band n5

Table 4.3.1.1.5-1: Test frequencies for NR operating band n5 and SCS 15 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] | CORESET#0 Index (Offset [RBs]) Note 2 | offsetToPointA (SIB1) [PRBs] Note 1 |     |  |  |
|---|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--------------------------------|---------------------------------------|-------------------------------------|-----|--|--|
| 5   | 25                       | Downlink | Low                  | 871.5                  | 174300        | 869.25                            | 173850                          | 0                  | 15   | 2178                          | 174270    | 8                              | 1                                     | 0 (0)                               | 1   |  |  |
|   |                          |          | Mid                  | 881.5                  | 176300        | 860.89                            | 172178                          | 102                |      | 2203                          | 176210    | 0                              | 0                                     | 0 (0)                               | 102 |  |  |
|   |                          |          | High                 | 891.5                  | 178300        | 798.53                            | 159706                          | 504                |      | 2228                          | 178330    | 4                              | 1                                     | 1 (2)                               | 507 |  |  |
|   |                          | Uplink   | Low                  | 826.5                  | 165300        | 824.25                            | 164850                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | Mid                  | 836.5                  | 167300        | 743.53                            | 148706                          | 504                |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | High                 | 846.5                  | 169300        | 843.17                            | 168634                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          | Downlink | Low                  | 874                    | 174800        | 869.32                            | 173864                          | 0                  | 15   | 2179                          | 174290    | 10                             | 1                                     | 0 (0)                               | 1   |  |  |
|   |                          |          | Mid                  | 881.5                  | 176300        | 858.46                            | 171692                          | 102                |      | 2197                          | 175730    | 2                              | 0                                     | 0 (0)                               | 102 |  |  |
|   |                          |          | High                 | 889                    | 177800        | 793.6                             | 158720                          | 504                |      | 2218                          | 177410    | 2                              | 1                                     | 2 (4)                               | 509 |  |  |
|   |                          | Uplink   | Low                  | 829                    | 165800        | 824.32                            | 164864                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | Mid                  | 836.5                  | 167300        | 741.1                             | 148220                          | 504                |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | High                 | 844                    | 168800        | 838.24                            | 167648                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          | Downlink | Low                  | 876.5                  | 175300        | 869.39                            | 173878                          | 0                  | 15   | 2177                          | 174250    | 4                              | 0                                     | 0 (0)                               | 0   |  |  |
|   |                          |          | Mid                  | 881.5                  | 176300        | 856.03                            | 171206                          | 102                |      | 2191                          | 175250    | 4                              | 0                                     | 0 (0)                               | 102 |  |  |
|   |                          |          | High                 | 886.5                  | 177300        | 788.67                            | 157734                          | 504                |      | 2205                          | 176430    | 4                              | 1                                     | 2 (4)                               | 509 |  |  |
|   |                          | Uplink   | Low                  | 831.5                  | 166300        | 824.39                            | 164878                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | Mid                  | 836.5                  | 167300        | 738.67                            | 147734                          | 504                |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | High                 | 841.5                  | 168300        | 833.31                            | 166662                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          | Downlink | Low                  | 879                    | 175800        | 869.46                            | 173892                          | 0                  | 15   | 2178                          | 174270    | 6                              | 0                                     | 0 (0)                               | 0   |  |  |
|   |                          |          | Mid                  | 881.5                  | 176300        | 853.6                             | 170720                          | 102                |      | 2185                          | 174770    | 6                              | 0                                     | 0 (0)                               | 102 |  |  |
|   |                          |          | High                 | 884                    | 176800        | 783.74                            | 156748                          | 504                |      | 2192                          | 175450    | 6                              | 1                                     | 2 (4)                               | 509 |  |  |
|   |                          | Uplink   | Low                  | 834                    | 166800        | 824.46                            | 164892                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | Mid                  | 836.5                  | 167300        | 736.24                            | 147248                          | 504                |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | High                 | 839                    | 167800        | 828.38                            | 165676                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                |                                       |                                     |     |  |  |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                |                                       |                                     |     |  |  |

Table 4.3.1.1.5-2: Test frequencies for NR operating band n5 and SCS 30 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 2 | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|
| 10        | 24                       | Downlink | Low  | 874                  | 174800                 | 869.68        | 173936                            | 0                               | 30                 | 2185 | 174770                        | 14        | 0                                     | 1 (1)                                 | 2                                   |
|           |                          |          | Mid  | 881.5                | 176300                 | 840.46        | 168092                            | 102                             |                    | 2203 | 176210                        | 18        | 0                                     | 0 (0)                                 | 204                                 |
|           |                          |          | High | 889                  | 177800                 | 703.24        | 140648                            | 504                             |                    | 2224 | 177890                        | 6         | 0                                     | 3 (3)                                 | 1014                                |
|           | Uplink                   | Uplink   | Low  | 829                  | 165800                 | 824.68        | 164936                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|           |                          |          | Mid  | 836.5                | 167300                 | 650.74        | 130148                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|           |                          |          | High | 844                  | 168800                 | 837.52        | 167504                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|           | 38                       | Downlink | Low  | 876.5                | 175300                 | 869.66        | 173932                            | 0                               | 30                 | 2183 | 174730                        | 2         | 0                                     | 1 (1)                                 | 2                                   |
|           |                          |          | Mid  | 881.5                | 176300                 | 837.94        | 167588                            | 102                             |                    | 2197 | 175730                        | 2         | 0                                     | 1 (1)                                 | 206                                 |
|           |                          |          | High | 886.5                | 177300                 | 698.22        | 139644                            | 504                             |                    | 2208 | 176670                        | 6         | 0                                     | 0 (0)                                 | 1008                                |
|           |                          | Uplink   | Low  | 831.5                | 166300                 | 824.66        | 164932                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|           |                          |          | Mid  | 836.5                | 167300                 | 648.22        | 129644                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|           |                          |          | High | 841.5                | 168300                 | 832.5         | 166500                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|           | 51                       | Downlink | Low  | 879                  | 175800                 | 869.82        | 173964                            | 0                               | 30                 | 2184 | 174750                        | 22        | 0                                     | 0 (0)                                 | 0                                   |
|           |                          |          | Mid  | 881.5                | 176300                 | 835.6         | 167120                            | 102                             |                    | 2191 | 175250                        | 22        | 0                                     | 0 (0)                                 | 204                                 |
|           |                          |          | High | 884                  | 176800                 | 693.38        | 138676                            | 504                             |                    | 2195 | 175690                        | 2         | 0                                     | 0 (0)                                 | 1008                                |
|           |                          | Uplink   | Low  | 834                  | 166800                 | 824.82        | 164964                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|           |                          |          | Mid  | 836.5                | 167300                 | 645.88        | 129176                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|           |                          |          | High | 839                  | 167800                 | 827.66        | 165532                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |

"Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

## 4.3.1.1.6 FFS

## 4.3.1.1.7 Reference test frequencies for NR operating band n7

Table 4.3.1.1.7-1: Test frequencies for NR operating band n7 and SCS 15 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] | CORESET#0 Index (Offset [RBs]) Note 2 | offsetToPointA (SIB1) [PRBs] Note 1 |  |  |  |
|---|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--------------------------------|---------------------------------------|-------------------------------------|--|--|--|
| 5   | 25                       | Downlink | Low                  | 2622.5                 | 524500        | 2620.25                           | 524050                          | 0                  | 15   | 6554                          | 524410    | 0                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          |          | Mid                  | 2655                   | 531000        | 2634.39                           | 526878                          | 102                |      | 6636                          | 530910    | 0                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          |          | High                 | 2687.5                 | 537500        | 2594.53                           | 518906                          | 504                |      | 6718                          | 537410    | 0                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          | Uplink   | Low                  | 2502.5                 | 500500        | 2500.25                           | 500050                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | Mid                  | 2535                   | 507000        | 2442.03                           | 488406                          | 504                |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | High                 | 2567.5                 | 513500        | 2564.17                           | 512834                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          | Downlink | Low                  | 2625                   | 525000        | 2620.32                           | 524064                          | 0                  | 15   | 6555                          | 524430    | 2                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          |          | Mid                  | 2655                   | 531000        | 2631.96                           | 526392                          | 102                |      | 6630                          | 530430    | 2                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          |          | High                 | 2685                   | 537000        | 2589.6                            | 517920                          | 504                |      | 6705                          | 536430    | 2                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          | Uplink   | Low                  | 2505                   | 501000        | 2500.32                           | 500064                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | Mid                  | 2535                   | 507000        | 2439.6                            | 487920                          | 504                |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | High                 | 2565                   | 513000        | 2559.24                           | 511848                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          | Downlink | Low                  | 2627.5                 | 525500        | 2620.39                           | 524078                          | 0                  | 15   | 6556                          | 524450    | 4                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          |          | Mid                  | 2655                   | 531000        | 2629.53                           | 525906                          | 102                |      | 6624                          | 529950    | 4                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          |          | High                 | 2682.5                 | 536500        | 2584.67                           | 516934                          | 504                |      | 6692                          | 535450    | 4                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          | Uplink   | Low                  | 2507.5                 | 501500        | 2500.39                           | 500078                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | Mid                  | 2535                   | 507000        | 2437.17                           | 487434                          | 504                |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | High                 | 2562.5                 | 512500        | 2554.31                           | 510862                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          | Downlink | Low                  | 2630                   | 526000        | 2620.46                           | 524092                          | 0                  | 15   | 6557                          | 524650    | 6                              | 1                                     | 2 (4)                               |  |  |  |
|   |                          |          | Mid                  | 2655                   | 531000        | 2627.1                            | 525420                          | 102                |      | 6618                          | 529470    | 6                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          |          | High                 | 2680                   | 536000        | 2579.74                           | 515948                          | 504                |      | 6682                          | 534530    | 2                              | 0                                     | 1 (2)                               |  |  |  |
|   |                          | Uplink   | Low                  | 2510                   | 502000        | 2500.46                           | 500092                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | Mid                  | 2535                   | 507000        | 2434.74                           | 486948                          | 504                |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | High                 | 2560                   | 512000        | 2549.38                           | 509876                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                |                                       |                                     |  |  |  |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                |                                       |                                     |  |  |  |

Table 4.3.1.1.7-2: Test frequencies for NR operating band n7 and SCS 30 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 2 | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|
| 10   | 24                       | Downlink | Low  | 2625                 | 525000                 | 2620.68       | 524136                            | 0                               | 15                 | 6561 | 524910                        | 18        | 0                                     | 0 (5)                                 | 10                                  |
|  |                          |          | Mid  | 2655                 | 531000                 | 2613.96       | 522792                            | 102                             |                    | 6636 | 530910                        | 18        | 0                                     | 0 (5)                                 | 214                                 |
|  |                          |          | High | 2685                 | 537000                 | 2499.24       | 499848                            | 504                             |                    | 6711 | 536910                        | 18        | 0                                     | 0 (5)                                 | 1018                                |
|  | Uplink                   | Uplink   | Low  | 2505                 | 501000                 | 2500.68       | 500136                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 2535                 | 507000                 | 2349.24       | 469848                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 2565                 | 513000                 | 2558.52       | 511704                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  | 38                       | Downlink | Low  | 2627.5               | 525500                 | 2620.66       | 524132                            | 0                               | 15                 | 6562 | 524930                        | 2         | 0                                     | 1 (6)                                 | 12                                  |
|  |                          |          | Mid  | 2655                 | 531000                 | 2611.44       | 522288                            | 102                             |                    | 6630 | 530430                        | 2         | 0                                     | 1 (6)                                 | 216                                 |
|  |                          |          | High | 2682.5               | 536500                 | 2494.22       | 498844                            | 504                             |                    | 6698 | 535930                        | 2         | 0                                     | 1 (6)                                 | 1020                                |
|  |                          | Uplink   | Low  | 2507.5               | 501500                 | 2500.66       | 500132                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 2535                 | 507000                 | 2346.72       | 469344                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 2562.5               | 512500                 | 2553.5        | 510700                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  | 51                       | Downlink | Low  | 2630                 | 526000                 | 2620.82       | 524164                            | 0                               | 15                 | 6560 | 524890                        | 2         | 0                                     | 0 (5)                                 | 10                                  |
|  |                          |          | Mid  | 2655                 | 531000                 | 2609.1        | 521820                            | 102                             |                    | 6624 | 529950                        | 22        | 0                                     | 0 (5)                                 | 214                                 |
|  |                          |          | High | 2680                 | 536000                 | 2489.38       | 497876                            | 504                             |                    | 6688 | 535010                        | 18        | 0                                     | 1 (6)                                 | 1020                                |
|  |                          | Uplink   | Low  | 2510                 | 502000                 | 2500.82       | 500164                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 2535                 | 507000                 | 2344.38       | 468876                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 2560                 | 512000                 | 2548.66       | 509732                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |          |      |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |

Table 4.3.1.1.7-3: Test frequencies for NR operating band n7 and SCS 60 kHz without CORESET#0

| CBW [MHz] | <i>carrierBand width</i> [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | <i>absolute FrequencyPoint A</i> [ARFCN] | <i>offsetTo Carrier</i> [PRBs] | SS block SCS [kHz] | GSCN | <i>absolute FrequencySSB</i> [ARFCN] |
|-----------|---------------------------------|----------|------|----------------------|------------------------|---------------|--|--------------------------------|--------------------|------|--------------------------------------|
| 10        | 11                              | Downlink | Low  | 2625                 | 525000                 | 2621.04       | 524208                                   | 0                              | 15                 | -    | 524568                               |
|           |                                 |          | Mid  | 2655                 | 531000                 | 2577.6        | 515520                                   | 102                            |                    | -    | 530568                               |
|           |                                 |          | High | 2685                 | 537000                 | 2318.16       | 463632                                   | 504                            |                    | -    | 536568                               |
|           |                                 | Uplink   | Low  | 2505                 | 501000                 | 2501.04       | 500208                                   | 0                              | -                  | -    | -                                    |
|           |                                 |          | Mid  | 2535                 | 507000                 | 2168.16       | 433632                                   | 504                            |                    | -    | -                                    |
|           |                                 |          | High | 2565                 | 513000                 | 2556.72       | 511344                                   | 6                              |                    | -    | -                                    |
| 15        | 18                              | Downlink | Low  | 2627.5               | 525500                 | 2621.02       | 524204                                   | 0                              | 15                 | -    | 524564                               |
|           |                                 |          | Mid  | 2655                 | 531000                 | 2575.08       | 515016                                   | 102                            |                    | -    | 530064                               |
|           |                                 |          | High | 2682.5               | 536500                 | 2313.14       | 462628                                   | 504                            |                    | -    | 535564                               |
|           |                                 | Uplink   | Low  | 2507.5               | 501500                 | 2501.02       | 500204                                   | 0                              | -                  | -    | -                                    |
|           |                                 |          | Mid  | 2535                 | 507000                 | 2165.64       | 433128                                   | 504                            |                    | -    | -                                    |
|           |                                 |          | High | 2562.5               | 512500                 | 2551.7        | 510340                                   | 6                              |                    | -    | -                                    |
| 20        | 24                              | Downlink | Low  | 2630                 | 526000                 | 2621.36       | 524272                                   | 0                              | 15                 | -    | 524632                               |
|           |                                 |          | Mid  | 2655                 | 531000                 | 2572.92       | 514584                                   | 102                            |                    | -    | 529632                               |
|           |                                 |          | High | 2680                 | 536000                 | 2308.48       | 461696                                   | 504                            |                    | -    | 534632                               |
|           |                                 | Uplink   | Low  | 2510                 | 502000                 | 2501.36       | 500272                                   | 0                              | -                  | -    | -                                    |
|           |                                 |          | Mid  | 2535                 | 507000                 | 2163.48       | 432696                                   | 504                            |                    | -    | -                                    |
|           |                                 |          | High | 2560                 | 512000                 | 2547.04       | 509408                                   | 6                              |                    | -    | -                                    |

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ ,  $controlResourceSetZero = 0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).

## 4.3.1.1.1.8

Reference test frequencies for NR operating band n8

Table 4.3.1.1.8-1: Test frequencies for NR operating band n8 and SCS 15 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) Note 2 | Offset To PointA (SIB1) [PRBs] Note 1 |     |  |  |
|---|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------|--|---------------------------------------|-----|--|--|
| 5   | 25                       | Downlink | Low                  | 927.5                  | 185500        | 925.25                            | 185050                          | 0                  | 15   | 2318                          | 185530    | 4                               | 1                                      | 1 (2)                                 | 3   |  |  |
|   |                          |          | Mid                  | 942.5                  | 188500        | 921.89                            | 184378                          | 102                |      | 2354                          | 188410    | 0                               | 0                                      | 0 (0)                                 | 102 |  |  |
|   |                          |          | High                 | 957.5                  | 191500        | 864.53                            | 172906                          | 504                |      | 2393                          | 191530    | 4                               | 1                                      | 1 (2)                                 | 507 |  |  |
|   |                          | Uplink   | Low                  | 882.5                  | 176500        | 880.25                            | 176050                          | 0                  | -    | -                             | -         | -                               | -                                      | -                                     | -   |  |  |
|   |                          |          | Mid                  | 897.5                  | 179500        | 804.53                            | 160906                          | 504                |      | -                             | -         | -                               | -                                      | -                                     | -   |  |  |
|   |                          |          | High                 | 912.5                  | 182500        | 909.17                            | 181834                          | 6                  |      | -                             | -         | -                               | -                                      | -                                     | -   |  |  |
|   |                          | Downlink | Low                  | 930                    | 186000        | 925.32                            | 185064                          | 0                  | 15   | 2319                          | 185550    | 6                               | 1                                      | 1 (2)                                 | 3   |  |  |
|   |                          |          | Mid                  | 942.5                  | 188500        | 919.46                            | 183892                          | 102                |      | 2348                          | 187930    | 2                               | 0                                      | 0 (0)                                 | 102 |  |  |
|   |                          |          | High                 | 955                    | 191000        | 859.6                             | 171920                          | 504                |      | 2383                          | 190610    | 2                               | 1                                      | 2 (4)                                 | 509 |  |  |
|   |                          | Uplink   | Low                  | 885                    | 177000        | 880.32                            | 176064                          | 0                  | -    | -                             | -         | -                               | -                                      | -                                     | -   |  |  |
|   |                          |          | Mid                  | 897.5                  | 179500        | 802.1                             | 160420                          | 504                |      | -                             | -         | -                               | -                                      | -                                     | -   |  |  |
|   |                          |          | High                 | 910                    | 182000        | 904.24                            | 180848                          | 6                  |      | -                             | -         | -                               | -                                      | -                                     | -   |  |  |
|   |                          | Downlink | Low                  | 932.5                  | 186500        | 925.39                            | 185078                          | 0                  | 15   | 2320                          | 185570    | 8                               | 1                                      | 1 (2)                                 | 3   |  |  |
|   |                          |          | Mid                  | 942.5                  | 188500        | 917.03                            | 183406                          | 102                |      | 2342                          | 187450    | 4                               | 0                                      | 0 (0)                                 | 102 |  |  |
|   |                          |          | High                 | 952.5                  | 190500        | 854.67                            | 170934                          | 504                |      | 2370                          | 189630    | 4                               | 1                                      | 2 (4)                                 | 509 |  |  |
|   |                          | Uplink   | Low                  | 887.5                  | 177500        | 880.39                            | 176078                          | 0                  | -    | -                             | -         | -                               | -                                      | -                                     | -   |  |  |
|   |                          |          | Mid                  | 897.5                  | 179500        | 799.67                            | 159934                          | 504                |      | -                             | -         | -                               | -                                      | -                                     | -   |  |  |
|   |                          |          | High                 | 907.5                  | 181500        | 899.31                            | 179862                          | 6                  |      | -                             | -         | -                               | -                                      | -                                     | -   |  |  |
|   |                          | Downlink | Low                  | 935                    | 187000        | 925.46                            | 185092                          | 0                  | 15   | 2318                          | 185530    | 2                               | 0                                      | 1 (2)                                 | 2   |  |  |
|   |                          |          | Mid                  | 942.5                  | 188500        | 914.6                             | 182920                          | 102                |      | 2336                          | 186970    | 6                               | 0                                      | 0 (0)                                 | 102 |  |  |
|   |                          |          | High                 | 950                    | 190000        | 849.74                            | 169948                          | 504                |      | 2357                          | 188650    | 6                               | 1                                      | 2 (4)                                 | 509 |  |  |
|   |                          | Uplink   | Low                  | 890                    | 178000        | 880.46                            | 176092                          | 0                  | -    | -                             | -         | -                               | -                                      | -                                     | -   |  |  |
|   |                          |          | Mid                  | 897.5                  | 179500        | 797.24                            | 159448                          | 504                |      | -                             | -         | -                               | -                                      | -                                     | -   |  |  |
|   |                          |          | High                 | 905                    | 181000        | 894.38                            | 178876                          | 6                  |      | -                             | -         | -                               | -                                      | -                                     | -   |  |  |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                       |     |  |  |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                       |     |  |  |

Table 4.3.1.1.8-2: Test frequencies for NR operating band n8 and SCS 30 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 2 | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|
| 10   | 24                       | Downlink | Low  | 930                  | 186000                 | 925.68        | 185136                            | 0                               | 15                 | 2325 | 186030                        | 10        | 0                                     | 2 (7)                                 | 14                                  |
|  |                          |          | Mid  | 942.5                | 188500                 | 901.46        | 180292                            | 102                             |                    | 2354 | 188410                        | 18        | 0                                     | 0 (5)                                 | 214                                 |
|  |                          |          | High | 955                  | 191000                 | 769.24        | 153848                            | 504                             |                    | 2389 | 191090                        | 6         | 0                                     | 3 (8)                                 | 1024                                |
|  | Uplink                   | Uplink   | Low  | 885                  | 177000                 | 880.68        | 176136                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 897.5                | 179500                 | 711.74        | 142348                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 910                  | 182000                 | 903.52        | 180704                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  | 38                       | Downlink | Low  | 932.5                | 186500                 | 925.66        | 185132                            | 0                               | 15                 | 2326 | 186050                        | 18        | 0                                     | 2 (7)                                 | 14                                  |
|  |                          |          | Mid  | 942.5                | 188500                 | 898.94        | 179788                            | 102                             |                    | 2348 | 187930                        | 2         | 0                                     | 1 (6)                                 | 216                                 |
|  |                          |          | High | 952.5                | 190500                 | 764.22        | 152844                            | 504                             |                    | 2373 | 189870                        | 6         | 0                                     | 0 (5)                                 | 1018                                |
|  |                          | Uplink   | Low  | 887.5                | 177500                 | 880.66        | 176132                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 897.5                | 179500                 | 709.22        | 141844                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 907.5                | 181500                 | 898.5         | 179700                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  | 51                       | Downlink | Low  | 935                  | 187000                 | 925.82        | 185164                            | 0                               | 15                 | 2324 | 186010                        | 18        | 0                                     | 1 (6)                                 | 12                                  |
|  |                          |          | Mid  | 942.5                | 188500                 | 896.6         | 179320                            | 102                             |                    | 2342 | 187450                        | 22        | 0                                     | 0 (5)                                 | 214                                 |
|  |                          |          | High | 950                  | 190000                 | 759.38        | 151876                            | 504                             |                    | 2360 | 188890                        | 2         | 0                                     | 0 (5)                                 | 1018                                |
|  |                          | Uplink   | Low  | 890                  | 178000                 | 880.82        | 176164                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 897.5                | 179500                 | 706.88        | 141376                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 905                  | 181000                 | 893.66        | 178732                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |          |      |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |

4.3.1.1.1.9 to 4.3.1.1.1.11 FFS

4.3.1.1.1.12 Reference test frequencies for NR operating band n12

Table 4.3.1.1.12-1: Test frequencies for NR operating band n12 and SCS 15 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) Note 2 | offsetToPointA (SIB1) [PRBs] Note 1 |     |  |  |
|--|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------|--|-------------------------------------|-----|--|--|
| 5  | 25                       | Downlink | Low                  | 731.5                  | 146300        | 729.25                            | 145850                          | 0                  | 15   | 1828                          | 146210    | 0                               | 0                                      | 0 (0)                               | 0   |  |  |
|  |                          |          | Mid                  | 737.5                  | 147500        | 716.89                            | 143378                          | 102                |      | 1843                          | 147410    | 0                               | 0                                      | 0 (0)                               | 102 |  |  |
|  |                          |          | High                 | 743.5                  | 148700        | 650.53                            | 130106                          | 504                |      | 1858                          | 148610    | 0                               | 0                                      | 0 (0)                               | 504 |  |  |
|  |                          | Uplink   | Low                  | 701.5                  | 140300        | 699.25                            | 139850                          | 0                  | -    | -                             | -         | -                               | -                                      | -                                   | -   |  |  |
|  |                          |          | Mid                  | 707.5                  | 141500        | 614.53                            | 122906                          | 504                |      | -                             | -         | -                               | -                                      | -                                   | -   |  |  |
|  |                          |          | High                 | 713.5                  | 142700        | 710.17                            | 142034                          | 6                  |      | -                             | -         | -                               | -                                      | -                                   | -   |  |  |
|  |                          | Downlink | Low                  | 734                    | 146800        | 729.32                            | 145864                          | 0                  | 15   | 1829                          | 146410    | 2                               | 1                                      | 2 (4)                               | 5   |  |  |
|  |                          |          | Mid                  | 737.5                  | 147500        | 714.46                            | 142892                          | 102                |      | 1837                          | 146930    | 2                               | 0                                      | 0 (0)                               | 102 |  |  |
|  |                          |          | High                 | 741                    | 148200        | 645.6                             | 129120                          | 504                |      | 1845                          | 147630    | 2                               | 0                                      | 0 (0)                               | 504 |  |  |
|  |                          | Uplink   | Low                  | 704                    | 140800        | 699.32                            | 139864                          | 0                  | -    | -                             | -         | -                               | -                                      | -                                   | -   |  |  |
|  |                          |          | Mid                  | 707.5                  | 141500        | 612.1                             | 122420                          | 504                |      | -                             | -         | -                               | -                                      | -                                   | -   |  |  |
|  |                          |          | High                 | 711                    | 142200        | 705.24                            | 141048                          | 6                  |      | -                             | -         | -                               | -                                      | -                                   | -   |  |  |
|  |                          | Downlink | Low                  | 736.5                  | 147300        | 729.39                            | 145878                          | 0                  | 15   | 1830                          | 146430    | 4                               | 1                                      | 2 (4)                               | 5   |  |  |
|  |                          |          | Mid                  | 737.5                  | 147500        | 712.03                            | 142406                          | 102                |      | 1831                          | 146450    | 4                               | 0                                      | 0 (0)                               | 102 |  |  |
|  |                          |          | High                 | 738.5                  | 147700        | 640.67                            | 128134                          | 504                |      | 1832                          | 146650    | 4                               | 0                                      | 0 (0)                               | 504 |  |  |
|  |                          | Uplink   | Low                  | 706.5                  | 141300        | 699.39                            | 139878                          | 0                  | -    | -                             | -         | -                               | -                                      | -                                   | -   |  |  |
|  |                          |          | Mid                  | 707.5                  | 141500        | 609.67                            | 121934                          | 504                |      | -                             | -         | -                               | -                                      | -                                   | -   |  |  |
|  |                          |          | High                 | 708.5                  | 141700        | 700.31                            | 140062                          | 6                  |      | -                             | -         | -                               | -                                      | -                                   | -   |  |  |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                     |     |  |  |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.  |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                     |     |  |  |

Table 4.3.1.1.12-2: Test frequencies for NR operating band n12 and SCS 30 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 2 | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|
| 10        | 24                       | Downlink | Low  | 734                  | 146800                 | 729.68        | 145936                            | 0                               | 15                 | 1835 | 146890                        | 6         | 0                                     | 3 (8)                                 | 16                                  |
|           |                          |          | Mid  | 737.5                | 147500                 | 696.46        | 139292                            | 102                             |                    | 1843 | 147410                        | 18        | 0                                     | 0 (5)                                 | 214                                 |
|           |                          |          | High | 741                  | 148200                 | 555.24        | 111048                            | 504                             |                    | 1851 | 148110                        | 18        | 0                                     | 0 (5)                                 | 1018                                |
|           | Uplink                   | Uplink   | Low  | 704                  | 140800                 | 699.68        | 139936                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|           |                          |          | Mid  | 707.5                | 141500                 | 521.74        | 104348                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|           |                          |          | High | 711                  | 142200                 | 704.52        | 140904                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|           | 38                       | Downlink | Low  | 736.5                | 147300                 | 729.66        | 145932                            | 0                               | 15                 | 1833 | 146670                        | 6         | 0                                     | 0 (5)                                 | 10                                  |
|           |                          |          | Mid  | 737.5                | 147500                 | 693.94        | 138788                            | 102                             |                    | 1837 | 146930                        | 2         | 0                                     | 1 (6)                                 | 216                                 |
|           |                          |          | High | 738.5                | 147700                 | 550.22        | 110044                            | 504                             |                    | 1838 | 147130                        | 2         | 0                                     | 1 (6)                                 | 1020                                |
|           |                          | Uplink   | Low  | 706.5                | 141300                 | 699.66        | 139932                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|           |                          |          | Mid  | 707.5                | 141500                 | 519.22        | 103844                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|           |                          |          | High | 708.5                | 141700                 | 699.5         | 139900                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

4.3.1.1.1.13

4.3.1.1.1.14 Reference test frequencies for NR operating band n14

**Table 4.3.1.1.14-1: Test frequencies for NR operating band n14 and SCS 15 kHz**

| <b>CBW<br/>[MHz]</b> | <b>carrier<br/>Bandw<br/>idth<br/>[PRBs]</b> | <b>Range</b> |      | <b>Carrier<br/>centre<br/>[MHz]</b> | <b>Carrier<br/>centre<br/>[ARFCN]</b> | <b>point A<br/>[MHz]</b> | <b>absolute<br/>Frequen<br/>cyPoint<br/>A<br/>[ARFCN]</b> | <b>offsetTo<br/>Carrier<br/>[Carrier<br/>PRBs]</b> | <b>SS<br/>block<br/>SCS<br/>[kHz]</b> | <b>GSCN</b> | <b>absolute<br/>Frequen<br/>cySSB<br/>[ARFCN]</b> | <b><math>k_{SSB}</math></b> | <b>Offset<br/>Carrier<br/>CORE<br/>SET#0<br/>[RBs]<br/>Note 2</b> | <b>CORE<br/>SET#0<br/>Index<br/>(Offset<br/>[RBs])<br/>Note 1</b> | <b>offsetTo<br/>PointA<br/>(SIB1)<br/>[PRBs]<br/>Note 1</b> |
|----------------------|--|--------------|------|-------------------------------------|---------------------------------------|--------------------------|---|--|---------------------------------------|-------------|---|-----------------------------|---|---|---|
| 5                    | 25   | Downlink     | Low  | 760.5                               | 152100                                | 758.25                   | 151650  | 0  | 15                                    | 1902        | 152190  | 0                           | 1   | 2 (4)   | 5   |
|                      |  |              | Mid  | 763                                 | 152600                                | 742.39                   | 148478  | 102  |                                       | 1909        | 152690  | 0                           | 1   | 2 (4)   | 107   |
|                      |  |              | High | 765.5                               | 153100                                | 672.53                   | 134506  | 504  |                                       | 1913        | 153130  | 4                           | 1   | 1 (2)   | 507   |
|                      |  | Uplink       | Low  | 790.5                               | 158100                                | 788.25                   | 157650  | 0  | -                                     | -           | -   | -                           | -   | -   | -   |
|                      |  |              | Mid  | 793                                 | 158600                                | 700.03                   | 140006  | 504  |                                       | -           | -   | -                           | -   | -   | -   |
|                      |  |              | High | 795.5                               | 159100                                | 792.17                   | 158434  | 6  |                                       | -           | -   | -                           | -   | -   | -   |
|                      |  | Downlink     | Low  | 763                                 | 152600                                | 758.32                   | 151664  | 0  | 15                                    | 1903        | 152210  | 2                           | 1   | 2 (4)   | 5   |
|                      |  |              | Mid  |                                     |                                       |                          |   |  |                                       |             |   |                             |   |   |   |
|                      |  |              | High |                                     |                                       |                          |   |  |                                       |             |   |                             |   |   |   |
| 10                   | 52   | Downlink     | Low  |                                     |                                       |                          |   |  |                                       |             |   |                             |   |   |   |
|                      |  |              | Mid  |                                     |                                       |                          |   |  |                                       |             |   |                             |   |   |   |
|                      |  |              | High |                                     |                                       |                          |   |  |                                       |             |   |                             |   |   |   |
|                      |  | Uplink       | Low  | 793                                 | 158600                                | 788.32                   | 157664  | 0  | -                                     | -           | -   | -                           | -   | -   | -   |
|                      |  |              | Mid  |                                     |                                       |                          |   |  |                                       |             |   |                             |   |   |   |
|                      |  |              | High |                                     |                                       |                          |   |  |                                       |             |   |                             |   |   |   |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcchConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET0Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.1.14-2: Test frequencies for NR operating band n14 and SCS 30 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 2 | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|---|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|
| 10  | 24                       | Downlink | Low  | 763                  | 152600                 | 758.68        | 151736                            | 0                               | 15                 | 1909 | 152690                        | 6         | 0                                     | 3 (8)                                 | 16                                  |
|   |                          |          | Mid  |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |
|   |                          |          | High |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |
|   |                          | Uplink   | Low  | 793                  | 158600                 | 788.68        | 157736                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|   |                          |          | Mid  |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |
|   |                          |          | High |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcchConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET0Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |          |      |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |

## 4.3.1.1.1.15 to 4.3.1.1.1.19 FFS

4.3.1.1.20 Reference test frequencies for NR operating band n20

Table 4.3.1.1.20-1: Test frequencies for NR operating band n20 and SCS 15 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] | CORESET#0 Index (Offset [RBs]) Note 2 | offsetToPointA (SIB1) [PRBs] Note 1 |     |  |  |
|---|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--------------------------------|---------------------------------------|-------------------------------------|-----|--|--|
| 5   | 25                       | Downlink | Low                  | 793.5                  | 158700        | 791.25                            | 158250                          | 0                  | 15   | 1983                          | 158670    | 8                              | 1                                     | 0 (0)                               | 1   |  |  |
|   |                          |          | Mid                  | 806                    | 161200        | 785.39                            | 157078                          | 102                |      | 2015                          | 161290    | 0                              | 1                                     | 2 (4)                               | 107 |  |  |
|   |                          |          | High                 | 818.5                  | 163700        | 725.53                            | 145106                          | 504                |      | 2047                          | 163730    | 4                              | 1                                     | 1 (2)                               | 507 |  |  |
|   |                          | Uplink   | Low                  | 834.5                  | 166900        | 832.25                            | 166450                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | Mid                  | 847                    | 169400        | 754.03                            | 150806                          | 504                |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | High                 | 859.5                  | 171900        | 856.17                            | 171234                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          | Downlink | Low                  | 796                    | 159200        | 791.32                            | 158264                          | 0                  | 15   | 1984                          | 158690    | 10                             | 1                                     | 0 (0)                               | 1   |  |  |
|   |                          |          | Mid                  | 806                    | 161200        | 782.96                            | 156592                          | 102                |      | 2009                          | 160810    | 2                              | 1                                     | 2 (4)                               | 107 |  |  |
|   |                          |          | High                 | 816                    | 163200        | 720.6                             | 144120                          | 504                |      | 2034                          | 162750    | 6                              | 1                                     | 1 (2)                               | 507 |  |  |
|   |                          | Uplink   | Low                  | 837                    | 167400        | 832.32                            | 166464                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | Mid                  | 847                    | 169400        | 751.6                             | 150320                          | 504                |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | High                 | 857                    | 171400        | 851.24                            | 170248                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
| 10  | 52                       | Downlink | Low                  | 798.5                  | 159700        | 791.39                            | 158278                          | 0                  | 15   | 1982                          | 158650    | 4                              | 0                                     | 0 (0)                               | 0   |  |  |
|   |                          |          | Mid                  | 806                    | 161200        | 780.53                            | 156106                          | 102                |      | 2003                          | 160330    | 4                              | 1                                     | 2 (4)                               | 107 |  |  |
|   |                          |          | High                 | 813.5                  | 162700        | 715.67                            | 143134                          | 504                |      | 2021                          | 161770    | 8                              | 1                                     | 1 (2)                               | 507 |  |  |
|   |                          | Uplink   | Low                  | 839.5                  | 167900        | 832.39                            | 166478                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | Mid                  | 847                    | 169400        | 749.17                            | 149834                          | 504                |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | High                 | 854.5                  | 170900        | 846.31                            | 169262                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          | Downlink | Low                  | 801                    | 160200        | 791.46                            | 158292                          | 0                  | 15   | 1983                          | 158670    | 6                              | 0                                     | 0 (0)                               | 0   |  |  |
|   |                          |          | Mid                  | 806                    | 161200        | 778.1                             | 155620                          | 102                |      | 1997                          | 159850    | 6                              | 1                                     | 2 (4)                               | 107 |  |  |
|   |                          |          | High                 | 811                    | 162200        | 710.74                            | 142148                          | 504                |      | 2011                          | 160850    | 6                              | 1                                     | 2 (4)                               | 509 |  |  |
|   |                          | Uplink   | Low                  | 842                    | 168400        | 832.46                            | 166492                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | Mid                  | 847                    | 169400        | 746.74                            | 149348                          | 504                |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | High                 | 852                    | 170400        | 841.38                            | 168276                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                |                                       |                                     |     |  |  |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                |                                       |                                     |     |  |  |

Table 4.3.1.1.1.20-2: Test frequencies for NR operating band n20 and SCS 30 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 2 | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|
| 10   | 24                       | Downlink | Low  | 796                  | 159200                 | 791.68        | 158336                            | 0                               | 15                 | 1990 | 159170                        | 14        | 0                                     | 1 (6)                                 | 12                                  |
|  |                          |          | Mid  | 806                  | 161200                 | 764.96        | 152992                            | 102                             |                    | 2015 | 161290                        | 6         | 0                                     | 3 (8)                                 | 220                                 |
|  |                          |          | High | 816                  | 163200                 | 630.24        | 126048                            | 504                             |                    | 2040 | 163230                        | 10        | 0                                     | 2 (7)                                 | 1022                                |
|  |                          | Uplink   | Low  | 837                  | 167400                 | 832.68        | 166536                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 847                  | 169400                 | 661.24        | 132248                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 857                  | 171400                 | 850.52        | 170104                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
| 15   | 38                       | Downlink | Low  | 798.5                | 159700                 | 791.66        | 158332                            | 0                               | 15                 | 1988 | 159130                        | 2         | 0                                     | 1 (6)                                 | 12                                  |
|  |                          |          | Mid  | 806                  | 161200                 | 762.44        | 152488                            | 102                             |                    | 2006 | 160570                        | 6         | 0                                     | 0 (5)                                 | 214                                 |
|  |                          |          | High | 813.5                | 162700                 | 625.22        | 125044                            | 504                             |                    | 2027 | 162250                        | 18        | 0                                     | 2 (7)                                 | 1022                                |
|  |                          | Uplink   | Low  | 839.5                | 167900                 | 832.66        | 166532                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 847                  | 169400                 | 658.72        | 131744                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 854.5                | 170900                 | 845.5         | 169100                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
| 20   | 51                       | Downlink | Low  | 801                  | 160200                 | 791.82        | 158364                            | 0                               | 15                 | 1989 | 159150                        | 22        | 0                                     | 0 (5)                                 | 10                                  |
|  |                          |          | Mid  | 806                  | 161200                 | 760.1         | 152020                            | 102                             |                    | 2000 | 160090                        | 2         | 0                                     | 0 (5)                                 | 214                                 |
|  |                          |          | High | 811                  | 162200                 | 620.38        | 124076                            | 504                             |                    | 2014 | 161090                        | 2         | 0                                     | 0 (5)                                 | 1018                                |
|  |                          | Uplink   | Low  | 842                  | 168400                 | 832.82        | 166564                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 847                  | 169400                 | 656.38        | 131276                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 852                  | 170400                 | 840.66        | 168132                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |          |      |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |

## 4.3.1.1.1.21 to 4.3.1.1.1.24 FFS

## 4.3.1.1.1.25 Reference test frequencies for NR operating band n25

Table 4.3.1.1.1.25-1: Test frequencies for NR operating band n25 and SCS 15 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] | CORESET#0 Index (Offset [RBs]) Note 2 | offsetToPointA (SIB1) [PRBs] Note 1 |  |  |  |
|---|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--------------------------------|---------------------------------------|-------------------------------------|--|--|--|
| 5   | 25                       | Downlink | Low                  | 1932.5                 | 386500        | 1930.25                           | 386050                          | 0                  | 15   | 4829                          | 386410    | 0                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          |          | Mid                  | 1962.5                 | 392500        | 1941.89                           | 388378                          | 102                |      | 4904                          | 392410    | 0                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          |          | High                 | 1992.5                 | 398500        | 1899.53                           | 379906                          | 504                |      | 4979                          | 398410    | 0                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          | Uplink   | Low                  | 1852.5                 | 370500        | 1850.25                           | 370050                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | Mid                  | 1882.5                 | 376500        | 1789.53                           | 357906                          | 504                |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | High                 | 1912.5                 | 382500        | 1909.17                           | 381834                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   | 10                       | Downlink | Low                  | 1935                   | 387000        | 1930.32                           | 386064                          | 0                  | 15   | 4830                          | 386430    | 2                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          |          | Mid                  | 1962.5                 | 392500        | 1939.46                           | 387892                          | 102                |      | 4898                          | 391930    | 2                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          |          | High                 | 1990                   | 398000        | 1894.6                            | 378920                          | 504                |      | 4969                          | 397490    | 10                             | 1                                     | 0 (0)                               |  |  |  |
|   |                          | Uplink   | Low                  | 1855                   | 371000        | 1850.32                           | 370064                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | Mid                  | 1882.5                 | 376500        | 1787.1                            | 357420                          | 504                |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | High                 | 1910                   | 382000        | 1904.24                           | 380848                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
| 15  | 79                       | Downlink | Low                  | 1937.5                 | 387500        | 1930.39                           | 386078                          | 0                  | 15   | 4831                          | 386450    | 4                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          |          | Mid                  | 1962.5                 | 392500        | 1937.03                           | 387406                          | 102                |      | 4892                          | 391450    | 4                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          |          | High                 | 1987.5                 | 397500        | 1889.67                           | 377934                          | 504                |      | 4956                          | 396510    | 0                              | 0                                     | 1 (2)                               |  |  |  |
|   |                          | Uplink   | Low                  | 1857.5                 | 371500        | 1850.39                           | 370078                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | Mid                  | 1882.5                 | 376500        | 1784.67                           | 356934                          | 504                |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | High                 | 1907.5                 | 381500        | 1899.31                           | 379862                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
| 20  | 106                      | Downlink | Low                  | 1940                   | 388000        | 1930.46                           | 386092                          | 0                  | 15   | 4832                          | 386650    | 6                              | 1                                     | 2 (4)                               |  |  |  |
|   |                          |          | Mid                  | 1962.5                 | 392500        | 1934.6                            | 386920                          | 102                |      | 4886                          | 390970    | 6                              | 0                                     | 0 (0)                               |  |  |  |
|   |                          |          | High                 | 1985                   | 397000        | 1884.74                           | 376948                          | 504                |      | 4943                          | 395530    | 2                              | 0                                     | 1 (2)                               |  |  |  |
|   |                          | Uplink   | Low                  | 1860                   | 372000        | 1850.46                           | 370092                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | Mid                  | 1882.5                 | 376500        | 1782.24                           | 356448                          | 504                |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|   |                          |          | High                 | 1905                   | 381000        | 1894.38                           | 378876                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                |                                       |                                     |  |  |  |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                |                                       |                                     |  |  |  |

Table 4.3.1.1.1.25-2: Test frequencies for NR operating band n25 and SCS 30 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 2 | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|
| 10   | 24                       | Downlink | Low  | 1935                 | 387000                 | 1930.68       | 386136                            | 0                               | 15                 | 4836 | 386910                        | 18        | 0                                     | 0 (5)                                 | 10                                  |
|  |                          |          | Mid  | 1962.5               | 392500                 | 1921.46       | 384292                            | 102                             |                    | 4904 | 392410                        | 18        | 0                                     | 0 (5)                                 | 214                                 |
|  |                          |          | High | 1990                 | 398000                 | 1804.24       | 360848                            | 504                             |                    | 4975 | 397970                        | 14        | 0                                     | 1 (6)                                 | 1020                                |
|  | Uplink                   | Uplink   | Low  | 1855                 | 371000                 | 1850.68       | 370136                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 1882.5               | 376500                 | 1696.74       | 339348                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 1910                 | 382000                 | 1903.52       | 380704                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  | 38                       | Downlink | Low  | 1937.5               | 387500                 | 1930.66       | 386132                            | 0                               | 15                 | 4837 | 386930                        | 2         | 0                                     | 1 (6)                                 | 12                                  |
|  |                          |          | Mid  | 1962.5               | 392500                 | 1918.94       | 383788                            | 102                             |                    | 4898 | 391930                        | 2         | 0                                     | 1 (6)                                 | 216                                 |
|  |                          |          | High | 1987.5               | 397500                 | 1799.22       | 359844                            | 504                             |                    | 4962 | 396990                        | 22        | 0                                     | 1 (6)                                 | 1020                                |
|  |                          | Uplink   | Low  | 1857.5               | 371500                 | 1850.66       | 370132                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 1882.5               | 376500                 | 1694.22       | 338844                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 1907.5               | 381500                 | 1898.5        | 379700                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  | 51                       | Downlink | Low  | 1940                 | 388000                 | 1930.82       | 386164                            | 0                               | 15                 | 4835 | 386890                        | 2         | 0                                     | 0 (5)                                 | 10                                  |
|  |                          |          | Mid  | 1962.5               | 392500                 | 1916.6        | 383320                            | 102                             |                    | 4892 | 391450                        | 22        | 0                                     | 0 (5)                                 | 214                                 |
|  |                          |          | High | 1985                 | 397000                 | 1794.38       | 358876                            | 504                             |                    | 4949 | 396010                        | 18        | 0                                     | 1 (6)                                 | 1020                                |
|  |                          | Uplink   | Low  | 1860                 | 372000                 | 1850.82       | 370164                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 1882.5               | 376500                 | 1691.88       | 338376                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 1905                 | 381000                 | 1893.66       | 378732                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |          |      |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |

Table 4.3.1.1.1.25-3: Test frequencies for NR operating band n25 and SCS 60 kHz without CORESET#0

| CBW [MHz] | <i>carrierBand width</i> [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | <i>absolute FrequencyPoint A</i> [ARFCN] | <i>offsetTo Carrier</i> [PRBs] | SS block SCS [kHz] | GSCN | <i>absolute FrequencySSB</i> [ARFCN] |
|-----------|---------------------------------|----------|------|----------------------|------------------------|---------------|--|--------------------------------|--------------------|------|--------------------------------------|
| 10        | 11                              | Downlink | Low  | 1935                 | 387000                 | 1931.04       | 386208                                   | 0                              | 15                 | -    | 386568                               |
|           |                                 |          | Mid  | 1962.5               | 392500                 | 1885.1        | 377020                                   | 102                            |                    | -    | 392068                               |
|           |                                 |          | High | 1990                 | 398000                 | 1623.16       | 324632                                   | 504                            |                    | -    | 397568                               |
|           |                                 | Uplink   | Low  | 1855                 | 371000                 | 1851.04       | 370208                                   | 0                              | -                  | -    | -                                    |
|           |                                 |          | Mid  | 1882.5               | 376500                 | 1515.66       | 303132                                   | 504                            |                    | -    | -                                    |
|           |                                 |          | High | 1910                 | 382000                 | 1901.72       | 380344                                   | 6                              |                    | -    | -                                    |
| 15        | 18                              | Downlink | Low  | 1937.5               | 387500                 | 1931.02       | 386204                                   | 0                              | 15                 | -    | 386564                               |
|           |                                 |          | Mid  | 1962.5               | 392500                 | 1882.58       | 376516                                   | 102                            |                    | -    | 391564                               |
|           |                                 |          | High | 1987.5               | 397500                 | 1618.14       | 323628                                   | 504                            |                    | -    | 396564                               |
|           |                                 | Uplink   | Low  | 1857.5               | 371500                 | 1851.02       | 370204                                   | 0                              | -                  | -    | -                                    |
|           |                                 |          | Mid  | 1882.5               | 376500                 | 1513.14       | 302628                                   | 504                            |                    | -    | -                                    |
|           |                                 |          | High | 1907.5               | 381500                 | 1896.7        | 379340                                   | 6                              |                    | -    | -                                    |
| 20        | 24                              | Downlink | Low  | 1940                 | 388000                 | 1931.36       | 386272                                   | 0                              | 15                 | -    | 386632                               |
|           |                                 |          | Mid  | 1962.5               | 392500                 | 1880.42       | 376084                                   | 102                            |                    | -    | 391132                               |
|           |                                 |          | High | 1985                 | 397000                 | 1613.48       | 322696                                   | 504                            |                    | -    | 395632                               |
|           |                                 | Uplink   | Low  | 1860                 | 372000                 | 1851.36       | 370272                                   | 0                              | -                  | -    | -                                    |
|           |                                 |          | Mid  | 1882.5               | 376500                 | 1510.98       | 302196                                   | 504                            |                    | -    | -                                    |
|           |                                 |          | High | 1905                 | 381000                 | 1892.04       | 378408                                   | 6                              |                    | -    | -                                    |

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ ,  $controlResourceSetZero = 0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).

## 4.3.1.1.1.26

## Reference test frequencies for NR operating band n26

Table 4.3.1.1.1.26-1: Test frequencies for NR operating band n26 and SCS 15 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset carrier CORE SET#0 Index (Offset [RBs]) Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |     |  |  |
|---|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---|--|-------------------------------------|-----|--|--|
| 5   | 25                       | Downlink | Low                  | 861.5                  | 172300        | 859.25                            | 171850                          | 0                  | 15   | 2153                          | 172330    | 4   | 1                                      | 1 (2)                               | 3   |  |  |
|   |                          |          | Mid                  | 876.5                  | 175300        | 855.89                            | 171178                          | 102                |      | 2189                          | 175210    | 0   | 0                                      | 0 (0)                               | 102 |  |  |
|   |                          |          | High                 | 891.5                  | 178300        | 798.53                            | 159706                          | 504                |      | 2228                          | 178330    | 4   | 1                                      | 1 (2)                               | 507 |  |  |
|   |                          | Uplink   | Low                  | 816.5                  | 163300        | 814.25                            | 162850                          | 0                  | -    | -                             | -         | -   | -                                      | -                                   | -   |  |  |
|   |                          |          | Mid                  | 831.5                  | 166300        | 738.53                            | 147706                          | 504                |      | -                             | -         | -   | -                                      | -                                   | -   |  |  |
|   |                          |          | High                 | 846.5                  | 169300        | 843.17                            | 168634                          | 6                  |      | -                             | -         | -   | -                                      | -                                   | -   |  |  |
|   |                          | Downlink | Low                  | 864                    | 172800        | 859.32                            | 171864                          | 0                  | 15   | 2154                          | 172350    | 6   | 1                                      | 1 (2)                               | 3   |  |  |
|   |                          |          | Mid                  | 876.5                  | 175300        | 853.46                            | 170692                          | 102                |      | 2183                          | 174730    | 2   | 0                                      | 0 (0)                               | 102 |  |  |
|   |                          |          | High                 | 889                    | 177800        | 793.6                             | 158720                          | 504                |      | 2218                          | 177410    | 2   | 1                                      | 2 (4)                               | 509 |  |  |
|   |                          | Uplink   | Low                  | 819                    | 163800        | 814.32                            | 162864                          | 0                  | -    | -                             | -         | -   | -                                      | -                                   | -   |  |  |
|   |                          |          | Mid                  | 831.5                  | 166300        | 736.1                             | 147220                          | 504                |      | -                             | -         | -   | -                                      | -                                   | -   |  |  |
|   |                          |          | High                 | 844                    | 168800        | 838.24                            | 167648                          | 6                  |      | -                             | -         | -   | -                                      | -                                   | -   |  |  |
|   |                          | Downlink | Low                  | 866.5                  | 173300        | 859.39                            | 171878                          | 0                  | 15   | 2155                          | 172370    | 8   | 1                                      | 1 (2)                               | 3   |  |  |
|   |                          |          | Mid                  | 876.5                  | 175300        | 851.03                            | 170206                          | 102                |      | 2177                          | 174250    | 4   | 0                                      | 0 (0)                               | 102 |  |  |
|   |                          |          | High                 | 886.5                  | 177300        | 788.67                            | 157734                          | 504                |      | 2205                          | 176430    | 4   | 1                                      | 2 (4)                               | 509 |  |  |
|   |                          | Uplink   | Low                  | 821.5                  | 164300        | 814.39                            | 162878                          | 0                  | -    | -                             | -         | -   | -                                      | -                                   | -   |  |  |
|   |                          |          | Mid                  | 831.5                  | 166300        | 733.67                            | 146734                          | 504                |      | -                             | -         | -   | -                                      | -                                   | -   |  |  |
|   |                          |          | High                 | 841.5                  | 168300        | 833.31                            | 166662                          | 6                  |      | -                             | -         | -   | -                                      | -                                   | -   |  |  |
|   |                          | Downlink | Low                  | 869                    | 173800        | 859.46                            | 171892                          | 0                  | 15   | 2153                          | 172330    | 2   | 0                                      | 1 (2)                               | 2   |  |  |
|   |                          |          | Mid                  | 876.5                  | 175300        | 848.6                             | 169720                          | 102                |      | 2171                          | 173770    | 6   | 0                                      | 0 (0)                               | 102 |  |  |
|   |                          |          | High                 | 884                    | 176800        | 783.74                            | 156748                          | 504                |      | 2192                          | 175450    | 6   | 1                                      | 2 (4)                               | 509 |  |  |
|   |                          | Uplink   | Low                  | 824                    | 164800        | 814.46                            | 162892                          | 0                  | -    | -                             | -         | -   | -                                      | -                                   | -   |  |  |
|   |                          |          | Mid                  | 831.5                  | 166300        | 731.24                            | 146248                          | 504                |      | -                             | -         | -   | -                                      | -                                   | -   |  |  |
|   |                          |          | High                 | 839                    | 167800        | 828.38                            | 165676                          | 6                  |      | -                             | -         | -   | -                                      | -                                   | -   |  |  |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |   |  |                                     |     |  |  |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |   |  |                                     |     |  |  |

Table 4.3.1.1.1.26-2: Test frequencies for NR operating band n26 and SCS 30 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset carrier CORESET#0 Index [RBs] Note 2 | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---|---------------------------------------|-------------------------------------|
| 10   | 24                       | Downlink | Low                  | 864                    | 172800        | 859.68                            | 171936                          | 0                  | 15   | 2160                          | 172830    | 10  | 0                                     | 2 (7)                               |
|  |                          |          | Mid                  | 876.5                  | 175300        | 835.46                            | 167092                          | 102                |      | 2189                          | 175210    | 18  | 0                                     | 0 (5)                               |
|  |                          |          | High                 | 889                    | 177800        | 703.24                            | 140648                          | 504                |      | 2224                          | 177890    | 6   | 0                                     | 3 (8)                               |
|  |                          | Uplink   | Low                  | 819                    | 163800        | 814.68                            | 162936                          | 0                  | -    | -                             | -         | -   | -                                     | -                                   |
|  |                          |          | Mid                  | 831.5                  | 166300        | 645.74                            | 129148                          | 504                |      | -                             | -         | -   | -                                     | -                                   |
|  |                          |          | High                 | 844                    | 168800        | 837.52                            | 167504                          | 6                  |      | -                             | -         | -   | -                                     | -                                   |
|  | 15                       | Downlink | Low                  | 866.5                  | 173300        | 859.66                            | 171932                          | 0                  | 15   | 2161                          | 172850    | 18  | 0                                     | 2 (7)                               |
|  |                          |          | Mid                  | 876.5                  | 175300        | 832.94                            | 166588                          | 102                |      | 2183                          | 174730    | 2   | 0                                     | 1 (6)                               |
|  |                          |          | High                 | 886.5                  | 177300        | 698.22                            | 139644                          | 504                |      | 2208                          | 176670    | 6   | 0                                     | 0 (5)                               |
|  |                          | Uplink   | Low                  | 821.5                  | 164300        | 814.66                            | 162932                          | 0                  | -    | -                             | -         | -   | -                                     | -                                   |
|  |                          |          | Mid                  | 831.5                  | 166300        | 643.22                            | 128644                          | 504                |      | -                             | -         | -   | -                                     | -                                   |
|  |                          |          | High                 | 841.5                  | 168300        | 832.5                             | 166500                          | 6                  |      | -                             | -         | -   | -                                     | -                                   |
|  | 20                       | Downlink | Low                  | 869                    | 173800        | 859.82                            | 171964                          | 0                  | 15   | 2159                          | 172810    | 18  | 0                                     | 1 (6)                               |
|  |                          |          | Mid                  | 876.5                  | 175300        | 830.6                             | 166120                          | 102                |      | 2177                          | 174250    | 22  | 0                                     | 0 (5)                               |
|  |                          |          | High                 | 884                    | 176800        | 693.38                            | 138676                          | 504                |      | 2195                          | 175690    | 2   | 0                                     | 0 (5)                               |
|  |                          | Uplink   | Low                  | 824                    | 164800        | 814.82                            | 162964                          | 0                  | -    | -                             | -         | -   | -                                     | -                                   |
|  |                          |          | Mid                  | 831.5                  | 166300        | 640.88                            | 128176                          | 504                |      | -                             | -         | -   | -                                     | -                                   |
|  |                          |          | High                 | 839                    | 167800        | 827.66                            | 165532                          | 6                  |      | -                             | -         | -   | -                                     | -                                   |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |   |                                       |                                     |

4.3.1.1.1.27 FFS

4.3.1.1.1.28 Reference test frequencies for NR operating band n28

Table 4.3.1.1.1.28-1: Test frequencies for NR operating band n28 and SCS 15 kHz

| CBW [MHz]      | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |     |
|----------------|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|-------------------------------------|-----|
| 5              | 25                       | Downlink | Low                  | 760.5                  | 152100        | 758.25                            | 151650                          | 0                  | 15   | 1902                          | 152190    | 0                                      | 1                                      | 2 (4)                               | 5   |
|                |                          |          | Mid                  | 780.5                  | 156100        | 759.89                            | 151978                          | 102                |      | 1949                          | 156010    | 0                                      | 0                                      | 0 (0)                               | 102 |
|                |                          |          | High                 | 800.5                  | 160100        | 707.53                            | 141506                          | 504                |      | 2002                          | 160130    | 4                                      | 1                                      | 1 (2)                               | 507 |
|                |                          | Uplink   | Low                  | 705.5                  | 141100        | 703.25                            | 140650                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                   | -   |
|                |                          |          | Mid                  | 725.5                  | 145100        | 632.53                            | 126506                          | 504                |      | -                             | -         | -                                      | -                                      | -                                   | -   |
|                |                          |          | High                 | 745.5                  | 149100        | 742.17                            | 148434                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                   | -   |
| 10             | 52                       | Downlink | Low                  | 763                    | 152600        | 758.32                            | 151664                          | 0                  | 15   | 1903                          | 152210    | 2                                      | 1                                      | 2 (4)                               | 5   |
|                |                          |          | Mid                  | 780.5                  | 156100        | 757.46                            | 151492                          | 102                |      | 1943                          | 155530    | 2                                      | 0                                      | 0 (0)                               | 102 |
|                |                          |          | High                 | 798                    | 159600        | 702.6                             | 140520                          | 504                |      | 1989                          | 159150    | 6                                      | 1                                      | 1 (2)                               | 507 |
|                |                          | Uplink   | Low                  | 708                    | 141600        | 703.32                            | 140664                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                   | -   |
|                |                          |          | Mid                  | 725.5                  | 145100        | 630.1                             | 126020                          | 504                |      | -                             | -         | -                                      | -                                      | -                                   | -   |
|                |                          |          | High                 | 743                    | 148600        | 737.24                            | 147448                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                   | -   |
| 15             | 79                       | Downlink | Low                  | 765.5                  | 153100        | 758.39                            | 151678                          | 0                  | 15   | 1901                          | 152170    | 8                                      | 1                                      | 1 (2)                               | 3   |
|                |                          |          | Mid                  | 780.5                  | 156100        | 755.03                            | 151006                          | 102                |      | 1937                          | 155050    | 4                                      | 0                                      | 0 (0)                               | 102 |
|                |                          |          | High                 | 795.5                  | 159100        | 697.67                            | 139534                          | 504                |      | 1976                          | 158170    | 8                                      | 1                                      | 1 (2)                               | 507 |
|                |                          | Uplink   | Low                  | 710.5                  | 142100        | 703.39                            | 140678                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                   | -   |
|                |                          |          | Mid                  | 725.5                  | 145100        | 627.67                            | 125534                          | 504                |      | -                             | -         | -                                      | -                                      | -                                   | -   |
|                |                          |          | High                 | 740.5                  | 148100        | 732.31                            | 146462                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                   | -   |
| 20<br>(Note 2) | 106                      | Downlink | Low                  | 768                    | 153600        | 758.46                            | 151692                          | 0                  | 15   | 1902                          | 152190    | 10                                     | 1                                      | 1 (2)                               | 3   |
|                |                          |          | Mid                  | 783                    | 156600        | 755.1                             | 151020                          | 102                |      | 1938                          | 155070    | 6                                      | 0                                      | 0 (0)                               | 102 |
|                |                          |          | High                 | 793                    | 158600        | 692.74                            | 138548                          | 504                |      | 1966                          | 157250    | 6                                      | 1                                      | 2 (4)                               | 509 |
|                |                          | Uplink   | Low                  | 713                    | 142600        | 703.46                            | 140692                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                   | -   |
|                |                          |          | Mid                  | 728                    | 145600        | 627.74                            | 125548                          | 504                |      | -                             | -         | -                                      | -                                      | -                                   | -   |
|                |                          |          | High                 | 738                    | 147600        | 727.38                            | 145476                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                   | -   |
| 30<br>(Note 4) | 160                      | Downlink | Low                  | 773                    | 154600        | 758.6                             | 151720                          | 0                  | 15   | 1901                          | 152170    | 6                                      | 0                                      | 1 (2)                               | 2   |
|                |                          |          | High                 | 788                    | 157600        | 682.88                            | 136576                          | 504                |      | 1940                          | 155290    | 10                                     | 1                                      | 2 (4)                               | 509 |
|                |                          | Uplink   | Low                  | 718                    | 143600        | 703.6                             | 140720                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                   | -   |
|                |                          |          | High                 | 733                    | 146600        | 717.52                            | 143504                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                   | -   |

- Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 2: Carrier centre frequency moved for Mid Range and CBW=20 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1.
- Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.
- Note 4: No carrier centre frequency specified for Mid Range and CBW=30 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1.

Table 4.3.1.1.1.28-2: Test frequencies for NR operating band n28 and SCS 30 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 Index [RBs] Note 3 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|-------------------------------------|
| 10   | 24                       | Downlink | Low  | 763                  | 152600                 | 758.68        | 151736                            | 0                               | 15                 | 1909 | 152690                        | 6         | 0  | 3 (8)                                  | 16                                  |
|  |                          |          | Mid  | 780.5                | 156100                 | 739.46        | 147892                            | 102                             |                    | 1949 | 156010                        | 18        | 0  | 0 (5)                                  | 214                                 |
|  |                          |          | High | 798                  | 159600                 | 612.24        | 122448                            | 504                             |                    | 1995 | 159630                        | 10        | 0  | 2 (7)                                  | 1022                                |
|  |                          | Uplink   | Low  | 708                  | 141600                 | 703.68        | 140736                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                   |
|  |                          |          | Mid  | 725.5                | 145100                 | 539.74        | 107948                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                   |
|  |                          |          | High | 743                  | 148600                 | 736.52        | 147304                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                   |
|  | 15                       | Downlink | Low  | 765.5                | 153100                 | 758.66        | 151732                            | 0                               | 15                 | 1907 | 152650                        | 18        | 0  | 2 (7)                                  | 14                                  |
|  |                          |          | Mid  | 780.5                | 156100                 | 736.94        | 147388                            | 102                             |                    | 1943 | 155530                        | 2         | 0  | 1 (6)                                  | 216                                 |
|  |                          |          | High | 795.5                | 159100                 | 607.22        | 121444                            | 504                             |                    | 1982 | 158650                        | 18        | 0  | 2 (7)                                  | 1022                                |
|  |                          | Uplink   | Low  | 710.5                | 142100                 | 703.66        | 140732                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                   |
|  |                          |          | Mid  | 725.5                | 145100                 | 537.22        | 107444                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                   |
|  |                          |          | High | 740.5                | 148100                 | 731.5         | 146300                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                   |
| 20<br>(Note 2)   | 51                       | Downlink | Low  | 768                  | 153600                 | 758.82        | 151764                            | 0                               | 15                 | 1908 | 152670                        | 14        | 0  | 2 (7)                                  | 14                                  |
|  |                          |          | Mid  | 783                  | 156600                 | 737.1         | 147420                            | 102                             |                    | 1944 | 155550                        | 22        | 0  | 0 (5)                                  | 214                                 |
|  |                          |          | High | 793                  | 158600                 | 602.38        | 120476                            | 504                             |                    | 1969 | 157490                        | 2         | 0  | 0 (5)                                  | 1018                                |
|  |                          | Uplink   | Low  | 713                  | 142600                 | 703.82        | 140764                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                   |
|  |                          |          | Mid  | 728                  | 145600                 | 537.38        | 107476                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                   |
|  |                          |          | High | 738                  | 147600                 | 726.66        | 145332                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                   |
| 30<br>(Note 4)   | 78                       | Downlink | Low  | 773                  | 154600                 | 758.96        | 151792                            | 0                               | 15                 | 1907 | 152650                        | 22        | 0  | 1 (6)                                  | 12                                  |
|  |                          |          | High | 788                  | 157600                 | 592.52        | 118504                            | 504                             |                    | 1943 | 155530                        | 6         | 0  | 0 (5)                                  | 1018                                |
|  |                          | Uplink   | Low  | 718                  | 143600                 | 703.96        | 140792                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                   |
|  |                          |          | High | 733                  | 146600                 | 716.8         | 143360                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                   |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: Carrier centre frequency moved for Mid Range and CBW=20 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1.</p> <p>Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: No carrier centre frequency specified for Mid Range and CBW=30 MHz due to Note 7 in TS 38.101-1 [7], Table 5.3.5-1.</p> |                          |          |      |                      |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                     |

## 4.3.1.1.1.29

Reference test frequencies for NR operating band n29 (SDL)

**Table 4.3.1.1.1.29-1: Test frequencies for NR operating band n29 and SCS 15 kHz without CORESET#0**

| CBW [MHz]   | carrierBand width [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|---|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|-------------------------|--------------------|------|-------------------------------|
| 5   | 25                       | Downlink | Low  | 719.5                | 143900                 | 717.25        | 143450                            | 0                       | 15                 | -    | 143810                        |
|   |                          |          | Mid  | 722.5                | 144500                 | 701.89        | 140378                            | 102                     |                    | -    | 144410                        |
|   |                          |          | High | 725.5                | 145100                 | 632.53        | 126506                            | 504                     |                    | -    | 145010                        |
| 10  | 52                       | Downlink | Low  | 722                  | 144400                 | 717.32        | 143464                            | 0                       | 15                 | -    | 143824                        |
|   |                          |          | Mid  | 722.5                | 144500                 | 699.46        | 139892                            | 102                     |                    | -    | 143924                        |
|   |                          |          | High | 723                  | 144600                 | 627.6         | 125520                            | 504                     |                    | -    | 144024                        |
| Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$ , $controlResourceSetZero = 0$ and $searchSpaceZero = 0$ (TS 38.213 [22], clause 13). |                          |          |      |                      |                        |               |                                   |                         |                    |      |                               |

**Table 4.3.1.1.1.29-2: Test frequencies for NR operating band n29 and SCS 30 kHz without CORESET#0**

| CBW [MHz]   | carrierBand width [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|---|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|-------------------------|--------------------|------|-------------------------------|
| 10  | 24                       | Downlink | Low  | 722                  | 144400                 | 717.68        | 143536                            | 0                       | 15                 | -    | 143896                        |
|   |                          |          | Mid  | 722.5                | 144500                 | 681.46        | 136292                            | 102                     |                    | -    | 143996                        |
|   |                          |          | High | 723                  | 144600                 | 537.24        | 107448                            | 504                     |                    | -    | 144096                        |
| Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$ , $controlResourceSetZero = 0$ and $searchSpaceZero = 0$ (TS 38.213 [22], clause 13). |                          |          |      |                      |                        |               |                                   |                         |                    |      |                               |

## 4.3.1.1.1.30 Reference test frequencies for NR operating band n30

**Table 4.3.1.1.30-1: Test frequencies for NR operating band n30 and SCS 15 kHz**

| <b>CBW [MHz]</b> | <b>carrier Bandwidth [PRBs]</b> | <b>Range</b> |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absolute FrequencyPoint A [ARFCN]</b> | <b>offsetTo Carrier [Carrier PRBs]</b> | <b>SS block SCS [kHz]</b> | <b>GSCN</b> | <b>absolute FrequencySSB [ARFCN]</b> | <b><math>k_{SSB}</math></b> | <b>Offset Carrier CORE SET#0 [RBs] Note 2</b> | <b>CORE SET#0 Index (Offset [RBs]) Note 1</b> | <b>offsetToPointA (SIB1) [PRBs] Note 1</b> |
|------------------|---------------------------------|--------------|------|-----------------------------|-------------------------------|----------------------|--|--|---------------------------|-------------|--------------------------------------|-----------------------------|---|---|--|
| 5                | 25                              | Downlink     | Low  | 2352.5                      | 470500                        | 2350.25              | 470050                                   | 0                                      | 15                        | 5879        | 470410                               | 0                           | 0   | 0 (0)   | 0  |
|                  |                                 |              | Mid  | 2355                        | 471000                        | 2334.39              | 466878                                   | 102                                    |                           | 5886        | 470910                               | 0                           | 0   | 0 (0)   | 102  |
|                  |                                 |              | High | 2357.5                      | 471500                        | 2264.53              | 452906                                   | 504                                    |                           | 5893        | 471410                               | 0                           | 0   | 0 (0)   | 504  |
|                  |                                 | Uplink       | Low  | 2307.5                      | 461500                        | 2305.25              | 461050                                   | 0                                      | -                         | -           | -                                    | -                           | -   | -   | -  |
|                  |                                 |              | Mid  | 2310                        | 462000                        | 2217.03              | 443406                                   | 504                                    |                           | -           | -                                    | -                           | -   | -   | -  |
|                  |                                 |              | High | 2312.5                      | 462500                        | 2309.17              | 461834                                   | 6                                      |                           | -           | -                                    | -                           | -   | -   | -  |
|                  | 10                              | Downlink     | Low  | 2355                        | 471000                        | 2350.32              | 470064                                   | 0                                      | 15                        | 5880        | 470430                               | 2                           | 0   | 0 (0)   | 0  |
|                  |                                 |              | Mid  | 2355                        | 471000                        | 2331.96              | 466392                                   | 102                                    |                           | 5880        | 470430                               | 2                           | 0   | 0 (0)   | 102  |
|                  |                                 |              | High | 2355                        | 471000                        | 2259.6               | 451920                                   | 504                                    |                           | 5880        | 470430                               | 2                           | 0   | 0 (0)   | 504  |
|                  |                                 | Uplink       | Low  | 2310                        | 462000                        | 2305.32              | 461064                                   | 0                                      | -                         | -           | -                                    | -                           | -   | -   | -  |
|                  |                                 |              | Mid  | 2310                        | 462000                        | 2214.6               | 442920                                   | 504                                    |                           | -           | -                                    | -                           | -   | -   | -  |
|                  |                                 |              | High | 2310                        | 462000                        | 2304.24              | 460848                                   | 6                                      |                           | -           | -                                    | -                           | -   | -   | -  |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.1.1.30-2: Test frequencies for NR operating band n30 and SCS 30 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 2 | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |  |  |  |
|---|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|--|--|--|
| 10  | 24                       | Downlink | Low  | 2355                 | 471000                 | 2350.68       | 470136                            | 0                               | 15                 | 5886 | 470910                        | 18        | 0                                     | 0 (5)                                 | 10                                  |  |  |  |
|   |                          |          | Mid  | 2355                 | 471000                 | 2313.96       | 462792                            | 102                             |                    | 5886 | 470910                        | 18        | 0                                     | 0 (5)                                 | 214                                 |  |  |  |
|   |                          |          | High | 2355                 | 471000                 | 2169.24       | 433848                            | 504                             |                    | 5886 | 470910                        | 18        | 0                                     | 0 (5)                                 | 1018                                |  |  |  |
|   | Uplink                   | Uplink   | Low  | 2310                 | 462000                 | 2305.68       | 461136                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |  |  |  |
|   |                          |          | Mid  | 2310                 | 462000                 | 2124.24       | 424848                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |  |  |  |
|   |                          |          | High | 2310                 | 462000                 | 2303.52       | 460704                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |  |  |  |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |                          |          |      |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |  |  |  |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |                          |          |      |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |  |  |  |

## 4.3.1.1.1.31 to 4.3.1.1.1.33 FFS

## 4.3.1.1.1.34 Reference test frequencies for NR operating band n34

Table 4.3.1.1.34-1: Test frequencies for NR operating band n34 and SCS 15 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] | CORESET#0 Index (Offset [RBs]) Note 2 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|-------------------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--------------------------------|---------------------------------------|-------------------------------------|
| 5  | 25                       | Downlink & Uplink | Low                  | 2012.5                 | 402500        | 2010.25                           | 402050                          | 0                  | 15   | 5032                          | 402530    | 4                              | 1                                     | 1 (2)                               |
|  |                          |                   | Mid                  | 2017.5                 | 403500        | 1996.89                           | 399378                          | 102                |      | 5043                          | 403470    | 8                              | 1                                     | 0 (0)                               |
|  |                          |                   | High                 | 2022.5                 | 404500        | 1929.53                           | 385906                          | 504                |      | 5054                          | 404410    | 0                              | 0                                     | 0 (0)                               |
| 10   | 52                       | Downlink & Uplink | Low                  | 2015                   | 403000        | 2010.32                           | 402064                          | 0                  | 30   | 5036                          | 402970    | 2                              | 3                                     | 0 (2)                               |
|  |                          |                   | Mid                  | 2017.5                 | 403500        | 1994.46                           | 398892                          | 102                |      | 5043                          | 403470    | 2                              | 3                                     | 0 (2)                               |
|  |                          |                   | High                 | 2020                   | 404000        | 1924.6                            | 384920                          | 504                |      | 5050                          | 403970    | 2                              | 3                                     | 0 (2)                               |
| 15   | 79                       | Downlink & Uplink | Low                  | 2017.5                 | 403500        | 2010.39                           | 402078                          | 0                  | 30   | 5037                          | 402990    | 4                              | 3                                     | 0 (2)                               |
|  |                          |                   | Mid                  | -                      | -             | -                                 | -                               | -                  |      | -                             | -         | -                              | -                                     | -                                   |
|  |                          |                   | High                 | -                      | -             | -                                 | -                               | -                  |      | -                             | -         | -                              | -                                     | -                                   |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |                   |                      |                        |               |                                   |                                 |                    |      |                               |           |                                |                                       |                                     |

Table 4.3.1.1.1.34-2: Test frequencies for NR operating band n34 and SCS 30 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 2 | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|
| 10   | 24                       | Downlink & Uplink | Low  | 2015                 | 403000                 | 2010.68       | 402136                            | 0                               | 30                 | 5036 | 402970                        | 14        | 0                                     | 1 (1)                                 | 2                                   |
|  |                          |                   | Mid  | 2017.5               | 403500                 | 1976.46       | 395292                            | 102                             |                    | 5043 | 403470                        | 14        | 0                                     | 1 (1)                                 | 206                                 |
|  |                          |                   | High | 2020                 | 404000                 | 1834.24       | 366848                            | 504                             |                    | 5050 | 403970                        | 14        | 0                                     | 1 (1)                                 | 1010                                |
| 15   | 38                       | Downlink & Uplink | Low  | 2017.5               | 403500                 | 2010.66       | 402132                            | 0                               | 30                 | 5037 | 402990                        | 22        | 0                                     | 1 (1)                                 | 12                                  |
|  |                          |                   | -    | -                    | -                      | -             | -                                 | -                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |                   | -    | -                    | -                      | -             | -                                 | -                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |                   |      |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |

Table 4.3.1.1.1.34-3: Test frequencies for NR operating band n34 and SCS 60 kHz without CORESET#0

| CBW [MHz]  | carrierBand width [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|--|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|-------------------------|--------------------|------|-------------------------------|
| 10   | 11                       | Downlink & Uplink | Low  | 2015                 | 403000                 | 2011.04       | 402208                            | 0                       | 15                 | -    | 402568                        |
|  |                          |                   | Mid  | 2017.5               | 403500                 | 1940.1        | 388020                            | 102                     |                    | -    | 403068                        |
|  |                          |                   | High | 2020                 | 404000                 | 1653.16       | 330632                            | 504                     |                    | -    | 403568                        |
| 15   | 18                       | Downlink & Uplink | Low  | 2017.5               | 403500                 | 2011.02       | 402204                            | 0                       | 15                 | -    | 402564                        |
|  |                          |                   | Mid  |                      |                        |               |                                   |                         |                    |      |                               |
|  |                          |                   | High |                      |                        |               |                                   |                         |                    |      |                               |
| <p>Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting <math>k_{SSB} = 31</math>, controlResourceSetZero=0 and searchSpaceZero = 0 (TS 38.213 [22], clause 13).</p> |                          |                   |      |                      |                        |               |                                   |                         |                    |      |                               |

## 4.3.1.1.1.35 to 4.3.1.1.1.37 FFS

4.3.1.1.1.38 Reference test frequencies for NR operating band n38

Table 4.3.1.1.1.38-1: Test frequencies for NR operating band n38 and SCS 15 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) Note 2 | offsetToPointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|-------------------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------|--|-------------------------------------|
| 5         | 25                       | Downlink & Uplink | Low                  | 2572.5                 | 514500        | 2570.25                           | 514050                          | 0                  | 15   | 6432                          | 514590    | 0                               | 1                                      | 2 (4)                               |
|           |                          |                   | Mid                  | 2592.5                 | 518500        | 2571.89                           | 514378                          | 102                |      | 6479                          | 518410    | 0                               | 0                                      | 0 (0)                               |
|           |                          |                   | High                 | 2617.5                 | 523500        | 2524.53                           | 504906                          | 504                |      | 6543                          | 523470    | 8                               | 1                                      | 0 (0)                               |
| 10        | 52                       | Downlink & Uplink | Low                  | 2575                   | 515000        | 2570.32                           | 514064                          | 0                  | 30   | 6439                          | 515090    | 6                               | 2                                      | 1 (6)                               |
|           |                          |                   | Mid                  | 2595                   | 519000        | 2571.96                           | 514392                          | 102                |      | 6486                          | 518910    | 6                               | 1                                      | 0 (2)                               |
|           |                          |                   | High                 | 2615                   | 523000        | 2519.6                            | 503920                          | 504                |      | 6536                          | 522970    | 2                               | 3                                      | 0 (2)                               |
| 15        | 79                       | Downlink & Uplink | Low                  | 2577.5                 | 515500        | 2570.39                           | 514078                          | 0                  | 30   | 6437                          | 515050    | 0                               | 1                                      | 1 (6)                               |
|           |                          |                   | Mid                  | 2595                   | 519000        | 2569.53                           | 513906                          | 102                |      | 6480                          | 518430    | 8                               | 1                                      | 0 (2)                               |
|           |                          |                   | High                 | 2612.5                 | 522500        | 2514.67                           | 502934                          | 504                |      | 6526                          | 522050    | 0                               | 1                                      | 1 (6)                               |
| 20        | 106                      | Downlink & Uplink | Low                  | 2580                   | 516000        | 2570.46                           | 514092                          | 0                  | 30   | 6438                          | 515070    | 2                               | 1                                      | 1 (6)                               |
|           |                          |                   | Mid                  | 2595                   | 519000        | 2567.1                            | 513420                          | 102                |      | 6474                          | 517950    | 10                              | 1                                      | 0 (2)                               |
|           |                          |                   | High                 | 2610                   | 522000        | 2509.74                           | 501948                          | 504                |      | 6513                          | 521070    | 2                               | 1                                      | 1 (6)                               |
| 40        | 216                      | Downlink & Uplink | Low                  | 2590                   | 518000        | 2570.56                           | 514112                          | 0                  | 30   | 6439                          | 515090    | 2                               | 1                                      | 1 (6)                               |
|           |                          |                   | Mid                  | 2595                   | 519000        | 2557.2                            | 511440                          | 102                |      | 6450                          | 516030    | 6                               | 3                                      | 0 (2)                               |
|           |                          |                   | High                 | 2600                   | 520000        | 2489.84                           | 497968                          | 504                |      | 6461                          | 516970    | 10                              | 1                                      | 0 (2)                               |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 for SSB\_SCS = 15kHz and Table 13-3 for SSB\_SCS=30kHz in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.1.1.38-2: Test frequencies for NR operating band n38 and SCS 30 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 Index (Offset [RBs]) Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|---|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---|--|-------------------------------------|
| 10  | 24                       | Downlink & Uplink | Low  | 2575                 | 515000                 | 2570.68       | 514136                            | 0                               | 30                 | 6439 | 515090                        | 6         | 0   | 3 (3)                                  | 6                                   |
|   |                          |                   | Mid  | 2595                 | 519000                 | 2553.96       | 510792                            | 102                             |                    | 6486 | 518910                        | 18        | 0   | 0 (0)                                  | 204                                 |
|   |                          |                   | High | 2615                 | 523000                 | 2429.24       | 485848                            | 504                             |                    | 6536 | 522970                        | 14        | 0   | 1 (1)                                  | 1010                                |
| 15  | 38                       | Downlink & Uplink | Low  | 2577.5               | 515500                 | 2570.66       | 514132                            | 0                               | 30                 | 6437 | 515050                        | 18        | 0   | 2 (2)                                  | 4                                   |
|   |                          |                   | Mid  | 2595                 | 519000                 | 2551.44       | 510288                            | 102                             |                    | 6480 | 518430                        | 2         | 0   | 1 (1)                                  | 206                                 |
|   |                          |                   | High | 2612.5               | 522500                 | 2424.22       | 484844                            | 504                             |                    | 6526 | 522050                        | 18        | 0   | 2 (2)                                  | 1012                                |
| 20  | 51                       | Downlink & Uplink | Low  | 2580                 | 516000                 | 2570.82       | 514164                            | 0                               | 30                 | 6438 | 515070                        | 14        | 0   | 2 (2)                                  | 4                                   |
|   |                          |                   | Mid  | 2595                 | 519000                 | 2549.1        | 509820                            | 102                             |                    | 6474 | 517950                        | 22        | 0   | 0 (0)                                  | 204                                 |
|   |                          |                   | High | 2610                 | 522000                 | 2419.38       | 483876                            | 504                             |                    | 6513 | 521070                        | 14        | 0   | 2 (2)                                  | 1012                                |
| 40  | 106                      | Downlink & Uplink | Low  | 2590                 | 518000                 | 2570.92       | 514184                            | 0                               | 30                 | 6439 | 515090                        | 14        | 0   | 2 (2)                                  | 4                                   |
|   |                          |                   | Mid  | 2595                 | 519000                 | 2539.2        | 507840                            | 102                             |                    | 6450 | 516030                        | 18        | 0   | 1 (1)                                  | 206                                 |
|   |                          |                   | High | 2600                 | 520000                 | 2399.48       | 479896                            | 504                             |                    | 6461 | 516970                        | 22        | 0   | 0 (0)                                  | 1008                                |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |                   |      |                      |                        |               |                                   |                                 |                    |      |                               |           |   |  |                                     |

Table 4.3.1.1.1.38-3: Test frequencies for NR operating band n38 and SCS 60 kHz without CORESET#0

| CBW [MHz] | carrierBandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequency PointA [ARFCN] | offsetToCarrier [PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequency SSB [ARFCN] |
|-----------|-------------------------|-------------------|------|----------------------|------------------------|---------------|----------------------------------|------------------------|--------------------|------|-------------------------------|
| 10        | 11                      | Downlink & Uplink | Low  | 2575                 | 515000                 | 2571.04       | 514208                           | 0                      | 30                 | -    | 514928                        |
|           |                         |                   | Mid  | 2595                 | 519000                 | 2517.6        | 503520                           | 102                    |                    | -    | 518928                        |
|           |                         |                   | High | 2615                 | 523000                 | 2248.16       | 449632                           | 504                    |                    | -    | 522928                        |
| 15        | 18                      | Downlink & Uplink | Low  | 2577.5               | 515500                 | 2571.02       | 514204                           | 0                      | 30                 | -    | 514924                        |
|           |                         |                   | Mid  | 2595                 | 519000                 | 2515.08       | 503016                           | 102                    |                    | -    | 518424                        |
|           |                         |                   | High | 2612.5               | 522500                 | 2243.14       | 448628                           | 504                    |                    | -    | 521924                        |
| 20        | 24                      | Downlink & Uplink | Low  | 2580                 | 516000                 | 2571.36       | 514272                           | 0                      | 30                 | -    | 514992                        |
|           |                         |                   | Mid  | 2595                 | 519000                 | 2512.92       | 502584                           | 102                    |                    | -    | 517992                        |
|           |                         |                   | High | 2610                 | 522000                 | 2238.48       | 447696                           | 504                    |                    | -    | 520992                        |
| 40        | 51                      | Downlink & Uplink | Low  | 2590                 | 518000                 | 2571.64       | 514328                           | 0                      | 15                 | -    | 514688                        |
|           |                         |                   | Mid  | 2595                 | 519000                 | 2503.2        | 500640                           | 102                    |                    | -    | 515688                        |
|           |                         |                   | High | 2600                 | 520000                 | 2218.76       | 443752                           | 504                    |                    | -    | 516688                        |

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ ,  $controlResourceSetZero=0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).

## 4.3.1.1.1.39

Reference test frequencies for NR operating band n39

Table 4.3.1.1.1.39-1: Test frequencies for NR operating band n39 and SCS 15 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN   | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|--------|-------------------------------|-----------|--|--|-------------------------------------|
| 5  | 25                       | Downlink &        | Low  | 1882.5               | 376500                 | 1880.25       | 376050                            | 0                               | 15                 | 4707   | 376590                        | 0         | 1                                      | 2 (4)                                  | 5                                   |
|  |                          |                   | Mid  | 1898.8               | 379760                 | 1878.19       | 375638                            | 102                             |                    | 474737 |                               | 8         | 1                                      | 0 (0)                                  | 103                                 |
|  |                          | Uplink            | High | 1917.5               | 383500                 | 1824.53       | 364906                            | 504                             |                    | 9730   | 4793                          | 383530    | 4                                      | 1                                      | 1 (2)                               |
| 10   | 52                       | Downlink & Uplink | Low  | 1885                 | 377000                 | 1880.32       | 376064                            | 0                               | 30                 | 4714   | 377090                        | 6         | 2                                      | 1 (6)                                  | 8                                   |
|  |                          |                   | Mid  | 1900                 | 380000                 | 1876.96       | 375392                            | 102                             |                    | 4750   | 379970                        | 2         | 3                                      | 0 (2)                                  | 107                                 |
|  |                          |                   | High | 1915                 | 383000                 | 1819.6        | 363920                            | 504                             |                    | 4789   | 383090                        | 6         | 2                                      | 1 (6)                                  | 512                                 |
| 15   | 79                       | Downlink & Uplink | Low  | 1887.5               | 377500                 | 1880.39       | 376078                            | 0                               | 30                 | 4712   | 377050                        | 0         | 1                                      | 1 (6)                                  | 7                                   |
|  |                          |                   | Mid  | 1900                 | 380000                 | 1874.53       | 374906                            | 102                             |                    | 4744   | 379490                        | 4         | 3                                      | 0 (2)                                  | 107                                 |
|  |                          |                   | High | 1912.5               | 382500                 | 1814.67       | 362934                            | 504                             |                    | 4773   | 381870                        | 0         | 0                                      | 0 (2)                                  | 506                                 |
| 20   | 106                      | Downlink & Uplink | Low  | 1890                 | 378000                 | 1880.46       | 376092                            | 0                               | 30                 | 4713   | 377070                        | 2         | 1                                      | 1 (6)                                  | 7                                   |
|  |                          |                   | Mid  | 1900                 | 380000                 | 1872.1        | 374420                            | 102                             |                    | 4738   | 379010                        | 6         | 3                                      | 0 (2)                                  | 107                                 |
|  |                          |                   | High | 1910                 | 382000                 | 1809.74       | 361948                            | 504                             |                    | 4760   | 380890                        | 2         | 0                                      | 0 (2)                                  | 506                                 |
| 25   | 133                      | Downlink & Uplink | Low  | 1892.5               | 378500                 | 1880.53       | 376106                            | 0                               | 30                 | 4714   | 377090                        | 4         | 1                                      | 1 (6)                                  | 7                                   |
|  |                          |                   | Mid  | 1900                 | 380000                 | 1869.67       | 373934                            | 102                             |                    | 4732   | 378530                        | 8         | 3                                      | 0 (2)                                  | 107                                 |
|  |                          |                   | High | 1907.5               | 381500                 | 1804.81       | 360962                            | 504                             |                    | 4750   | 379970                        | 0         | 2                                      | 0 (2)                                  | 508                                 |
| 30   | 160                      | Downlink & Uplink | Low  | 1895                 | 379000                 | 1880.6        | 376120                            | 0                               | 30                 | 4712   | 377050                        | 10        | 3                                      | 0 (2)                                  | 5                                   |
|  |                          |                   | Mid  | 1900                 | 380000                 | 1867.24       | 373448                            | 102                             |                    | 4726   | 378050                        | 10        | 3                                      | 0 (2)                                  | 107                                 |
|  |                          |                   | High | 1905                 | 381000                 | 1799.88       | 359976                            | 504                             |                    | 4737   | 378990                        | 2         | 2                                      | 0 (2)                                  | 508                                 |
| 40   | 216                      | Downlink & Uplink | Low  | 1900                 | 380000                 | 1880.56       | 376112                            | 0                               | 30                 | 4714   | 377090                        | 2         | 1                                      | 1 (6)                                  | 7                                   |
|  |                          |                   | Mid  | 1900                 | 380000                 | 1862.2        | 372440                            | 102                             |                    | 4714   | 377090                        | 2         | 1                                      | 1 (6)                                  | 109                                 |
|  |                          |                   | High | 1900                 | 380000                 | 1789.84       | 357968                            | 504                             |                    | 4714   | 377090                        | 2         | 1                                      | 1 (6)                                  | 511                                 |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 for SSB_SCS = 15kHz and Table 13-3 for SSB_SCS=30kHz in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |                   |      |                      |                        |               |                                   |                                 |                    |        |                               |           |  |  |                                     |

Table 4.3.1.1.1.39-2: Test frequencies for NR operating band n39 and SCS 30 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 2 | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|
| 10   | 24                       | Downlink & Uplink | Low  | 1885                 | 377000                 | 1880.68       | 376136                            | 0                               | 30                 | 4714 | 377090                        | 6         | 0                                     | 3 (3)                                 | 6                                   |
|  |                          |                   | Mid  | 1900                 | 380000                 | 1858.96       | 371792                            | 102                             |                    | 4750 | 379970                        | 14        | 0                                     | 1 (1)                                 | 206                                 |
|  |                          |                   | High | 1915                 | 383000                 | 1729.24       | 345848                            | 504                             |                    | 4789 | 383090                        | 6         | 0                                     | 3 (3)                                 | 1014                                |
| 15   | 38                       | Downlink & Uplink | Low  | 1887.5               | 377500                 | 1880.66       | 376132                            | 0                               | 30                 | 4712 | 377050                        | 18        | 0                                     | 2 (2)                                 | 4                                   |
|  |                          |                   | Mid  | 1900                 | 380000                 | 1856.44       | 371288                            | 102                             |                    | 4744 | 379490                        | 22        | 0                                     | 1 (1)                                 | 206                                 |
|  |                          |                   | High | 1912.5               | 382500                 | 1724.22       | 344844                            | 504                             |                    | 4773 | 381870                        | 6         | 0                                     | 0 (0)                                 | 1008                                |
| 20   | 51                       | Downlink & Uplink | Low  | 1890                 | 378000                 | 1880.82       | 376164                            | 0                               | 30                 | 4713 | 377070                        | 14        | 0                                     | 2 (2)                                 | 4                                   |
|  |                          |                   | Mid  | 1900                 | 380000                 | 1854.1        | 370820                            | 102                             |                    | 4738 | 379010                        | 18        | 0                                     | 1 (1)                                 | 206                                 |
|  |                          |                   | High | 1910                 | 382000                 | 1719.38       | 343876                            | 504                             |                    | 4760 | 380890                        | 2         | 0                                     | 0 (0)                                 | 1008                                |
| 25   | 65                       | Downlink & Uplink | Low  | 1892.5               | 378500                 | 1880.8        | 376160                            | 0                               | 30                 | 4714 | 377090                        | 22        | 0                                     | 2 (2)                                 | 4                                   |
|  |                          |                   | Mid  | 1900                 | 380000                 | 1851.58       | 370316                            | 102                             |                    | 4732 | 378530                        | 2         | 0                                     | 2 (2)                                 | 208                                 |
|  |                          |                   | High | 1907.5               | 381500                 | 1714.36       | 342872                            | 504                             |                    | 4750 | 379970                        | 6         | 0                                     | 1 (1)                                 | 1010                                |
| 30   | 78                       | Downlink & Uplink | Low  | 1895                 | 379000                 | 1880.96       | 376192                            | 0                               | 30                 | 4712 | 377050                        | 22        | 0                                     | 1 (1)                                 | 2                                   |
|  |                          |                   | Mid  | 1900                 | 380000                 | 1849.24       | 369848                            | 102                             |                    | 4726 | 378050                        | 22        | 0                                     | 1 (1)                                 | 206                                 |
|  |                          |                   | High | 1905                 | 381000                 | 1709.52       | 341904                            | 504                             |                    | 4737 | 378990                        | 2         | 0                                     | 1 (1)                                 | 1010                                |
| 40   | 106                      | Downlink & Uplink | Low  | 1900                 | 380000                 | 1880.92       | 376184                            | 0                               | 30                 | 4714 | 377090                        | 14        | 0                                     | 2 (2)                                 | 4                                   |
|  |                          |                   | Mid  | 1900                 | 380000                 | 1844.2        | 368840                            | 102                             |                    | 4714 | 377090                        | 14        | 0                                     | 2 (2)                                 | 208                                 |
|  |                          |                   | High | 1900                 | 380000                 | 1699.48       | 339896                            | 504                             |                    | 4714 | 377090                        | 14        | 0                                     | 2 (2)                                 | 1012                                |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |                   |      |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |

Table 4.3.1.1.39-3: Test frequencies for NR operating band n39 and SCS 60 kHz without CORESET#0

| CBW [MHz] | <i>carrierBand width</i> [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | <i>absolute FrequencyPoint A</i> [ARFCN] | <i>offsetTo Carrier</i> [PRBs] | SS block SCS [kHz] | GSCN | <i>absolute FrequencySSB</i> [ARFCN] |
|-----------|---------------------------------|-------------------|------|----------------------|------------------------|---------------|--|--------------------------------|--------------------|------|--------------------------------------|
| 10        | 11                              | Downlink & Uplink | Low  | 1885                 | 377000                 | 1881.04       | 376208                                   | 0                              | 30                 | -    | 376928                               |
|           |                                 |                   | Mid  | 1900                 | 380000                 | 1822.6        | 364520                                   | 102                            |                    | -    | 379928                               |
|           |                                 |                   | High | 1915                 | 383000                 | 1548.16       | 309632                                   | 504                            |                    | -    | 382928                               |
| 15        | 18                              | Downlink & Uplink | Low  | 1887.5               | 377500                 | 1881.02       | 376204                                   | 0                              | 30                 | -    | 376924                               |
|           |                                 |                   | Mid  | 1900                 | 380000                 | 1820.08       | 364016                                   | 102                            |                    | -    | 379424                               |
|           |                                 |                   | High | 1912.5               | 382500                 | 1543.14       | 308628                                   | 504                            |                    | -    | 381924                               |
| 20        | 24                              | Downlink & Uplink | Low  | 1890                 | 378000                 | 1881.36       | 376272                                   | 0                              | 30                 | -    | 376992                               |
|           |                                 |                   | Mid  | 1900                 | 380000                 | 1817.92       | 363584                                   | 102                            |                    | -    | 378992                               |
|           |                                 |                   | High | 1910                 | 382000                 | 1538.48       | 307696                                   | 504                            |                    | -    | 380992                               |
| 25        | 31                              | Downlink & Uplink | Low  | 1892.5               | 378500                 | 1881.34       | 376268                                   | 0                              | 30                 | -    | 376988                               |
|           |                                 |                   | Mid  | 1900                 | 380000                 | 1815.4        | 363080                                   | 102                            |                    | -    | 378488                               |
|           |                                 |                   | High | 1907.5               | 381500                 | 1533.46       | 306692                                   | 504                            |                    | -    | 379988                               |
| 30        | 38                              | Downlink & Uplink | Low  | 1895                 | 379000                 | 1881.32       | 376264                                   | 0                              | 30                 | -    | 376984                               |
|           |                                 |                   | Mid  | 1900                 | 380000                 | 1812.88       | 362576                                   | 102                            |                    | -    | 377984                               |
|           |                                 |                   | High | 1905                 | 381000                 | 1528.44       | 305688                                   | 504                            |                    | -    | 378984                               |
| 40        | 51                              | Downlink & Uplink | Low  | 1900                 | 380000                 | 1881.64       | 376328                                   | 0                              | 30                 | -    | 377048                               |
|           |                                 |                   | Mid  | -                    | -                      | -             | -  | -                              |                    | -    | -                                    |
|           |                                 |                   | High | -                    | -                      | -             | -  | -                              |                    | -    | -                                    |

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ ,  $controlResourceSetZero=0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).

## 4.3.1.1.1.40

Reference test frequencies for NR operating band n40

Table 4.3.1.1.1.40-1: Test frequencies for NR operating band n40 and SCS 15 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 Index (Offset [RBs]) Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|---|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---|--|-------------------------------------|
| 5   | 25                       | Downlink & Uplink | Low  | 2302.5               | 460500                 | 2300.25       | 460050                            | 0                               | (Note 3)           | -    | 460770                        | -         | -   | -                                      | -                                   |
|   |                          |                   | Mid  | 2350                 | 470000                 | 2329.39       | 465878                            | 102                             |                    | -    | 470270                        | -         | -   | -                                      | -                                   |
|   |                          |                   | High | 2397.5               | 479500                 | 2304.53       | 460906                            | 504                             |                    | -    | 479770                        | -         | -   | -                                      | -                                   |
| 10  | 52                       | Downlink & Uplink | Low  | 2305                 | 461000                 | 2300.32       | 460064                            | 0                               | 30                 | 5764 | 461090                        | 6         | 2   | 1 (6)                                  | 8                                   |
|   |                          |                   | Mid  | 2350                 | 470000                 | 2326.96       | 465392                            | 102                             |                    | 5875 | 469970                        | 2         | 3   | 0 (2)                                  | 107                                 |
|   |                          |                   | High | 2395                 | 479000                 | 2299.6        | 459920                            | 504                             |                    | 5989 | 479090                        | 6         | 2   | 1 (6)                                  | 512                                 |
| 15  | 79                       | Downlink & Uplink | Low  | 2307.5               | 461500                 | 2300.39       | 460078                            | 0                               | 30                 | 5762 | 461050                        | 0         | 1   | 1 (6)                                  | 7                                   |
|   |                          |                   | Mid  | 2350                 | 470000                 | 2324.53       | 464906                            | 102                             |                    | 5869 | 469490                        | 4         | 3   | 0 (2)                                  | 107                                 |
|   |                          |                   | High | 2392.5               | 478500                 | 2294.67       | 458934                            | 504                             |                    | 5973 | 477870                        | 0         | 0   | 0 (2)                                  | 506                                 |
| 20  | 106                      | Downlink & Uplink | Low  | 2310                 | 462000                 | 2300.46       | 460092                            | 0                               | 30                 | 5763 | 461070                        | 2         | 1   | 1 (6)                                  | 7                                   |
|   |                          |                   | Mid  | 2350                 | 470000                 | 2322.1        | 464420                            | 102                             |                    | 5863 | 469010                        | 6         | 3   | 0 (2)                                  | 107                                 |
|   |                          |                   | High | 2390                 | 478000                 | 2289.74       | 457948                            | 504                             |                    | 5960 | 476890                        | 2         | 0   | 0 (2)                                  | 506                                 |
| 25  | 133                      | Downlink & Uplink | Low  | 2312.5               | 462500                 | 2300.53       | 460106                            | 0                               | 30                 | 5764 | 461090                        | 4         | 1   | 1 (6)                                  | 7                                   |
|   |                          |                   | Mid  | 2350                 | 470000                 | 2319.67       | 463934                            | 102                             |                    | 5857 | 468530                        | 8         | 3   | 0 (2)                                  | 107                                 |
|   |                          |                   | High | 2387.5               | 477500                 | 2284.81       | 456962                            | 504                             |                    | 5950 | 475970                        | 0         | 2   | 0 (2)                                  | 508                                 |
| 30  | 160                      | Downlink & Uplink | Low  | 2315                 | 463000                 | 2300.6        | 460120                            | 0                               | 30                 | 5762 | 461050                        | 10        | 3   | 0 (2)                                  | 5                                   |
|   |                          |                   | Mid  | 2350                 | 470000                 | 2317.24       | 463448                            | 102                             |                    | 5851 | 468050                        | 10        | 3   | 0 (2)                                  | 107                                 |
|   |                          |                   | High | 2385                 | 477000                 | 2279.88       | 455976                            | 504                             |                    | 5937 | 474990                        | 2         | 2   | 0 (2)                                  | 508                                 |
| 40  | 216                      | Downlink & Uplink | Low  | 2320                 | 464000                 | 2300.56       | 460112                            | 0                               | 30                 | 5764 | 461090                        | 2         | 1   | 1 (6)                                  | 7                                   |
|   |                          |                   | Mid  | 2350                 | 470000                 | 2312.2        | 462440                            | 102                             |                    | 5839 | 467090                        | 2         | 1   | 1 (6)                                  | 109                                 |
|   |                          |                   | High | 2380                 | 476000                 | 2269.84       | 453968                            | 504                             |                    | 5914 | 473090                        | 2         | 1   | 1 (6)                                  | 511                                 |
| 50  | 270                      | Downlink & Uplink | Low  | 2325                 | 465000                 | 2300.7        | 460140                            | 0                               | 30                 | 5763 | 461070                        | 10        | 3   | 0 (2)                                  | 5                                   |
|   |                          |                   | Mid  | 2350                 | 470000                 | 2307.34       | 461468                            | 102                             |                    | 5827 | 466130                        | 6         | 1   | 1 (6)                                  | 109                                 |
|   |                          |                   | High | 2375                 | 475000                 | 2259.98       | 451996                            | 504                             |                    | 5888 | 471130                        | 6         | 1   | 1 (6)                                  | 511                                 |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 3: No SS/PBCH block fits within the channel bandwidth. The channel bandwidth can only be used as SCell</p> |                          |                   |      |                      |                        |               |                                   |                                 |                    |      |                               |           |   |  |                                     |

Table 4.3.1.1.1.40-2: Test frequencies for NR operating band n40 and SCS 30 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 Index [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|-------------------------------------|
| 10        | 24                       | Downlink & Uplink | Low  | 2305                 | 461000                 | 2300.68       | 460136                            | 0                               | 30                 | 5764 | 461090                        | 6         | 0  | 3 (3)                                  | 6                                   |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2308.96       | 461792                            | 102                             |                    | 5875 | 469970                        | 14        | 0  | 1 (1)                                  | 206                                 |
|           |                          |                   | High | 2395                 | 479000                 | 2209.24       | 441848                            | 504                             |                    | 5989 | 479090                        | 6         | 0  | 3 (3)                                  | 1014                                |
| 15        | 38                       | Downlink & Uplink | Low  | 2307.5               | 461500                 | 2300.66       | 460132                            | 0                               | 30                 | 5762 | 461050                        | 18        | 0  | 2 (2)                                  | 4                                   |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2306.44       | 461288                            | 102                             |                    | 5869 | 469490                        | 22        | 0  | 1 (1)                                  | 206                                 |
|           |                          |                   | High | 2392.5               | 478500                 | 2204.22       | 440844                            | 504                             |                    | 5973 | 477870                        | 6         | 0  | 0 (0)                                  | 1008                                |
| 20        | 51                       | Downlink & Uplink | Low  | 2310                 | 462000                 | 2300.82       | 460164                            | 0                               | 30                 | 5763 | 461070                        | 14        | 0  | 2 (2)                                  | 4                                   |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2304.1        | 460820                            | 102                             |                    | 5863 | 469010                        | 18        | 0  | 1 (1)                                  | 206                                 |
|           |                          |                   | High | 2390                 | 478000                 | 2199.38       | 439876                            | 504                             |                    | 5960 | 476890                        | 2         | 0  | 0 (0)                                  | 1008                                |
| 25        | 65                       | Downlink & Uplink | Low  | 2312.5               | 462500                 | 2300.8        | 460160                            | 0                               | 30                 | 5764 | 461090                        | 22        | 0  | 2 (2)                                  | 4                                   |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2301.58       | 460316                            | 102                             |                    | 5857 | 468530                        | 2         | 0  | 2 (2)                                  | 208                                 |
|           |                          |                   | High | 2387.5               | 477500                 | 2194.36       | 438872                            | 504                             |                    | 5950 | 475970                        | 6         | 0  | 1 (1)                                  | 1010                                |
| 30        | 78                       | Downlink & Uplink | Low  | 2315                 | 463000                 | 2300.96       | 460192                            | 0                               | 30                 | 5762 | 461050                        | 22        | 0  | 1 (1)                                  | 2                                   |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2299.24       | 459848                            | 102                             |                    | 5851 | 468050                        | 22        | 0  | 1 (1)                                  | 206                                 |
|           |                          |                   | High | 2385                 | 477000                 | 2189.52       | 437904                            | 504                             |                    | 5937 | 474990                        | 2         | 0  | 1 (1)                                  | 1010                                |
| 40        | 106                      | Downlink & Uplink | Low  | 2320                 | 464000                 | 2300.92       | 460184                            | 0                               | 30                 | 5764 | 461090                        | 14        | 0  | 2 (2)                                  | 4                                   |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2294.2        | 458840                            | 102                             |                    | 5839 | 467090                        | 14        | 0  | 2 (2)                                  | 208                                 |
|           |                          |                   | High | 2380                 | 476000                 | 2179.48       | 435896                            | 504                             |                    | 5914 | 473090                        | 14        | 0  | 2 (2)                                  | 1012                                |
| 50        | 133                      | Downlink & Uplink | Low  | 2325                 | 465000                 | 2301.06       | 460212                            | 0                               | 30                 | 5763 | 461070                        | 22        | 0  | 1 (1)                                  | 2                                   |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2289.34       | 457868                            | 102                             |                    | 5827 | 466130                        | 18        | 0  | 2 (2)                                  | 208                                 |
|           |                          |                   | High | 2375                 | 475000                 | 2169.62       | 433924                            | 504                             |                    | 5888 | 471130                        | 18        | 0  | 2 (2)                                  | 1012                                |
| 60        | 162                      | Downlink & Uplink | Low  | 2330                 | 466000                 | 2300.84       | 460168                            | 0                               | 30                 | 5762 | 461050                        | 6         | 0  | 2 (2)                                  | 4                                   |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2284.12       | 456824                            | 102                             |                    | 5812 | 464930                        | 14        | 0  | 0 (0)                                  | 204                                 |
|           |                          |                   | High | 2370                 | 474000                 | 2159.4        | 431880                            | 504                             |                    | 5862 | 468990                        | 10        | 0  | 1 (1)                                  | 1010                                |
| 80        | 217                      | Downlink & Uplink | Low  | 2340                 | 468000                 | 2300.94       | 460188                            | 0                               | 30                 | 5763 | 461070                        | 6         | 0  | 2 (2)                                  | 4                                   |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2274.22       | 454844                            | 102                             |                    | 5788 | 463010                        | 10        | 0  | 1 (1)                                  | 206                                 |
|           |                          |                   | High | 2360                 | 472000                 | 2139.5        | 427900                            | 504                             |                    | 5813 | 465130                        | 2         | 0  | 3 (3)                                  | 1014                                |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.1.140-3: Test frequencies for NR operating band n40 and SCS 60 kHz without CORESET#0

| CBW [MHz] | carrierBand width [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|-----------|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|-------------------------|--------------------|------|-------------------------------|
| 10        | 11                       | Downlink & Uplink | Low  | 2305                 | 461000                 | 2301.04       | 460208                            | 0                       | 30                 | -    | 460928                        |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2272.6        | 454520                            | 102                     |                    | -    | 469928                        |
|           |                          |                   | High | 2395                 | 479000                 | 2028.16       | 405632                            | 504                     |                    | -    | 478928                        |
| 15        | 18                       | Downlink & Uplink | Low  | 2307.5               | 461500                 | 2301.02       | 460204                            | 0                       | 30                 | -    | 460924                        |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2270.08       | 454016                            | 102                     |                    | -    | 469424                        |
|           |                          |                   | High | 2392.5               | 478500                 | 2023.14       | 404628                            | 504                     |                    | -    | 477924                        |
| 20        | 24                       | Downlink & Uplink | Low  | 2310                 | 462000                 | 2301.36       | 460272                            | 0                       | 30                 | -    | 460992                        |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2267.92       | 453584                            | 102                     |                    | -    | 468992                        |
|           |                          |                   | High | 2390                 | 478000                 | 2018.48       | 403696                            | 504                     |                    | -    | 476992                        |
| 25        | 31                       | Downlink & Uplink | Low  | 2312.5               | 462500                 | 2301.34       | 460268                            | 0                       | 30                 | -    | 460988                        |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2265.4        | 453080                            | 102                     |                    | -    | 468488                        |
|           |                          |                   | High | 2387.5               | 477500                 | 2013.46       | 402692                            | 504                     |                    | -    | 475988                        |
| 30        | 38                       | Downlink & Uplink | Low  | 2315                 | 463000                 | 2301.32       | 460264                            | 0                       | 30                 | -    | 460984                        |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2262.88       | 452576                            | 102                     |                    | -    | 467984                        |
|           |                          |                   | High | 2385                 | 477000                 | 2008.44       | 401688                            | 504                     |                    | -    | 474984                        |
| 40        | 51                       | Downlink & Uplink | Low  | 2320                 | 464000                 | 2301.64       | 460328                            | 0                       | 30                 | -    | 461048                        |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2258.2        | 451640                            | 102                     |                    | -    | 467048                        |
|           |                          |                   | High | 2380                 | 476000                 | 1998.76       | 399752                            | 504                     |                    | -    | 473048                        |
| 50        | 65                       | Downlink & Uplink | Low  | 2325                 | 465000                 | 2301.6        | 460320                            | 0                       | 30                 | -    | 461040                        |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2253.16       | 450632                            | 102                     |                    | -    | 466040                        |
|           |                          |                   | High | 2375                 | 475000                 | 1988.72       | 397744                            | 504                     |                    | -    | 471040                        |
| 60        | 79                       | Downlink & Uplink | Low  | 2330                 | 466000                 | 2301.56       | 460312                            | 0                       | 30                 | -    | 461032                        |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2248.12       | 449624                            | 102                     |                    | -    | 465032                        |
|           |                          |                   | High | 2370                 | 474000                 | 1978.68       | 395736                            | 504                     |                    | -    | 469032                        |
| 80        | 107                      | Downlink & Uplink | Low  | 2340                 | 468000                 | 2301.48       | 460296                            | 0                       | 30                 | -    | 461016                        |
|           |                          |                   | Mid  | 2350                 | 470000                 | 2238.04       | 447608                            | 102                     |                    | -    | 463016                        |
|           |                          |                   | High | 2360                 | 472000                 | 1958.6        | 391720                            | 504                     |                    | -    | 465016                        |

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ ,  $controlResourceSetZero = 0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).

## 4.3.1.1.41

## Reference test frequencies for NR operating band n41

Table 4.3.1.1.41-1: Test frequencies for NR operating band n41, SCS 15 kHz and  $\Delta F_{\text{Raster}}$  15 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|------------------|--|--|-------------------------------------|
| 10        | 52                       | Downlink & Uplink | Low  | 2501.01              | 500202                 | 2496.33       | 499266                            | 0                               | 15                 | 6246 | 499710                        | 4                | 0                                      | 1 (2)                                  | 2                                   |
|           |                          |                   | Mid  | 2593.005             | 518601                 | 2569.965      | 513993                            | 102                             |                    | 6477 | 518190                        | 7                | 0                                      | 2 (4)                                  | 106                                 |
|           |                          |                   | High | 2685                 | 537000                 | 2589.6        | 517920                            | 504                             |                    | 6705 | 536430                        | 2                | 0                                      | 0 (0)                                  | 504                                 |
| 15        | 79                       | Downlink & Uplink | Low  | 2503.5               | 500700                 | 2496.39       | 499278                            | 0                               | 15                 | 6246 | 499710                        | 0                | 0                                      | 1 (2)                                  | 2                                   |
|           |                          |                   | Mid  | 2593.005             | 518601                 | 2567.535      | 513507                            | 102                             |                    | 6471 | 517710                        | 9                | 0                                      | 2 (4)                                  | 106                                 |
|           |                          |                   | High | 2682.495             | 536499                 | 2584.665      | 516933                            | 504                             |                    | 6693 | 535470                        | 11               | 0                                      | 0 (0)                                  | 504                                 |
| 20        | 106                      | Downlink & Uplink | Low  | 2506.005             | 501201                 | 2496.465      | 499293                            | 0                               | 15                 | 6246 | 499710                        | 7                | 1                                      | 0 (0)                                  | 1                                   |
|           |                          |                   | Mid  | 2593.005             | 518601                 | 2565.105      | 513021                            | 102                             |                    | 6465 | 517230                        | 11               | 0                                      | 2 (4)                                  | 106                                 |
|           |                          |                   | High | 2679.99              | 535998                 | 2579.73       | 515946                            | 504                             |                    | 6681 | 534510                        | 8                | 1                                      | 0 (0)                                  | 505                                 |
| 30        | 160                      | Downlink & Uplink | Low  | 2511                 | 502200                 | 2496.6        | 499320                            | 0                               | 15                 | 6246 | 499710                        | 10               | 0                                      | 0 (0)                                  | 0                                   |
|           |                          |                   | Mid  | 2593.005             | 518601                 | 2560.245      | 512049                            | 102                             |                    | 6453 | 516270                        | 3                | 1                                      | 2 (4)                                  | 107                                 |
|           |                          |                   | High | 2674.995             | 534999                 | 2569.875      | 513975                            | 504                             |                    | 6657 | 532590                        | 1                | 1                                      | 1 (2)                                  | 507                                 |
| 40        | 216                      | Downlink & Uplink | Low  | 2516.01              | 503202                 | 2496.57       | 499314                            | 0                               | 15                 | 6246 | 499710                        | 0                | 1                                      | 0 (0)                                  | 1                                   |
|           |                          |                   | Mid  | 2593.005             | 518601                 | 2555.205      | 511041                            | 102                             |                    | 6441 | 515310                        | 7                | 2                                      | 2 (4)                                  | 108                                 |
|           |                          |                   | High | 2670                 | 534000                 | 2559.84       | 511968                            | 504                             |                    | 6633 | 530670                        | 6                | 1                                      | 2 (4)                                  | 509                                 |
| 50        | 270                      | Downlink & Uplink | Low  | 2521.005             | 504201                 | 2496.705      | 499341                            | 0                               | 15                 | 6246 | 499710                        | 3                | 0                                      | 0 (0)                                  | 0                                   |
|           |                          |                   | Mid  | 2593.005             | 518601                 | 2550.345      | 510069                            | 102                             |                    | 6426 | 514110                        | 3                | 0                                      | 0 (0)                                  | 102                                 |
|           |                          |                   | High | 2664.99              | 532998                 | 2549.97       | 509994                            | 504                             |                    | 6606 | 528510                        | 4                | 0                                      | 0 (0)                                  | 504                                 |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.1.41-2: Test frequencies for NR operating band n41, SCS 30 kHz and  $\Delta F_{\text{Raster}}$  30 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 Index [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|------------------|--|--|-------------------------------------|
| 10   | 24                       | Downlink & Uplink | Low  | 2501.01              | 500202                 | 2496.69       | 499338                            | 0                               | 30                 | 6252 | 500190                        | 20               | 0  | 1 (1)                                  | 2                                   |
|  |                          |                   | Mid  | 2592.99              | 518598                 | 2551.95       | 510390                            | 102                             |                    | 6483 | 518670                        | 0                | 0  | 3 (3)                                  | 210                                 |
|  |                          |                   | High | 2685                 | 537000                 | 2499.24       | 499848                            | 504                             |                    | 6711 | 536910                        | 18               | 0  | 0 (0)                                  | 1008                                |
| 15   | 38                       | Downlink & Uplink | Low  | 2503.5               | 500700                 | 2496.66       | 499332                            | 0                               | 30                 | 6252 | 500190                        | 22               | 0  | 1 (1)                                  | 2                                   |
|  |                          |                   | Mid  | 2592.99              | 518598                 | 2549.43       | 509886                            | 102                             |                    | 6474 | 517950                        | 0                | 0  | 0 (0)                                  | 204                                 |
|  |                          |                   | High | 2682.48              | 536496                 | 2494.2        | 498840                            | 504                             |                    | 6699 | 535950                        | 10               | 0  | 1 (1)                                  | 1010                                |
| 20   | 51                       | Downlink & Uplink | Low  | 2506.02              | 501204                 | 2496.84       | 499368                            | 0                               | 30                 | 6252 | 500190                        | 10               | 0  | 1 (1)                                  | 2                                   |
|  |                          |                   | Mid  | 2592.99              | 518598                 | 2547.09       | 509418                            | 102                             |                    | 6471 | 517710                        | 4                | 0  | 3 (3)                                  | 210                                 |
|  |                          |                   | High | 2679.99              | 535998                 | 2489.37       | 497874                            | 504                             |                    | 6687 | 534990                        | 12               | 0  | 1 (1)                                  | 1010                                |
| 30   | 78                       | Downlink & Uplink | Low  | 2511                 | 502200                 | 2496.96       | 499392                            | 0                               | 30                 | 6252 | 500190                        | 2                | 0  | 1 (1)                                  | 2                                   |
|  |                          |                   | Mid  | 2592.99              | 518598                 | 2542.23       | 508446                            | 102                             |                    | 6456 | 516510                        | 0                | 0  | 0 (0)                                  | 204                                 |
|  |                          |                   | High | 2674.98              | 534996                 | 2479.5        | 495900                            | 504                             |                    | 6663 | 533070                        | 6                | 0  | 2 (2)                                  | 1012                                |
| 40   | 106                      | Downlink & Uplink | Low  | 2516.01              | 503202                 | 2496.93       | 499386                            | 0                               | 30                 | 6252 | 500190                        | 4                | 0  | 1 (1)                                  | 2                                   |
|  |                          |                   | Mid  | 2592.99              | 518598                 | 2537.19       | 507438                            | 102                             |                    | 6444 | 515550                        | 16               | 0  | 0 (0)                                  | 204                                 |
|  |                          |                   | High | 2670                 | 534000                 | 2469.48       | 493896                            | 504                             |                    | 6636 | 530910                        | 2                | 0  | 0 (0)                                  | 1008                                |
| 50   | 133                      | Downlink & Uplink | Low  | 2521.02              | 504204                 | 2497.08       | 499416                            | 0                               | 30                 | 6252 | 500190                        | 18               | 0  | 0 (0)                                  | 0                                   |
|  |                          |                   | Mid  | 2592.99              | 518598                 | 2532.33       | 506466                            | 102                             |                    | 6432 | 514590                        | 20               | 0  | 0 (0)                                  | 204                                 |
|  |                          |                   | High | 2664.99              | 532998                 | 2459.61       | 491922                            | 504                             |                    | 6612 | 528990                        | 20               | 0  | 0 (0)                                  | 1008                                |
| 60   | 162                      | Downlink & Uplink | Low  | 2526                 | 505200                 | 2496.84       | 499368                            | 0                               | 30                 | 6252 | 500190                        | 10               | 0  | 1 (1)                                  | 2                                   |
|  |                          |                   | Mid  | 2592.99              | 518598                 | 2527.11       | 505422                            | 102                             |                    | 6420 | 513630                        | 0                | 0  | 2 (2)                                  | 208                                 |
|  |                          |                   | High | 2659.98              | 531996                 | 2449.38       | 489876                            | 504                             |                    | 6588 | 527070                        | 14               | 0  | 2 (2)                                  | 1012                                |
| 80   | 217                      | Downlink & Uplink | Low  | 2536.02              | 507204                 | 2496.96       | 499392                            | 0                               | 30                 | 6252 | 500190                        | 2                | 0  | 1 (1)                                  | 2                                   |
|  |                          |                   | Mid  | 2592.99              | 518598                 | 2517.21       | 503442                            | 102                             |                    | 6396 | 511710                        | 20               | 0  | 2 (2)                                  | 208                                 |
|  |                          |                   | High | 2649.99              | 529998                 | 2429.49       | 485898                            | 504                             |                    | 6537 | 522990                        | 4                | 0  | 1 (1)                                  | 1010                                |
| 90   | 245                      | Downlink & Uplink | Low  | 2541                 | 508200                 | 2496.9        | 499380                            | 0                               | 30                 | 6252 | 500190                        | 6                | 0  | 1 (1)                                  | 2                                   |
|  |                          |                   | Mid  | 2592.99              | 518598                 | 2512.17       | 502434                            | 102                             |                    | 6381 | 510510                        | 4                | 0  | 0 (0)                                  | 204                                 |
|  |                          |                   | High | 2644.98              | 528996                 | 2419.44       | 483888                            | 504                             |                    | 6513 | 521070                        | 10               | 0  | 2 (2)                                  | 1012                                |
| 100  | 273                      | Downlink & Uplink | Low  | 2546.01              | 509202                 | 2496.87       | 499374                            | 0                               | 30                 | 6252 | 500190                        | 8                | 0  | 1 (1)                                  | 2                                   |
|  |                          |                   | Mid  | 2592.99              | 518598                 | 2507.13       | 501426                            | 102                             |                    | 6369 | 509550                        | 20               | 0  | 0 (0)                                  | 204                                 |
|  |                          |                   | High | 2640                 | 528000                 | 2409.42       | 481884                            | 504                             |                    | 6486 | 518910                        | 6                | 0  | 0 (0)                                  | 1008                                |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |                   |      |                      |                        |               |                                   |                                 |                    |      |                               |                  |  |  |                                     |

Table 4.3.1.1.41-3: Test frequencies for NR operating band n41, SCS 60 kHz and  $\Delta F_{\text{Raster}} = 15 \text{ kHz}$  without CORESET#0

| CBW [MHz]  | carrierBand width [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPointA [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|--|--------------------------|-------------------|------|----------------------|------------------------|---------------|---------------------------------|-------------------------|--------------------|------|-------------------------------|
| 10   | 11                       | Downlink & Uplink | Low  | 2501.01              | 500202                 | 2497.05       | 499410                          | 0                       | 15                 | -    | 499770                        |
|  |                          |                   | Mid  | 2593.005             | 518601                 | 2515.605      | 503121                          | 102                     |                    | -    | 518169                        |
|  |                          |                   | High | 2685                 | 537000                 | 2318.16       | 463632                          | 504                     |                    | -    | 536568                        |
| 15   | 18                       | Downlink & Uplink | Low  | 2503.5               | 500700                 | 2497.02       | 499404                          | 0                       | 15                 | -    | 499764                        |
|  |                          |                   | Mid  | 2593.005             | 518601                 | 2513.085      | 502617                          | 102                     |                    | -    | 517665                        |
|  |                          |                   | High | 2682.495             | 536499                 | 2313.135      | 462627                          | 504                     |                    | -    | 535563                        |
| 20   | 24                       | Downlink & Uplink | Low  | 2506.005             | 501201                 | 2497.365      | 499473                          | 0                       | 15                 | -    | 499833                        |
|  |                          |                   | Mid  | 2593.005             | 518601                 | 2510.925      | 502185                          | 102                     |                    | -    | 517233                        |
|  |                          |                   | High | 2679.99              | 535998                 | 2308.47       | 461694                          | 504                     |                    | -    | 534630                        |
| 30   | 38                       | Downlink & Uplink | Low  | 2511                 | 502200                 | 2497.32       | 499464                          | 0                       | 15                 | -    | 499824                        |
|  |                          |                   | Mid  | 2593.005             | 518601                 | 2505.885      | 501177                          | 102                     |                    | -    | 516225                        |
|  |                          |                   | High | 2674.995             | 534999                 | 2298.435      | 459687                          | 504                     |                    | -    | 532623                        |
| 40   | 51                       | Downlink & Uplink | Low  | 2516.01              | 503202                 | 2497.65       | 499530                          | 0                       | 15                 | -    | 499890                        |
|  |                          |                   | Mid  | 2593.005             | 518601                 | 2501.205      | 500241                          | 102                     |                    | -    | 515289                        |
|  |                          |                   | High | 2670                 | 534000                 | 2288.76       | 457752                          | 504                     |                    | -    | 530688                        |
| 50   | 65                       | Downlink & Uplink | Low  | 2521.005             | 504201                 | 2497.605      | 499521                          | 0                       | 15                 | -    | 499881                        |
|  |                          |                   | Mid  | 2593.005             | 518601                 | 2496.165      | 499233                          | 102                     |                    | -    | 514281                        |
|  |                          |                   | High | 2664.99              | 532998                 | 2278.71       | 455742                          | 504                     |                    | -    | 528678                        |
| 60   | 79                       | Downlink & Uplink | Low  | 2526                 | 505200                 | 2497.56       | 499512                          | 0                       | 15                 | -    | 499872                        |
|  |                          |                   | Mid  | 2593.005             | 518601                 | 2491.125      | 498225                          | 102                     |                    | -    | 513273                        |
|  |                          |                   | High | 2659.995             | 531999                 | 2268.675      | 453735                          | 504                     |                    | -    | 526671                        |
| 80   | 107                      | Downlink & Uplink | Low  | 2536.005             | 507201                 | 2497.485      | 499497                          | 0                       | 15                 | -    | 499857                        |
|  |                          |                   | Mid  | 2593.005             | 518601                 | 2481.045      | 496209                          | 102                     |                    | -    | 511257                        |
|  |                          |                   | High | 2649.99              | 529998                 | 2248.59       | 449718                          | 504                     |                    | -    | 522654                        |
| 90   | 121                      | Downlink & Uplink | Low  | 2541                 | 508200                 | 2497.44       | 499488                          | 0                       | 15                 | -    | 499848                        |
|  |                          |                   | Mid  | 2593.005             | 518601                 | 2476.005      | 495201                          | 102                     |                    | -    | 510249                        |
|  |                          |                   | High | 2644.995             | 528999                 | 2238.555      | 447711                          | 504                     |                    | -    | 520647                        |
| 100  | 135                      | Downlink & Uplink | Low  | 2546.01              | 509202                 | 2497.41       | 499482                          | 0                       | 15                 | -    | 499842                        |
|  |                          |                   | Mid  | 2593.005             | 518601                 | 2470.965      | 494193                          | 102                     |                    | -    | 509241                        |
|  |                          |                   | High | 2640                 | 528000                 | 2228.52       | 445704                          | 504                     |                    | -    | 518640                        |
| Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}} = 31$ , $\text{controlResourceSetZero} = 0$ and $\text{searchSpaceZero} = 0$ (TS 38.213 [22], clause 13). |                          |                   |      |                      |                        |               |                                 |                         |                    |      |                               |

## 4.3.1.1.1.42 to 4.3.1.1.1.47 FFS

## 4.3.1.1.1.48 Reference test frequencies for NR operating band n48

Table 4.3.1.1.1.48-1: Test frequencies for NR operating band n48 and SCS 15 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 2 | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|---|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|
| 5   | 25                       | Downlink & Uplink | Low  | 3552.51              | 636834                 | 3550.26       | 636684                            | 0                               | (Note 3)           | -    | -                             | -         | -                                     | -                                     | -                                   |
|   |                          |                   | Mid  | 3625.005             | 641667                 | 3604.395      | 640293                            | 102                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|   |                          |                   | High | 3697.5               | 646500                 | 3604.53       | 640302                            | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
| 10  | 52                       | Downlink & Uplink | Low  | 3555                 | 637000                 | 3550.32       | 636688                            | 0                               | 30                 | 7884 | 636960                        | 8         | 0                                     | 0 (2)                                 | 2                                   |
|   |                          |                   | Mid  | 3624.99              | 641666                 | 3601.95       | 640130                            | 102                             |                    | 7933 | 641664                        | 10        | 3                                     | 0 (2)                                 | 107                                 |
|   |                          |                   | High | 3694.98              | 646332                 | 3599.58       | 639972                            | 504                             |                    | 7982 | 646368                        | 0         | 3                                     | 1 (6)                                 | 513                                 |
| 15  | 79                       | Downlink & Uplink | Low  | 3557.52              | 637168                 | 3550.41       | 636694                            | 0                               | 30                 | 7884 | 636960                        | 2         | 0                                     | 0 (2)                                 | 2                                   |
|   |                          |                   | Mid  | 3624.99              | 641666                 | 3599.52       | 639968                            | 102                             |                    | 7931 | 641472                        | 4         | 1                                     | 0 (2)                                 | 105                                 |
|   |                          |                   | High | 3692.49              | 646166                 | 3594.66       | 639644                            | 504                             |                    | 7978 | 645984                        | 4         | 2                                     | 0 (2)                                 | 508                                 |
| 20  | 106                      | Downlink & Uplink | Low  | 3560.01              | 637334                 | 3550.47       | 636698                            | 0                               | 30                 | 7885 | 637056                        | 10        | 3                                     | 1 (6)                                 | 9                                   |
|   |                          |                   | Mid  | 3624.99              | 641666                 | 3597.09       | 639806                            | 102                             |                    | 7930 | 641376                        | 10        | 2                                     | 1 (6)                                 | 110                                 |
|   |                          |                   | High | 3690                 | 646000                 | 3589.74       | 639316                            | 504                             |                    | 7975 | 645696                        | 8         | 1                                     | 1 (6)                                 | 511                                 |
| 40  | 216                      | Downlink & Uplink | Low  | 3570                 | 638000                 | 3550.56       | 636704                            | 0                               | 30                 | 7885 | 637056                        | 4         | 3                                     | 1 (6)                                 | 9                                   |
|   |                          |                   | Mid  | 3624.99              | 641666                 | 3587.19       | 639146                            | 102                             |                    | 7923 | 640704                        | 10        | 1                                     | 1 (6)                                 | 109                                 |
|   |                          |                   | High | 3679.98              | 645332                 | 3569.82       | 637988                            | 504                             |                    | 7961 | 644352                        | 4         | 0                                     | 1 (6)                                 | 510                                 |
| 50  | 270                      | Downlink & Uplink | Low  | 3575.01              | 638334                 | 3550.71       | 636714                            | 0                               | 30                 | 7885 | 637056                        | 6         | 2                                     | 1 (6)                                 | 8                                   |
|   |                          |                   | Mid  | 3624.99              | 641666                 | 3582.33       | 638822                            | 102                             |                    | 7919 | 640320                        | 10        | 0                                     | 0 (2)                                 | 104                                 |
|   |                          |                   | High | 3675                 | 645000                 | 3559.98       | 637332                            | 504                             |                    | 7954 | 643680                        | 0         | 3                                     | 0 (2)                                 | 509                                 |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-3 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 3: No SS/PBCH block fits within the channel bandwidth. The channel bandwidth can only be used as SCell.</p> |                          |                   |      |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |

Table 4.3.1.1.1.48-2: Test frequencies for NR operating band n48 and SCS 30 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 Index [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|-------------------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|-------------------------------------|
| 10        | 24                       | Downlink & Uplink | Low                  | 3555                   | 637000        | 3550.68                           | 636712                          | 0                  | 30   | 7884                          | 636960    | 8  | 0                                      | 0 (0)                               |
|           |                          |                   | Mid                  | 3624.99                | 641666        | 3583.95                           | 638930                          | 102                |      | 7933                          | 641664    | 22   | 0                                      | 1 (1)                               |
|           |                          |                   | High                 | 3694.98                | 646332        | 3509.22                           | 633948                          | 504                |      | 7982                          | 646368    | 12   | 0                                      | 3 (3)                               |
| 15        | 38                       | Downlink & Uplink | Low                  | 3557.52                | 637168        | 3550.68                           | 636712                          | 0                  | 30   | 7884                          | 636960    | 8  | 0                                      | 0 (0)                               |
|           |                          |                   | Mid                  | 3624.99                | 641666        | 3581.43                           | 638762                          | 102                |      | 7931                          | 641472    | 22   | 0                                      | 0 (0)                               |
|           |                          |                   | High                 | 3692.49                | 646166        | 3504.21                           | 633614                          | 504                |      | 7978                          | 645984    | 10   | 0                                      | 1 (1)                               |
| 20        | 51                       | Downlink & Uplink | Low                  | 3560.01                | 637334        | 3550.83                           | 636722                          | 0                  | 30   | 7885                          | 637056    | 22   | 0                                      | 3 (3)                               |
|           |                          |                   | Mid                  | 3624.99                | 641666        | 3579.09                           | 638606                          | 102                |      | 7930                          | 641376    | 10   | 0                                      | 3 (3)                               |
|           |                          |                   | High                 | 3690                   | 646000        | 3499.38                           | 633292                          | 504                |      | 7975                          | 645696    | 20   | 0                                      | 2 (2)                               |
| 40        | 106                      | Downlink & Uplink | Low                  | 3570                   | 638000        | 3550.92                           | 636728                          | 0                  | 30   | 7885                          | 637056    | 16   | 0                                      | 3 (3)                               |
|           |                          |                   | Mid                  | 3624.99                | 641666        | 3569.19                           | 637946                          | 102                |      | 7923                          | 640704    | 22   | 0                                      | 2 (2)                               |
|           |                          |                   | High                 | 3679.98                | 645332        | 3479.46                           | 631964                          | 504                |      | 7961                          | 644352    | 4  | 0                                      | 2 (2)                               |
| 50        | 133                      | Downlink & Uplink | Low                  | 3575.01                | 638334        | 3551.07                           | 636738                          | 0                  | 30   | 7885                          | 637056    | 6  | 0                                      | 3 (3)                               |
|           |                          |                   | Mid                  | 3624.99                | 641666        | 3564.33                           | 637622                          | 102                |      | 7919                          | 640320    | 10   | 0                                      | 0 (0)                               |
|           |                          |                   | High                 | 3675                   | 645000        | 3469.62                           | 631308                          | 504                |      | 7954                          | 643680    | 12   | 0                                      | 1 (1)                               |
| 60        | 162                      | Downlink & Uplink | Low                  | 3580.02                | 638668        | 3550.86                           | 636724                          | 0                  | 30   | 7885                          | 637056    | 20   | 0                                      | 3 (3)                               |
|           |                          |                   | Mid                  | 3624.99                | 641666        | 3559.11                           | 637274                          | 102                |      | 7916                          | 640032    | 22   | 0                                      | 2 (2)                               |
|           |                          |                   | High                 | 3669.99                | 644666        | 3459.39                           | 630626                          | 504                |      | 7947                          | 643008    | 22   | 0                                      | 1 (1)                               |
| 80        | 217                      | Downlink & Uplink | Low                  | 3590.01                | 639334        | 3550.95                           | 636730                          | 0                  | 30   | 7885                          | 637056    | 14   | 0                                      | 3 (3)                               |
|           |                          |                   | Mid                  | 3624.99                | 641666        | 3549.21                           | 636614                          | 102                |      | 7909                          | 639360    | 10   | 0                                      | 2 (2)                               |
|           |                          |                   | High                 | 3660                   | 644000        | 3439.5                            | 629300                          | 504                |      | 7933                          | 641664    | 4  | 0                                      | 1 (1)                               |
| 90        | 245                      | Downlink & Uplink | Low                  | 3595.02                | 639668        | 3550.92                           | 636728                          | 0                  | 30   | 7885                          | 637056    | 16   | 0                                      | 3 (3)                               |
|           |                          |                   | Mid                  | 3624.99                | 641666        | 3544.17                           | 636278                          | 102                |      | 7905                          | 638976    | 10   | 0                                      | 0 (0)                               |
|           |                          |                   | High                 | 3654.99                | 643666        | 3429.45                           | 628630                          | 504                |      | 7926                          | 640992    | 2  | 0                                      | 1 (1)                               |
| 100       | 273                      | Downlink & Uplink | Low                  | 3600                   | 640000        | 3550.86                           | 636724                          | 0                  | 30   | 7885                          | 637056    | 20   | 0                                      | 3 (3)                               |
|           |                          |                   | Mid                  | 3624.99                | 641666        | 3539.13                           | 635942                          | 102                |      | 7902                          | 638688    | 10   | 0                                      | 2 (2)                               |
|           |                          |                   | High                 | 3649.98                | 643332        | 3419.4                            | 627960                          | 504                |      | 7919                          | 640320    | 0  | 0                                      | 1 (1)                               |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.1.1.48-3: Test frequencies for NR operating band n48 and SCS 60 kHz without CORESET#0

| CBW [MHz] | carrierBand width [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|-----------|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|-------------------------|--------------------|------|-------------------------------|
| 10        | 11                       | Downlink & Uplink | Low  | 3555                 | 637000                 | 3551.04       | 636736                            | 0                       | 30                 | -    | 636976                        |
|           |                          |                   | Mid  | 3624.99              | 641666                 | 3547.59       | 636506                            | 102                     |                    | -    | 641642                        |
|           |                          |                   | High | 3694.98              | 646332                 | 3328.14       | 621876                            | 504                     |                    | -    | 646308                        |
| 15        | 18                       | Downlink & Uplink | Low  | 3557.52              | 637168                 | 3551.04       | 636736                            | 0                       | 30                 | -    | 636976                        |
|           |                          |                   | Mid  | 3624.99              | 641666                 | 3545.07       | 636338                            | 102                     |                    | -    | 641474                        |
|           |                          |                   | High | 3692.49              | 646166                 | 3323.13       | 621542                            | 504                     |                    | -    | 645974                        |
| 20        | 24                       | Downlink & Uplink | Low  | 3560.01              | 637334                 | 3551.37       | 636758                            | 0                       | 30                 | -    | 636998                        |
|           |                          |                   | Mid  | 3624.99              | 641666                 | 3542.91       | 636194                            | 102                     |                    | -    | 641330                        |
|           |                          |                   | High | 3690                 | 646000                 | 3318.48       | 621232                            | 504                     |                    | -    | 645664                        |
| 40        | 51                       | Downlink & Uplink | Low  | 3570                 | 638000                 | 3551.64       | 636776                            | 0                       | 30                 | -    | 637016                        |
|           |                          |                   | Mid  | 3624.99              | 641666                 | 3533.19       | 635546                            | 102                     |                    | -    | 640682                        |
|           |                          |                   | High | 3679.98              | 645332                 | 3298.74       | 619916                            | 504                     |                    | -    | 644348                        |
| 50        | 65                       | Downlink & Uplink | Low  | 3575.01              | 638334                 | 3551.61       | 636774                            | 0                       | 30                 | -    | 637014                        |
|           |                          |                   | Mid  | 3624.99              | 641666                 | 3528.15       | 635210                            | 102                     |                    | -    | 640346                        |
|           |                          |                   | High | 3675                 | 645000                 | 3288.72       | 619248                            | 504                     |                    | -    | 643680                        |
| 60        | 79                       | Downlink & Uplink | Low  | 3580.02              | 638668                 | 3551.58       | 636772                            | 0                       | 30                 | -    | 637012                        |
|           |                          |                   | Mid  | 3624.99              | 641666                 | 3523.11       | 634874                            | 102                     |                    | -    | 640010                        |
|           |                          |                   | High | 3669.99              | 644666                 | 3278.67       | 618578                            | 504                     |                    | -    | 643010                        |
| 80        | 107                      | Downlink & Uplink | Low  | 3590.01              | 639334                 | 3551.49       | 636766                            | 0                       | 30                 | -    | 637006                        |
|           |                          |                   | Mid  | 3624.99              | 641666                 | 3513.03       | 634202                            | 102                     |                    | -    | 639338                        |
|           |                          |                   | High | 3660                 | 644000                 | 3258.6        | 617240                            | 504                     |                    | -    | 641672                        |
| 90        | 121                      | Downlink & Uplink | Low  | 3595.02              | 639668                 | 3551.46       | 636764                            | 0                       | 30                 | -    | 637004                        |
|           |                          |                   | Mid  | 3624.99              | 641666                 | 3507.99       | 633866                            | 102                     |                    | -    | 639002                        |
|           |                          |                   | High | 3654.99              | 643666                 | 3248.55       | 616570                            | 504                     |                    | -    | 641002                        |
| 100       | 135                      | Downlink & Uplink | Low  | 3600                 | 640000                 | 3551.4        | 636760                            | 0                       | 30                 | -    | 637000                        |
|           |                          |                   | Mid  | 3624.99              | 641666                 | 3502.95       | 633530                            | 102                     |                    | -    | 638666                        |
|           |                          |                   | High | 3649.98              | 643332                 | 3238.5        | 615900                            | 504                     |                    | -    | 640332                        |

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ ,  $controlResourceSetZero = 0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).

4.3.1.1.49 FFS

4.3.1.1.50 Reference test frequencies for NR operating band n50

**Table 4.3.1.1.50-1: Test frequencies for NR operating band n50 and SCS 15 kHz**

| <b>CBW [MHz]</b>  | <b>carrier Bandwidth [PRBs]</b> | <b>Range</b>      |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absolute FrequencyPoint A [ARFCN]</b> | <b>offsetTo Carrier [Carrier PRBs]</b> | <b>SS block SCS [kHz]</b> | <b>GSCN</b> | <b>absolute FrequencySSB [ARFCN]</b> | <b><math>k_{SSB}</math></b> | <b>Offset Carrier CORE SET#0 [RBs] Note 2</b> | <b>CORE SET#0 Index (Offset [RBs])</b> | <b>offsetToPointA (SIB1) [PRBs] Note 1</b> |
|---|---------------------------------|-------------------|------|-----------------------------|-------------------------------|----------------------|--|--|---------------------------|-------------|--------------------------------------|-----------------------------|---|--|--|
| 5   | 25                              | Downlink & Uplink | Low  | 1434.5                      | 286900                        | 1432.25              | 286450                                   | 0                                      | (Note 3)                  | -           | 287170                               | -                           | -   | -                                      | -  |
|   |                                 |                   | Mid  | 1474.5                      | 294900                        | 1453.89              | 290778                                   | 102                                    |                           | -           | 295170                               | -                           | -   | -                                      | -  |
|   |                                 |                   | High | 1514.5                      | 302900                        | 1421.53              | 284306                                   | 504                                    |                           | -           | 303170                               | -                           | -   | -                                      | -  |
| 10  | 52                              | Downlink & Uplink | Low  | 1437                        | 287400                        | 1432.32              | 286464                                   | 0                                      | 30                        | 3591        | 287310                               | 6                           | 1   | 0 (2)                                  | 3  |
|   |                                 |                   | Mid  | 1474.5                      | 294900                        | 1451.46              | 290292                                   | 102                                    |                           | 3687        | 294990                               | 6                           | 2   | 1 (6)                                  | 110  |
|   |                                 |                   | High | 1512                        | 302400                        | 1416.6               | 283320                                   | 504                                    |                           | 3780        | 302430                               | 10                          | 0   | 1 (6)                                  | 510  |
| 15  | 79                              | Downlink & Uplink | Low  | 1439.5                      | 287900                        | 1432.39              | 286478                                   | 0                                      | 30                        | 3592        | 287330                               | 8                           | 1   | 0 (2)                                  | 3  |
|   |                                 |                   | Mid  | 1474.5                      | 294900                        | 1449.03              | 289806                                   | 102                                    |                           | 3678        | 294270                               | 0                           | 0   | 0 (2)                                  | 104  |
|   |                                 |                   | High | 1509.5                      | 301900                        | 1411.67              | 282334                                   | 504                                    |                           | 3767        | 301450                               | 0                           | 1   | 1 (6)                                  | 511  |
| 20  | 106                             | Downlink & Uplink | Low  | 1442                        | 288400                        | 1432.46              | 286492                                   | 0                                      | 30                        | 3590        | 287290                               | 2                           | 0   | 0 (2)                                  | 2  |
|   |                                 |                   | Mid  | 1474.5                      | 294900                        | 1446.6               | 289320                                   | 102                                    |                           | 3672        | 293790                               | 2                           | 0   | 0 (2)                                  | 104  |
|   |                                 |                   | High | 1507                        | 301400                        | 1406.74              | 281348                                   | 504                                    |                           | 3754        | 300290                               | 2                           | 0   | 0 (2)                                  | 506  |
| 40  | 216                             | Downlink & Uplink | Low  | 1452                        | 290400                        | 1432.56              | 286512                                   | 0                                      | 30                        | 3591        | 287310                               | 2                           | 0   | 0 (2)                                  | 2  |
|   |                                 |                   | Mid  | 1474.5                      | 294900                        | 1436.7               | 287340                                   | 102                                    |                           | 3648        | 291870                               | 10                          | 1   | 0 (2)                                  | 105  |
|   |                                 |                   | High | 1497                        | 299400                        | 1386.84              | 277368                                   | 504                                    |                           | 3705        | 296430                               | 6                           | 3   | 0 (2)                                  | 509  |
| 50  | 270                             | Downlink & Uplink | Low  | 1457                        | 291400                        | 1432.7               | 286540                                   | 0                                      | 30                        | 3593        | 287530                               | 6                           | 1   | 1 (6)                                  | 7  |
|   |                                 |                   | Mid  | 1474.5                      | 294900                        | 1431.84              | 286368                                   | 102                                    |                           | 3636        | 290910                               | 2                           | 2   | 0 (2)                                  | 106  |
|   |                                 |                   | High | 1492                        | 298400                        | 1376.98              | 275396                                   | 504                                    |                           | 3682        | 294530                               | 6                           | 1   | 1 (6)                                  | 511  |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 3: No SS/PBCH block fits within the channel bandwidth. The channel bandwidth can only be used as SCell</p> |                                 |                   |      |                             |                               |                      |  |  |                           |             |                                      |                             |   |  |  |

Table 4.3.1.1.1.50-2: Test frequencies for NR operating band n50 and SCS 30 kHz

| CBW [MHz]      | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 Index [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|----------------|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|-------------------------------------|
| 10             | 24                       | Downlink & Uplink | Low  | 1437                 | 287400                 | 1432.68       | 286536                            | 0                               | 30                 | 3591 | 287310                        | 18        | 0  | 0 (0)                                  | 0                                   |
|                |                          |                   | Mid  | 1474.5               | 294900                 | 1433.46       | 286692                            | 102                             |                    | 3687 | 294990                        | 6         | 0  | 3 (3)                                  | 210                                 |
|                |                          |                   | High | 1512                 | 302400                 | 1326.24       | 265248                            | 504                             |                    | 3780 | 302430                        | 10        | 0  | 2 (2)                                  | 1012                                |
| 15             | 38                       | Downlink & Uplink | Low  | 1439.5               | 287900                 | 1432.66       | 286532                            | 0                               | 30                 | 3592 | 287330                        | 2         | 0  | 1 (1)                                  | 2                                   |
|                |                          |                   | Mid  | 1474.5               | 294900                 | 1430.94       | 286188                            | 102                             |                    | 3678 | 294270                        | 6         | 0  | 0 (0)                                  | 204                                 |
|                |                          |                   | High | 1509.5               | 301900                 | 1321.22       | 264244                            | 504                             |                    | 3767 | 301450                        | 18        | 0  | 2 (2)                                  | 1012                                |
| 20             | 51                       | Downlink & Uplink | Low  | 1442                 | 288400                 | 1432.82       | 286564                            | 0                               | 30                 | 3590 | 287290                        | 2         | 0  | 0 (0)                                  | 0                                   |
|                |                          |                   | Mid  | 1474.5               | 294900                 | 1428.6        | 285720                            | 102                             |                    | 3672 | 293790                        | 2         | 0  | 0 (0)                                  | 204                                 |
|                |                          |                   | High | 1507                 | 301400                 | 1316.38       | 263276                            | 504                             |                    | 3754 | 300290                        | 2         | 0  | 0 (0)                                  | 1008                                |
| 40             | 106                      | Downlink & Uplink | Low  | 1452                 | 290400                 | 1432.92       | 286584                            | 0                               | 30                 | 3591 | 287310                        | 2         | 0  | 0 (0)                                  | 0                                   |
|                |                          |                   | Mid  | 1474.5               | 294900                 | 1418.7        | 283740                            | 102                             |                    | 3648 | 291870                        | 22        | 0  | 0 (0)                                  | 204                                 |
|                |                          |                   | High | 1497                 | 299400                 | 1296.48       | 259296                            | 504                             |                    | 3705 | 296430                        | 18        | 0  | 1 (1)                                  | 1010                                |
| 50             | 133                      | Downlink & Uplink | Low  | 1457                 | 291400                 | 1433.06       | 286612                            | 0                               | 30                 | 3593 | 287530                        | 18        | 0  | 2 (2)                                  | 4                                   |
|                |                          |                   | Mid  | 1474.5               | 294900                 | 1413.84       | 282768                            | 102                             |                    | 3636 | 290910                        | 2         | 0  | 1 (1)                                  | 206                                 |
|                |                          |                   | High | 1492                 | 298400                 | 1286.62       | 257324                            | 504                             |                    | 3682 | 294530                        | 18        | 0  | 2 (2)                                  | 1012                                |
| 60             | 162                      | Downlink & Uplink | Low  | 1462                 | 292400                 | 1432.84       | 286568                            | 0                               | 30                 | 3592 | 287330                        | 14        | 0  | 0 (0)                                  | 0                                   |
|                |                          |                   | Mid  | 1474.5               | 294900                 | 1408.62       | 281724                            | 102                             |                    | 3624 | 289950                        | 6         | 0  | 2 (2)                                  | 208                                 |
|                |                          |                   | High | 1487                 | 297400                 | 1276.4        | 255280                            | 504                             |                    | 3653 | 292330                        | 14        | 0  | 0 (0)                                  | 1008                                |
| 80<br>(Note 3) | 217                      | Downlink          | Low  | 1472                 | 294400                 | 1432.94       | 286588                            | 0                               | 30                 | 3593 | 287530                        | 2         | 0  | 3 (3)                                  | 6                                   |
|                |                          |                   | Mid  | 1474.5               | 294900                 | 1398.72       | 279744                            | 102                             |                    | 3600 | 288030                        | 2         | 0  | 3 (3)                                  | 210                                 |
|                |                          |                   | High | 1477                 | 295400                 | 1256.5        | 251300                            | 504                             |                    | 3607 | 288530                        | 2         | 0  | 3 (3)                                  | 1014                                |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 3: This UE channel bandwidth is applicable only to downlink (TS 38.101-1 table 5.3.5-1).

Table 4.3.1.1.150-3: Test frequencies for NR operating band n50 and SCS 60 kHz without CORESET#0

| CBW [MHz]      | carrierBand width [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPointA [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|----------------|--------------------------|-------------------|------|----------------------|------------------------|---------------|---------------------------------|-------------------------|--------------------|------|-------------------------------|
| 10             | 11                       | Downlink & Uplink | Low  | 1437                 | 287400                 | 1433.04       | 286608                          | 0                       | 30                 | -    | 287328                        |
|                |                          |                   | Mid  | 1474.5               | 294900                 | 1397.1        | 279420                          | 102                     |                    | -    | 294828                        |
|                |                          |                   | High | 1512                 | 302400                 | 1145.16       | 229032                          | 504                     |                    | -    | 302328                        |
| 15             | 18                       | Downlink & Uplink | Low  | 1439.5               | 287900                 | 1433.02       | 286604                          | 0                       | 30                 | -    | 287324                        |
|                |                          |                   | Mid  | 1474.5               | 294900                 | 1394.58       | 278916                          | 102                     |                    | -    | 294324                        |
|                |                          |                   | High | 1509.5               | 301900                 | 1140.14       | 228028                          | 504                     |                    | -    | 301324                        |
| 20             | 24                       | Downlink & Uplink | Low  | 1442                 | 288400                 | 1433.36       | 286672                          | 0                       | 30                 | -    | 287392                        |
|                |                          |                   | Mid  | 1474.5               | 294900                 | 1392.42       | 278484                          | 102                     |                    | -    | 293892                        |
|                |                          |                   | High | 1507                 | 301400                 | 1135.48       | 227096                          | 504                     |                    | -    | 300392                        |
| 40             | 51                       | Downlink & Uplink | Low  | 1452                 | 290400                 | 1433.64       | 286728                          | 0                       | 30                 | -    | 287448                        |
|                |                          |                   | Mid  | 1474.5               | 294900                 | 1382.7        | 276540                          | 102                     |                    | -    | 291948                        |
|                |                          |                   | High | 1497                 | 299400                 | 1115.76       | 223152                          | 504                     |                    | -    | 296448                        |
| 50             | 65                       | Downlink & Uplink | Low  | 1457                 | 291400                 | 1433.6        | 286720                          | 0                       | 30                 | -    | 287440                        |
|                |                          |                   | Mid  | 1474.5               | 294900                 | 1377.66       | 275532                          | 102                     |                    | -    | 290940                        |
|                |                          |                   | High | 1492                 | 298400                 | 1105.72       | 221144                          | 504                     |                    | -    | 294440                        |
| 60             | 79                       | Downlink & Uplink | Low  | 1462                 | 292400                 | 1433.56       | 286712                          | 0                       | 30                 | -    | 287432                        |
|                |                          |                   | Mid  | 1474.5               | 294900                 | 1372.62       | 274524                          | 102                     |                    | -    | 289932                        |
|                |                          |                   | High | 1487                 | 297400                 | 1095.68       | 219136                          | 504                     |                    | -    | 292432                        |
| 80<br>(Note 2) | 107                      | Downlink          | Low  | 1472                 | 294400                 | 1433.48       | 286696                          | 0                       | 30                 | -    | 287416                        |
|                |                          |                   | Mid  | 1474.5               | 294900                 | 1362.54       | 272508                          | 102                     |                    | -    | 287916                        |
|                |                          |                   | High | 1477                 | 295400                 | 1075.6        | 215120                          | 504                     |                    | -    | 288416                        |

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ ,  $controlResourceSetZero=0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).

Note 2: This UE channel bandwidth is applicable only to downlink (TS 38.101-1 table 5.3.5-1).

## 4.3.1.1.1.51 Reference test frequencies for NR operating band n51

**Table 4.3.1.1.51-1: Test frequencies for NR operating band n51 and SCS 15 kHz**

| [MHz] | <i>carrier Bandwidth [PRBs]</i> | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | <i>absolute FrequencyPoint A [ARFCN]</i> | <i>offsetTo Carrier [Carrier PRBs]</i> | SS block SCS [kHz] | GSCN | <i>absolute FrequencySSB [ARFCN]</i> | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | <i>offsetToPointA (SIB1) [PRBs]</i> Note 1 |
|-------|---------------------------------|-------------------|------|----------------------|------------------------|---------------|--|--|--------------------|------|--------------------------------------|-----------|--|--|--|
| 5     | 25                              | Downlink & Uplink | Low  | 1429.5               | 285900                 | 1336.53       | 267306                                   | 504                                    | 15                 | 3573 | 285870                               | 8         | 1                                      | 0 (0)                                  | 505  |
|       |                                 |                   | Mid  |                      |                        |               |  |  |                    |      |                                      |           |  |  |  |
|       |                                 |                   | High |                      |                        |               |  |  |                    |      |                                      |           |  |  |  |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

4.3.1.1.52 FFS

4.3.1.1.53 Reference test frequencies for NR operating band n53

**Table 4.3.1.1.53-1: Test frequencies for NR operating band n53 and SCS 15 kHz**

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|---|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------|--|-------------------------------------|
| 5   | 25                       | Downlink & Uplink | Low  | 2486                 | 497200                 | 2483.75       | 496750                            | 0                               | 15                 | 6215 | 497290                        | 0         | 0                               | 0 (0)                                  | 5                                   |
|   |                          |                   | Mid  | 2489.3               | 497860                 | 2468.69       | 493738                            | 102                             |                    | 6221 | 497770                        | 0         | 0                               | 0 (0)                                  | 102                                 |
|   |                          |                   | High | 2492.5               | 498500                 | 2399.53       | 479906                            | 504                             |                    | 6232 | 498530                        | 4         | 1                               | 1 (2)                                  | 507                                 |
| 10  | 52                       | Downlink & Uplink | Low  | 2488.5               | 497700                 | 2483.82       | 496764                            | 0                               | 15                 | 6216 | 497310                        | 2         | 1                               | 2 (4)                                  | 5                                   |
|   |                          |                   | Mid  | 2489.3               | 497860                 | 2466.6        | 493252                            | 102                             |                    | 6215 | 497290                        | 2         | 0                               | 0 (0)                                  | 102                                 |
|   |                          |                   | High | 2490                 | 498000                 | 2394.6        | 478920                            | 504                             |                    | 6219 | 497550                        | 6         | 1                               | 1 (2)                                  | 507                                 |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |                   |      |                      |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                     |

**Table 4.3.1.1.53-2: Test frequencies for NR operating band n53 and SCS 30 kHz**

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|---|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------|--|-------------------------------------|
| 10  | 24                       | Downlink & Uplink | Low  | 2488.5               | 497700                 | 2484.18       | 496836                            | 0                               | 15                 | 6222 | 497790                        | 6         | 0                               | 3 (8)                                  | 16                                  |
|   |                          |                   | Mid  | 2489.3               | 497860                 | 2448.26       | 489652                            | 102                             |                    | 6221 | 497770                        | 18        | 0                               | 0 (5)                                  | 214                                 |
|   |                          |                   | High | 2490                 | 498000                 | 2304.24       | 460848                            | 504                             |                    | 6225 | 498030                        | 10        | 0                               | 2 (17)                                 | 1022                                |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |                   |      |                      |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                     |

**Table 4.3.1.1.53-3: Test frequencies for NR operating band n53 and SCS 60 kHz without CORESET#0**

| CBW [MHz]   | <i>carrierBand width</i> [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | <i>absoluteFrequencyPointA</i> [ARFCN] | <i>offsetToCarrier</i> [PRBs] | SS block SCS [kHz] | GSCN | <i>absolute FrequencySSB</i> [ARFCN] |
|---|---------------------------------|-------------------|------|----------------------|------------------------|---------------|--|-------------------------------|--------------------|------|--------------------------------------|
| 10  | 11                              | Downlink & Uplink | Low  | 2488.5               | 497700                 | 2484.54       | 496908                                 | 0                             | 15                 | -    | 497268                               |
|   |                                 |                   | Mid  | 2489.3               | 497860                 | 2411.9        | 482380                                 | 102                           |                    | -    | 497428                               |
|   |                                 |                   | High | 2490                 | 498000                 | 2123.16       | 424632                                 | 504                           |                    | -    | 497568                               |
| Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$ , $controlResourceSetZero = 0$ and $searchSpaceZero = 0$ (TS 38.213 [22], clause 13). |                                 |                   |      |                      |                        |               |  |                               |                    |      |                                      |

## 4.3.1.1.1.54 to 4.3.1.1.1.64 FFS

## 4.3.1.1.1.65 Reference test frequencies for NR operating band n65

Table 4.3.1.1.1.65-1: Test frequencies for NR operating band n65 and SCS 15 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] | CORESET#0 Index (Offset [RBs]) Note 2 | OffsetToPointA (SIB1) [PRBs] Note 1 |  |  |  |
|--|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--------------------------------|---------------------------------------|-------------------------------------|--|--|--|
| 5  | 25                       | Downlink | Low                  | 2112.5                 | 422500        | 2110.25                           | 422050                          | 0                  | 15   | 5279                          | 422410    | 0                              | 0                                     | 0 (0)                               |  |  |  |
|  |                          |          | Mid                  | 2155                   | 431000        | 2134.39                           | 426878                          | 102                |      | 5389                          | 431090    | 0                              | 1                                     | 2 (4)                               |  |  |  |
|  |                          |          | High                 | 2197.5                 | 439500        | 2104.53                           | 420906                          | 504                |      | 5493                          | 439470    | 8                              | 1                                     | 0 (0)                               |  |  |  |
|  |                          | Uplink   | Low                  | 1922.5                 | 384500        | 1920.25                           | 384050                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|  |                          |          | Mid                  | 1965                   | 393000        | 1872.03                           | 374406                          | 504                |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|  |                          |          | High                 | 2007.5                 | 401500        | 2004.17                           | 400834                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
| 10   | 52                       | Downlink | Low                  | 2115                   | 423000        | 2110.32                           | 422064                          | 0                  | 15   | 5280                          | 422430    | 2                              | 0                                     | 0 (0)                               |  |  |  |
|  |                          |          | Mid                  | 2155                   | 431000        | 2131.96                           | 426392                          | 102                |      | 5383                          | 430610    | 2                              | 1                                     | 2 (4)                               |  |  |  |
|  |                          |          | High                 | 2195                   | 439000        | 2099.6                            | 419920                          | 504                |      | 5480                          | 438490    | 10                             | 1                                     | 0 (0)                               |  |  |  |
|  |                          | Uplink   | Low                  | 1925                   | 385000        | 1920.32                           | 384064                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|  |                          |          | Mid                  | 1965                   | 393000        | 1869.6                            | 373920                          | 504                |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|  |                          |          | High                 | 2005                   | 401000        | 1999.24                           | 399848                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
| 15   | 79                       | Downlink | Low                  | 2117.5                 | 423500        | 2110.39                           | 422078                          | 0                  | 15   | 5281                          | 422450    | 4                              | 0                                     | 0 (0)                               |  |  |  |
|  |                          |          | Mid                  | 2155                   | 431000        | 2129.53                           | 425906                          | 102                |      | 5377                          | 430130    | 4                              | 1                                     | 2 (4)                               |  |  |  |
|  |                          |          | High                 | 2192.5                 | 438500        | 2094.67                           | 418934                          | 504                |      | 5470                          | 437570    | 8                              | 1                                     | 1 (2)                               |  |  |  |
|  |                          | Uplink   | Low                  | 1927.5                 | 385500        | 1920.39                           | 384078                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|  |                          |          | Mid                  | 1965                   | 393000        | 1867.17                           | 373434                          | 504                |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|  |                          |          | High                 | 2002.5                 | 400500        | 1994.31                           | 398862                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
| 20   | 106                      | Downlink | Low                  | 2120                   | 424000        | 2110.46                           | 422092                          | 0                  | 15   | 5282                          | 422650    | 6                              | 1                                     | 2 (4)                               |  |  |  |
|  |                          |          | Mid                  | 2155                   | 431000        | 2127.1                            | 425420                          | 102                |      | 5371                          | 429650    | 6                              | 1                                     | 2 (4)                               |  |  |  |
|  |                          |          | High                 | 2190                   | 438000        | 2089.74                           | 417948                          | 504                |      | 5457                          | 436590    | 10                             | 1                                     | 1 (2)                               |  |  |  |
|  |                          | Uplink   | Low                  | 1930                   | 386000        | 1920.46                           | 384092                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|  |                          |          | Mid                  | 1965                   | 393000        | 1864.74                           | 372948                          | 504                |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
|  |                          |          | High                 | 2000                   | 400000        | 1989.38                           | 397876                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   |  |  |  |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                |                                       |                                     |  |  |  |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{OffsetCORESET-0-Carrier}$ in Annex C expressed in number of common RBs.   |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                |                                       |                                     |  |  |  |

Table 4.3.1.1.1.65-2: Test frequencies for NR operating band n65 and SCS 30 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 Index [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|---|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|-------------------------------------|
| 10  | 24                       | Downlink | Low  | 2115                 | 423000                 | 2110.68       | 422136                            | 0                               | 15                 | 5286 | 422910                        | 18        | 0  | 0 (5)                                  | 10                                  |
|   |                          |          | Mid  | 2155                 | 431000                 | 2113.96       | 422792                            | 102                             |                    | 5389 | 431090                        | 6         | 0  | 3 (8)                                  | 220                                 |
|   |                          |          | High | 2195                 | 439000                 | 2009.24       | 401848                            | 504                             |                    | 5486 | 438970                        | 14        | 0  | 1 (6)                                  | 1020                                |
|   | Uplink                   | Uplink   | Low  | 1925                 | 385000                 | 1920.68       | 384136                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                   |
|   |                          |          | Mid  | 1965                 | 393000                 | 1779.24       | 355848                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                   |
|   |                          |          | High | 2005                 | 401000                 | 1998.52       | 399704                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                   |
|   | 38                       | Downlink | Low  | 2117.5               | 423500                 | 2110.66       | 422132                            | 0                               | 15                 | 5287 | 422930                        | 2         | 0  | 1 (6)                                  | 12                                  |
|   |                          |          | Mid  | 2155                 | 431000                 | 2111.44       | 422288                            | 102                             |                    | 5380 | 430370                        | 6         | 0  | 0 (5)                                  | 214                                 |
|   |                          |          | High | 2192.5               | 438500                 | 2004.22       | 400844                            | 504                             |                    | 5476 | 438050                        | 18        | 0  | 2 (7)                                  | 1022                                |
|   |                          | Uplink   | Low  | 1927.5               | 385500                 | 1920.66       | 384132                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                   |
|   |                          |          | Mid  | 1965                 | 393000                 | 1776.72       | 355344                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                   |
|   |                          |          | High | 2002.5               | 400500                 | 1993.5        | 398700                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                   |
|   | 51                       | Downlink | Low  | 2120                 | 424000                 | 2110.82       | 422164                            | 0                               | 15                 | 5285 | 422890                        | 2         | 0  | 0 (5)                                  | 10                                  |
|   |                          |          | Mid  | 2155                 | 431000                 | 2109.1        | 421820                            | 102                             |                    | 5374 | 429890                        | 2         | 0  | 0 (5)                                  | 214                                 |
|   |                          |          | High | 2190                 | 438000                 | 1999.38       | 399876                            | 504                             |                    | 5463 | 437070                        | 14        | 0  | 2 (7)                                  | 1022                                |
|   |                          | Uplink   | Low  | 1930                 | 386000                 | 1920.82       | 384164                            | 0                               | -                  | -    | -                             | -         | -  | -                                      | -                                   |
|   |                          |          | Mid  | 1965                 | 393000                 | 1774.38       | 354876                            | 504                             |                    | -    | -                             | -         | -  | -                                      | -                                   |
|   |                          |          | High | 2000                 | 400000                 | 1988.66       | 397732                            | 6                               |                    | -    | -                             | -         | -  | -                                      | -                                   |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |          |      |                      |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                     |

Table 4.3.1.1.1.65-3: Test frequencies for NR operating band n65 and SCS 60 kHz without CORESET#0

| CBW [MHz] | carrierBand width [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFC N] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|-----------|--------------------------|----------|------|----------------------|-------------------------|---------------|-----------------------------------|-------------------------|--------------------|------|-------------------------------|
| 10        | 11                       | Downlink | Low  | 2115                 | 423000                  | 2111.04       | 422208                            | 0                       | 15                 | -    | 422568                        |
|           |                          |          | Mid  | 2155                 | 431000                  | 2077.6        | 415520                            | 102                     |                    | -    | 430568                        |
|           |                          |          | High | 2195                 | 439000                  | 1828.16       | 365632                            | 504                     |                    | -    | 438568                        |
|           |                          | Uplink   | Low  | 1925                 | 385000                  | 1921.04       | 384208                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1965                 | 393000                  | 1598.16       | 319632                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 2005                 | 401000                  | 1996.72       | 399344                            | 6                       |                    | -    | -                             |
| 15        | 18                       | Downlink | Low  | 2117.5               | 423500                  | 2111.02       | 422204                            | 0                       | 15                 | -    | 422564                        |
|           |                          |          | Mid  | 2155                 | 431000                  | 2075.08       | 415016                            | 102                     |                    | -    | 430064                        |
|           |                          |          | High | 2192.5               | 438500                  | 1823.14       | 364628                            | 504                     |                    | -    | 437564                        |
|           |                          | Uplink   | Low  | 1927.5               | 385500                  | 1921.02       | 384204                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1965                 | 393000                  | 1595.64       | 319128                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 2002.5               | 400500                  | 1991.7        | 398340                            | 6                       |                    | -    | -                             |
| 20        | 24                       | Downlink | Low  | 2120                 | 424000                  | 2111.36       | 422272                            | 0                       | 15                 | -    | 422632                        |
|           |                          |          | Mid  | 2155                 | 431000                  | 2072.92       | 414584                            | 102                     |                    | -    | 429632                        |
|           |                          |          | High | 2190                 | 438000                  | 1818.48       | 363696                            | 504                     |                    | -    | 436632                        |
|           |                          | Uplink   | Low  | 1930                 | 386000                  | 1921.36       | 384272                            | 0                       | -                  | -    | -                             |
|           |                          |          | Mid  | 1965                 | 393000                  | 1593.48       | 318696                            | 504                     |                    | -    | -                             |
|           |                          |          | High | 2000                 | 400000                  | 1987.04       | 397408                            | 6                       |                    | -    | -                             |

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ ,  $controlResourceSetZero = 0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).

## 4.3.1.1.66

## Reference test frequencies for NR operating band n66

Table 4.3.1.1.66-1: Test frequencies for NR operating band n66, uplink and downlink channel bandwidth combinations and SCS 15 kHz

| UL/DL Band width combination | CBW [MHz] | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetTo PointA (SIB1) [PRBs] Note 1 |     |
|------------------------------|-----------|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|-----|
| 5/5                          | 5         | 25                       | Downlink | Low                  | 2112.5                 | 422500        | 2110.25                           | 422050                          | 0                  | 15   | 5279                          | 422410    | 0                                      | 0                                      | 0 (0)                                | 0   |
|                              |           |                          |          | Mid                  | 2145                   | 429000        | 2124.39                           | 424878                          | 102                |      | 5361                          | 428910    | 0                                      | 0                                      | 0 (0)                                | 102 |
|                              |           |                          |          | High                 | 2177.5                 | 435500        | 2084.53                           | 416906                          | 504                |      | 5443                          | 435410    | 0                                      | 0                                      | 0 (0)                                | 504 |
|                              | 5         | 25                       | Uplink   | Low                  | 1712.5                 | 342500        | 1710.25                           | 342050                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | Mid                  | 1745                   | 349000        | 1652.03                           | 330406                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | High                 | 1777.5                 | 355500        | 1774.17                           | 354834                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              | 20        | 106                      | Downlink | Low                  | 2120                   | 424000        | 2110.46                           | 422092                          | 0                  | 15   | 5282                          | 422650    | 6                                      | 1                                      | 2 (4)                                | 5   |
|                              |           |                          |          | Mid                  | 2152.5                 | 430500        | 2124.6                            | 424920                          | 102                |      | 5364                          | 429150    | 6                                      | 1                                      | 2 (4)                                | 107 |
|                              |           |                          |          | High                 | 2185                   | 437000        | 2084.74                           | 416948                          | 504                |      | 5446                          | 435650    | 6                                      | 1                                      | 2 (4)                                | 509 |
| 5/40                         | 40        | 216                      | Downlink | Low                  | 2130                   | 426000        | 2110.56                           | 422112                          | 0                  | 15   | 5283                          | 422670    | 6                                      | 1                                      | 2 (4)                                | 5   |
|                              |           |                          |          | Mid                  | 2155                   | 431000        | 2117.2                            | 423440                          | 102                |      | 5344                          | 427490    | 6                                      | 0                                      | 0 (0)                                | 102 |
|                              |           |                          |          | High                 | 2180                   | 436000        | 2069.84                           | 413968                          | 504                |      | 5405                          | 432490    | 6                                      | 0                                      | 0 (0)                                | 504 |
|                              | 5         | 25                       | Uplink   | Low                  | 1712.5                 | 342500        | 1710.25                           | 342050                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | Mid                  | 1737.5                 | 347500        | 1644.53                           | 328906                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | High                 | 1762.5                 | 352500        | 1759.17                           | 351834                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
| 10/10                        | 10        | 52                       | Downlink | Low                  | 2115                   | 423000        | 2110.32                           | 422064                          | 0                  | 15   | 5280                          | 422430    | 2                                      | 0                                      | 0 (0)                                | 0   |
|                              |           |                          |          | Mid                  | 2145                   | 429000        | 2121.96                           | 424392                          | 102                |      | 5355                          | 428430    | 2                                      | 0                                      | 0 (0)                                | 102 |
|                              |           |                          |          | High                 | 2175                   | 435000        | 2079.6                            | 415920                          | 504                |      | 5430                          | 434430    | 2                                      | 0                                      | 0 (0)                                | 504 |
|                              | 10        | 52                       | Uplink   | Low                  | 1715                   | 343000        | 1710.32                           | 342064                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | Mid                  | 1745                   | 349000        | 1649.6                            | 329920                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | High                 | 1775                   | 355000        | 1769.24                           | 353848                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
| 10/20                        | 20        | 106                      | Downlink | Low                  | 2120                   | 424000        | 2110.46                           | 422092                          | 0                  | 15   | 5282                          | 422650    | 6                                      | 1                                      | 2 (4)                                | 5   |
|                              |           |                          |          | Mid                  | 2150                   | 430000        | 2122.1                            | 424420                          | 102                |      | 5357                          | 428650    | 6                                      | 1                                      | 2 (4)                                | 107 |
|                              |           |                          |          | High                 | 2180                   | 436000        | 2079.74                           | 415948                          | 504                |      | 5432                          | 434650    | 6                                      | 1                                      | 2 (4)                                | 509 |
|                              | 10        | 52                       | Uplink   | Low                  | 1715                   | 343000        | 1710.32                           | 342064                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | Mid                  | 1745                   | 349000        | 1649.6                            | 329920                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | High                 | 1775                   | 355000        | 1769.24                           | 353848                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
| 10/40                        | 40        | 216                      | Downlink | Low                  | 2130                   | 426000        | 2110.56                           | 422112                          | 0                  | 15   | 5283                          | 422670    | 6                                      | 1                                      | 2 (4)                                | 5   |
|                              |           |                          |          | Mid                  | 2155                   | 431000        | 2117.2                            | 423440                          | 102                |      | 5344                          | 427490    | 6                                      | 0                                      | 0 (0)                                | 102 |
|                              |           |                          |          | High                 | 2180                   | 436000        | 2069.84                           | 413968                          | 504                |      | 5405                          | 432490    | 6                                      | 0                                      | 0 (0)                                | 504 |

|       |    |     |          |      |        |        |         |        |     |    |      |        |    |   |       |     |   |
|-------|----|-----|----------|------|--------|--------|---------|--------|-----|----|------|--------|----|---|-------|-----|---|
|       | 10 | 52  | Uplink   | Low  | 1715   | 343000 | 1710.32 | 342064 | 0   |    | -    | -      | -  | - | -     | -   | - |
|       |    |     |          | Mid  | 1740   | 348000 | 1644.6  | 328920 | 504 |    | -    | -      | -  | - | -     | -   | - |
|       |    |     |          | High | 1765   | 353000 | 1759.24 | 351848 | 6   |    | -    | -      | -  | - | -     | -   | - |
| 15/15 | 15 | 79  | Downlink | Low  | 2117.5 | 423500 | 2110.39 | 422078 | 0   | 15 | 5281 | 422450 | 4  | 0 | 0 (0) | 0   | 0 |
|       |    |     |          | Mid  | 2145   | 429000 | 2119.53 | 423906 | 102 |    | 5349 | 427950 | 4  | 0 | 0 (0) | 102 |   |
|       |    |     |          | High | 2172.5 | 434500 | 2074.67 | 414934 | 504 |    | 5417 | 433450 | 4  | 0 | 0 (0) | 504 |   |
|       | 15 | 79  | Uplink   | Low  | 1717.5 | 343500 | 1710.39 | 342078 | 0   |    | -    | -      | -  | - | -     | -   | - |
|       |    |     |          | Mid  | 1745   | 349000 | 1647.17 | 329434 | 504 |    | -    | -      | -  | - | -     | -   | - |
|       |    |     |          | High | 1772.5 | 354500 | 1764.31 | 352862 | 6   |    | -    | -      | -  | - | -     | -   | - |
| 20/20 | 20 | 106 | Downlink | Low  | 2120   | 424000 | 2110.46 | 422092 | 0   | 15 | 5282 | 422650 | 6  | 1 | 2 (4) | 5   |   |
|       |    |     |          | Mid  | 2145   | 429000 | 2117.1  | 423420 | 102 |    | 5343 | 427470 | 6  | 0 | 0 (0) | 102 |   |
|       |    |     |          | High | 2170   | 434000 | 2069.74 | 413948 | 504 |    | 5407 | 432530 | 2  | 0 | 1 (2) | 506 |   |
|       | 20 | 106 | Uplink   | Low  | 1720   | 344000 | 1710.46 | 342092 | 0   |    | -    | -      | -  | - | -     | -   | - |
|       |    |     |          | Mid  | 1745   | 349000 | 1644.74 | 328948 | 504 |    | -    | -      | -  | - | -     | -   | - |
|       |    |     |          | High | 1770   | 354000 | 1759.38 | 351876 | 6   |    | -    | -      | -  | - | -     | -   | - |
| 20/40 | 40 | 216 | Downlink | Low  | 2130   | 426000 | 2110.56 | 422112 | 0   | 15 | 5283 | 422670 | 6  | 6 | 2 (4) | 5   |   |
|       |    |     |          | Mid  | 2155   | 431000 | 2117.2  | 423440 | 102 |    | 5344 | 427490 | 6  | 0 | 0 (0) | 102 |   |
|       |    |     |          | High | 2180   | 436000 | 2069.84 | 413968 | 504 |    | 5405 | 432490 | 6  | 0 | 0 (0) | 504 |   |
|       | 20 | 106 | Uplink   | Low  | 1720   | 344000 | 1710.46 | 342092 | 0   |    | -    | -      | -  | - | -     | -   | - |
|       |    |     |          | Mid  | 1745   | 349000 | 1644.74 | 328948 | 504 |    | -    | -      | -  | - | -     | -   | - |
|       |    |     |          | High | 1770   | 354000 | 1759.38 | 351876 | 6   |    | -    | -      | -  | - | -     | -   | - |
| 25/25 | 25 | 133 | Downlink | Low  | 2122.5 | 424500 | 2110.53 | 422106 | 0   | 15 | 5283 | 422670 | 8  | 1 | 2 (4) | 5   |   |
|       |    |     |          | Mid  | 2145   | 429000 | 2114.67 | 422934 | 102 |    | 5337 | 426990 | 8  | 0 | 0 (0) | 102 |   |
|       |    |     |          | High | 2167.5 | 433500 | 2064.81 | 412962 | 504 |    | 5394 | 431550 | 4  | 0 | 1 (2) | 506 |   |
|       | 25 | 133 | Uplink   | Low  | 1722.5 | 344500 | 1710.53 | 342106 | 0   |    | -    | -      | -  | - | -     | -   | - |
|       |    |     |          | Mid  | 1745   | 349000 | 1642.31 | 328462 | 504 |    | -    | -      | -  | - | -     | -   | - |
|       |    |     |          | High | 1767.5 | 353500 | 1754.45 | 350890 | 6   |    | -    | -      | -  | - | -     | -   | - |
| 30/30 | 30 | 160 | Downlink | Low  | 2125   | 425000 | 2110.6  | 422120 | 0   | 15 | 5284 | 422690 | 10 | 1 | 2 (4) | 5   |   |
|       |    |     |          | Mid  | 2145   | 429000 | 2112.24 | 422448 | 102 |    | 5331 | 426510 | 10 | 0 | 0 (0) | 102 |   |
|       |    |     |          | High | 2165   | 433000 | 2059.88 | 411976 | 504 |    | 5381 | 430570 | 6  | 0 | 1 (2) | 506 |   |
|       | 30 | 160 | Uplink   | Low  | 1725   | 345000 | 1710.6  | 342120 | 0   |    | -    | -      | -  | - | -     | -   | - |
|       |    |     |          | Mid  | 1745   | 349000 | 1639.88 | 327976 | 504 |    | -    | -      | -  | - | -     | -   | - |
|       |    |     |          | High | 1765   | 353000 | 1749.52 | 349904 | 6   |    | -    | -      | -  | - | -     | -   | - |
| 40/40 | 40 | 216 | Downlink | Low  | 2130   | 426000 | 2110.56 | 422112 | 0   | 15 | 5283 | 422670 | 6  | 1 | 2 (4) | 5   |   |
|       |    |     |          | Mid  | 2145   | 429000 | 2107.2  | 421440 | 102 |    | 5319 | 425550 | 2  | 0 | 1 (2) | 104 |   |
|       |    |     |          | High | 2160   | 432000 | 2049.84 | 409968 | 504 |    | 5358 | 428670 | 6  | 1 | 2 (4) | 509 |   |
|       | 40 | 216 | Uplink   | Low  | 1730   | 346000 | 1710.56 | 342112 | 0   |    | -    | -      | -  | - | -     | -   | - |
|       |    |     |          | Mid  | 1745   | 349000 | 1634.84 | 326968 | 504 |    | -    | -      | -  | - | -     | -   | - |
|       |    |     |          | High | 1760   | 352000 | 1739.48 | 347896 | 6   |    | -    | -      | -  | - | -     | -   | - |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter

$\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

**Table 4.3.1.1.166-1A: Test frequencies for NR operating band n66 and asymmetric channel bandwidth combination set 1, uplink and downlink channel bandwidth combination and SCS 15 kHz**

| UL/DL Band width combination | CBW [MHz] | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz]   | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetTo PointA (SIB1) [PRBs] Note 1 |  |
|------------------------------|-----------|--------------------------|----------|------|--|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|--|
| 5/20                         | 20        | 106                      | Downlink | Low  | Same as for UL/DLBandwidth combination 5/20 in Table 4.3.1.1.166-1.  |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                      |  |
|                              | 5         | 25                       | Uplink   | Low  |  |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                      |  |
| 5/25                         | 25        | 133                      | Downlink | Low  | 2122.5   | 424500                 | 2110.53       | 422106                            | 0                               | 15                 | 5283 | 422670                        | 8         | 1                                      | 2 (4)                                  | 5                                    |  |
|                              |           |                          |          | Mid  | 2155   | 431000                 | 2124.67       | 424934                            | 102                             |                    | 5365 | 429170                        | 8         | 1                                      | 2 (4)                                  | 107                                  |  |
|                              |           |                          |          | High | 2187.5   | 437500                 | 2084.81       | 416962                            | 504                             |                    | 5444 | 435610                        | 0         | 0                                      | 2 (4)                                  | 508                                  |  |
|                              | 5         | 25                       | Uplink   | Low  | 1712.5   | 342500                 | 1710.25       | 342050                            | 0                               | -                  | -    | -                             | -         | -                                      | -                                      | -                                    |  |
|                              |           |                          |          | Mid  | 1745   | 349000                 | 1652.03       | 330406                            | 504                             |                    | -    | -                             | -         | -                                      | -                                      | -                                    |  |
|                              |           |                          |          | High | 1777.5   | 355500                 | 1774.17       | 354834                            | 6                               |                    | -    | -                             | -         | -                                      | -                                      | -                                    |  |
| 5/30                         | 30        | 160                      | Downlink | Low  | 2125   | 425000                 | 2110.6        | 422120                            | 0                               | 15                 | 5284 | 422690                        | 10        | 1                                      | 2 (4)                                  | 5                                    |  |
|                              |           |                          |          | Mid  | 2155   | 431000                 | 2122.24       | 424448                            | 102                             |                    | 5359 | 428690                        | 10        | 1                                      | 2 (4)                                  | 107                                  |  |
|                              |           |                          |          | High | 2185   | 437000                 | 2079.88       | 415976                            | 504                             |                    | 5434 | 434690                        | 10        | 1                                      | 2 (4)                                  | 509                                  |  |
|                              | 5         | 25                       | Uplink   | Low  | 1712.5   | 342500                 | 1710.25       | 342050                            | 0                               | -                  | -    | -                             | -         | -                                      | -                                      | -                                    |  |
|                              |           |                          |          | Mid  | 1742.5   | 348500                 | 1649.53       | 329906                            | 504                             |                    | -    | -                             | -         | -                                      | -                                      | -                                    |  |
|                              |           |                          |          | High | 1772.5   | 354500                 | 1769.17       | 353834                            | 6                               |                    | -    | -                             | -         | -                                      | -                                      | -                                    |  |
| 5/40                         | 40        | 216                      | Downlink | Low  | Same as for UL/DLBandwidth combination 5/40 in Table 4.3.1.1.166-1.  |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                      |  |
|                              | 5         | 25                       | Uplink   | Low  |  |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                      |  |
| 10/20                        | 20        | 106                      | Downlink | Low  | Same as for UL/DLBandwidth combination 10/20 in Table 4.3.1.1.166-1. |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                      |  |
|                              | 10        | 52                       | Uplink   | Low  |  |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                      |  |
| 10/25                        | 25        | 133                      | Downlink | Low  | 2122.5   | 424500                 | 2110.53       | 422106                            | 0                               | 15                 | 5283 | 422670                        | 8         | 1                                      | 2 (4)                                  | 5                                    |  |
|                              |           |                          |          | Mid  | 2152.5   | 430500                 | 2122.17       | 424434                            | 102                             |                    | 5358 | 428670                        | 8         | 1                                      | 2 (4)                                  | 107                                  |  |
|                              |           |                          |          | High | 2182.5   | 436500                 | 2079.81       | 415962                            | 504                             |                    | 5433 | 434670                        | 8         | 1                                      | 2 (4)                                  | 509                                  |  |
|                              | 10        | 52                       | Uplink   | Low  | 1715   | 343000                 | 1710.32       | 342064                            | 0                               | -                  | -    | -                             | -         | -                                      | -                                      | -                                    |  |
|                              |           |                          |          | Mid  | 1745   | 349000                 | 1649.6        | 329920                            | 504                             |                    | -    | -                             | -         | -                                      | -                                      | -                                    |  |
|                              |           |                          |          | High | 1775   | 355000                 | 1769.24       | 353848                            | 6                               |                    | -    | -                             | -         | -                                      | -                                      | -                                    |  |
| 10/30                        | 30        | 160                      | Downlink | Low  | 2125   | 425000                 | 2110.6        | 422120                            | 0                               | 15                 | 5284 | 422690                        | 10        | 1                                      | 2 (4)                                  | 5                                    |  |
|                              |           |                          |          | Mid  | 2155   | 431000                 | 2122.24       | 424448                            | 102                             |                    | 5359 | 428690                        | 10        | 1                                      | 2 (4)                                  | 107                                  |  |
|                              |           |                          |          | High | 2185   | 437000                 | 2079.88       | 415976                            | 504                             |                    | 5434 | 434690                        | 10        | 1                                      | 2 (4)                                  | 509                                  |  |
|                              | 10        | 52                       | Uplink   | Low  | 1715   | 343000                 | 1710.32       | 342064                            | 0                               | -                  | -    | -                             | -         | -                                      | -                                      | -                                    |  |
|                              |           |                          |          | Mid  | 1745   | 349000                 | 1649.6        | 329920                            | 504                             |                    | -    | -                             | -         | -                                      | -                                      | -                                    |  |
|                              |           |                          |          | High | 1775   | 355000                 | 1769.24       | 353848                            | 6                               |                    | -    | -                             | -         | -                                      | -                                      | -                                    |  |
| 10/40                        | 40        | 216                      | Downlink | Low  | Same as for UL/DLBandwidth combination 10/40 in Table 4.3.1.1.166-1. |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                      |  |
|                              | 10        | 52                       | Uplink   | Low  |  |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                      |  |
| 20/40                        | 40        | 216                      | Downlink | Low  | Same as for UL/DLBandwidth combination 20/40 in Table 4.3.1.1.166-1. |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                      |  |
|                              | 20        | 106                      | Uplink   | Low  |  |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                      |  |

|       |    |     |          |      |        |        |         |        |     |    |      |        |    |   |       |     |
|-------|----|-----|----------|------|--------|--------|---------|--------|-----|----|------|--------|----|---|-------|-----|
| 25/40 | 40 | 216 | Downlink | Low  | 2130   | 426000 | 2110.56 | 422112 | 0   | 15 | 5283 | 422670 | 6  | 1 | 2 (4) | 5   |
|       |    |     |          | Mid  | 2152.5 | 430500 | 2114.7  | 422940 | 102 |    | 5337 | 426990 | 6  | 0 | 0 (0) | 102 |
|       |    |     |          | High | 2175   | 435000 | 2064.84 | 412968 | 504 |    | 5394 | 431550 | 2  | 0 | 1 (2) | 506 |
|       | 25 | 133 | Uplink   | Low  | 1722.5 | 344500 | 1710.53 | 342106 | 0   | -  | -    | -      | -  | - | -     | -   |
|       |    |     |          | Mid  | 1745   | 349000 | 1642.31 | 328462 | 504 |    | -    | -      | -  | - | -     | -   |
|       |    |     |          | High | 1767.5 | 353500 | 1754.45 | 350890 | 6   |    | -    | -      | -  | - | -     | -   |
| 30/40 | 40 | 216 | Downlink | Low  | 2130   | 426000 | 2110.56 | 422112 | 0   | 15 | 5283 | 422670 | 6  | 1 | 2 (4) | 5   |
|       |    |     |          | Mid  | 2150   | 430000 | 2112.2  | 422440 | 102 |    | 5330 | 426490 | 6  | 0 | 0 (0) | 102 |
|       |    |     |          | High | 2170   | 434000 | 2059.84 | 411968 | 504 |    | 5383 | 430610 | 10 | 1 | 1 (2) | 507 |
|       | 30 | 160 | Uplink   | Low  | 1725   | 345000 | 1710.6  | 342120 | 0   | -  | -    | -      | -  | - | -     | -   |
|       |    |     |          | Mid  | 1745   | 349000 | 1639.88 | 327976 | 504 |    | -    | -      | -  | - | -     | -   |
|       |    |     |          | High | 1765   | 353000 | 1749.52 | 349904 | 6   |    | -    | -      | -  | - | -     | -   |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.1.1.66-2: Test frequencies for NR operating band n66, uplink and downlink channel bandwidth combinations and SCS 30 kHz

| UL/DL Band width combination | CBW [MHz] | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetTo PointA (SIB1) [PRBs] Note 1 |      |
|------------------------------|-----------|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|------|
| 10/10                        | 10        | 24                       | Downlink | Low                  | 2115                   | 423000        | 2110.68                           | 422136                          | 0                  | 15   | 5286                          | 422910    | 18                                     | 0                                      | 0 (5)                                | 10   |
|                              |           |                          |          | Mid                  | 2145                   | 429000        | 2103.96                           | 420792                          | 102                |      | 5361                          | 428910    | 18                                     | 0                                      | 0 (5)                                | 214  |
|                              |           |                          |          | High                 | 2175                   | 435000        | 1989.24                           | 397848                          | 504                |      | 5436                          | 434910    | 18                                     | 0                                      | 0 (5)                                | 1018 |
|                              | 10        | 24                       | Uplink   | Low                  | 1715                   | 343000        | 1710.68                           | 342136                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -    |
|                              |           |                          |          | Mid                  | 1745                   | 349000        | 1559.24                           | 311848                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -    |
|                              |           |                          |          | High                 | 1775                   | 355000        | 1768.52                           | 353704                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -    |
| 10/20                        | 20        | 51                       | Downlink | Low                  | 2120                   | 424000        | 2110.82                           | 422164                          | 0                  | 15   | 5285                          | 422890    | 2                                      | 0                                      | 0 (5)                                | 10   |
|                              |           |                          |          | Mid                  | 2150                   | 430000        | 2104.1                            | 420820                          | 102                |      | 5360                          | 428890    | 2                                      | 0                                      | 0 (5)                                | 214  |
|                              |           |                          |          | High                 | 2180                   | 436000        | 1989.38                           | 397876                          | 504                |      | 5435                          | 434890    | 2                                      | 0                                      | 0 (5)                                | 1018 |
|                              | 10        | 24                       | Uplink   | Low                  | 1715                   | 343000        | 1710.68                           | 342136                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -    |
|                              |           |                          |          | Mid                  | 1745                   | 349000        | 1559.24                           | 311848                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -    |
|                              |           |                          |          | High                 | 1775                   | 355000        | 1768.52                           | 353704                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -    |
| 10/40                        | 40        | 106                      | Downlink | Low                  | 2130                   | 426000        | 2110.92                           | 422184                          | 0                  | 15   | 5286                          | 422910    | 2                                      | 0                                      | 0 (5)                                | 10   |
|                              |           |                          |          | Mid                  | 2155                   | 431000        | 2099.2                            | 419840                          | 102                |      | 5350                          | 427970    | 22                                     | 0                                      | 0 (5)                                | 214  |
|                              |           |                          |          | High                 | 2180                   | 436000        | 1979.48                           | 395896                          | 504                |      | 5411                          | 432970    | 22                                     | 0                                      | 0 (5)                                | 1018 |
|                              | 10        | 24                       | Uplink   | Low                  | 1715                   | 343000        | 1710.68                           | 342136                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -    |
|                              |           |                          |          | Mid                  | 1740                   | 348000        | 1554.24                           | 310848                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -    |
|                              |           |                          |          | High                 | 1765                   | 353000        | 1758.52                           | 351704                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -    |
| 15/15                        | 15        | 38                       | Downlink | Low                  | 2117.5                 | 423500        | 2110.66                           | 422132                          | 0                  | 15   | 5287                          | 422930    | 2                                      | 0                                      | 1 (6)                                | 12   |
|                              |           |                          |          | Mid                  | 2145                   | 429000        | 2101.44                           | 420288                          | 102                |      | 5355                          | 428430    | 2                                      | 0                                      | 1 (6)                                | 216  |
|                              |           |                          |          | High                 | 2172.5                 | 434500        | 1984.22                           | 396844                          | 504                |      | 5423                          | 433930    | 2                                      | 0                                      | 1 (6)                                | 1020 |
|                              | 15        | 38                       | Uplink   | Low                  | 1717.5                 | 343500        | 1710.66                           | 342132                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -    |
|                              |           |                          |          | Mid                  | 1745                   | 349000        | 1556.72                           | 311344                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -    |
|                              |           |                          |          | High                 | 1772.5                 | 354500        | 1763.5                            | 352700                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -    |
| 20/20                        | 20        | 51                       | Downlink | Low                  | 2120                   | 424000        | 2110.82                           | 422164                          | 0                  | 15   | 5285                          | 422890    | 2                                      | 0                                      | 0 (5)                                | 10   |
|                              |           |                          |          | Mid                  | 2145                   | 429000        | 2099.1                            | 419820                          | 102                |      | 5349                          | 427950    | 22                                     | 0                                      | 0 (5)                                | 214  |
|                              |           |                          |          | High                 | 2170                   | 434000        | 1979.38                           | 395876                          | 504                |      | 5413                          | 433010    | 18                                     | 0                                      | 1 (6)                                | 1020 |
|                              | 20        | 51                       | Uplink   | Low                  | 1720                   | 344000        | 1710.82                           | 342164                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -    |
|                              |           |                          |          | Mid                  | 1745                   | 349000        | 1554.38                           | 310876                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -    |
|                              |           |                          |          | High                 | 1770                   | 354000        | 1758.66                           | 351732                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -    |
| 20/40                        | 40        | 106                      | Downlink | Low                  | 2130                   | 426000        | 2110.92                           | 422184                          | 0                  | 15   | 5286                          | 422910    | 2                                      | 0                                      | 0 (5)                                | 10   |
|                              |           |                          |          | Mid                  | 2155                   | 431000        | 2099.2                            | 419840                          | 102                |      | 5350                          | 427970    | 22                                     | 0                                      | 0 (5)                                | 214  |
|                              | 20        | 51                       | Uplink   | Low                  | 1720                   | 344000        | 1710.82                           | 342164                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -    |
|                              |           |                          |          | Mid                  | 1745                   | 349000        | 1554.38                           | 310876                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -    |

|       |    |     |          |      |        |        |         |        |     |    |      |        |    |   |       |      |
|-------|----|-----|----------|------|--------|--------|---------|--------|-----|----|------|--------|----|---|-------|------|
|       |    |     |          | High | 1770   | 354000 | 1758.66 | 351732 | 6   |    | -    | -      | -  | - | -     | -    |
| 25/25 | 25 | 65  | Downlink | Low  | 2122.5 | 424500 | 2110.8  | 422160 | 0   | 15 | 5286 | 422910 | 10 | 0 | 0 (5) | 10   |
|       |    |     |          | Mid  | 2145   | 429000 | 2096.58 | 419316 | 102 |    | 5343 | 427470 | 6  | 0 | 1 (6) | 216  |
|       |    |     |          | High | 2167.5 | 433500 | 1974.36 | 394872 | 504 |    | 5400 | 432030 | 2  | 0 | 2 (7) | 1022 |
|       | 25 | 65  | Uplink   | Low  | 1722.5 | 344500 | 1710.8  | 342160 | 0   | -  | -    | -      | -  | - | -     | -    |
|       |    |     |          | Mid  | 1745   | 349000 | 1551.86 | 310372 | 504 |    | -    | -      | -  | - | -     | -    |
|       |    |     |          | High | 1767.5 | 353500 | 1753.64 | 350728 | 6   |    | -    | -      | -  | - | -     | -    |
| 30/30 | 30 | 78  | Downlink | Low  | 2125   | 425000 | 2110.96 | 422192 | 0   | 15 | 5287 | 422930 | 6  | 0 | 0 (5) | 10   |
|       |    |     |          | Mid  | 2145   | 429000 | 2094.24 | 418848 | 102 |    | 5337 | 426990 | 2  | 0 | 1 (6) | 216  |
|       |    |     |          | High | 2165   | 433000 | 1969.52 | 393904 | 504 |    | 5387 | 431050 | 22 | 0 | 1 (6) | 1020 |
|       | 30 | 78  | Uplink   | Low  | 1725   | 345000 | 1710.96 | 342192 | 0   | -  | -    | -      | -  | - | -     | -    |
|       |    |     |          | Mid  | 1745   | 349000 | 1549.52 | 309904 | 504 |    | -    | -      | -  | - | -     | -    |
|       |    |     |          | High | 1765   | 353000 | 1748.8  | 349760 | 6   |    | -    | -      | -  | - | -     | -    |
| 40/40 | 40 | 106 | Downlink | Low  | 2130   | 426000 | 2110.92 | 422184 | 0   | 15 | 5286 | 422910 | 2  | 0 | 0 (5) | 10   |
|       |    |     |          | Mid  | 2145   | 429000 | 2089.2  | 417840 | 102 |    | 5325 | 426030 | 18 | 0 | 1 (6) | 216  |
|       |    |     |          | High | 2160   | 432000 | 1959.48 | 391896 | 504 |    | 5361 | 428910 | 2  | 0 | 0 (5) | 1018 |
|       | 40 | 106 | Uplink   | Low  | 1730   | 346000 | 1710.92 | 342184 | 0   | -  | -    | -      | -  | - | -     | -    |
|       |    |     |          | Mid  | 1745   | 349000 | 1544.48 | 308896 | 504 |    | -    | -      | -  | - | -     | -    |
|       |    |     |          | High | 1760   | 352000 | 1738.76 | 347752 | 6   |    | -    | -      | -  | - | -     | -    |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{OffsetCORESET-0-Carrier}$  in Annex C expressed in number of common RBs.

**Table 4.3.1.1.66-2A: Test frequencies for NR operating band n66 asymmetric channel bandwidth combination set 1, uplink and downlink channel bandwidth combination and SCS 15 kHz**

| UL/DL Band width combination | CBW [MHz] | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz]   | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |  |
|------------------------------|-----------|--------------------------|----------|------|--|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|-------------------------------------|--|
| 10/20                        | 20        | 106                      | Downlink | Low  | Same as for UL/DL bandwidth combination 10/20 in Table 4.3.1.1.66-2. |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                     |  |
|                              | 10        | 52                       | Uplink   | Low  |  |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                     |  |
| 10/25                        | 25        | 65                       | Downlink | Low  | 2122.5   | 424500                 | 2110.8        | 422160                            | 0                               | 15                 | 5286 | 422910                        | 10        | 0                                      | 0 (5)                                  | 10                                  |  |
|                              |           |                          |          | Mid  | 2152.5   | 430500                 | 2104.08       | 420816                            | 102                             |                    | 5361 | 428910                        | 10        | 0                                      | 0 (5)                                  | 214                                 |  |
|                              |           |                          |          | High | 2182.5   | 436500                 | 1989.36       | 397872                            | 504                             |                    | 5436 | 434910                        | 10        | 0                                      | 0 (5)                                  | 1018                                |  |
|                              | 10        | 24                       | Uplink   | Low  | 1715   | 343000                 | 1710.68       | 342136                            | 0                               | -                  | -    | -                             | -         | -                                      | -                                      | -                                   |  |
|                              |           |                          |          | Mid  | 1745   | 349000                 | 1559.24       | 311848                            | 504                             |                    | -    | -                             | -         | -                                      | -                                      | -                                   |  |
|                              |           |                          |          | High | 1775   | 355000                 | 1768.52       | 353704                            | 6                               |                    | -    | -                             | -         | -                                      | -                                      | -                                   |  |
| 10/30                        | 30        | 78                       | Downlink | Low  | 2125   | 425000                 | 2110.96       | 422192                            | 0                               | 15                 | 5287 | 422930                        | 6         | 0                                      | 0 (5)                                  | 10                                  |  |
|                              |           |                          |          | Mid  | 2155   | 431000                 | 2104.24       | 420848                            | 102                             |                    | 5362 | 428930                        | 6         | 0                                      | 0 (5)                                  | 214                                 |  |
|                              |           |                          |          | High | 2185   | 437000                 | 1989.52       | 397904                            | 504                             |                    | 5437 | 434930                        | 6         | 0                                      | 0 (5)                                  | 1018                                |  |
|                              | 10        | 24                       | Uplink   | Low  | 1715   | 343000                 | 1710.68       | 342136                            | 0                               | -                  | -    | -                             | -         | -                                      | -                                      | -                                   |  |
|                              |           |                          |          | Mid  | 1745   | 349000                 | 1559.24       | 311848                            | 504                             |                    | -    | -                             | -         | -                                      | -                                      | -                                   |  |
|                              |           |                          |          | High | 1775   | 355000                 | 1768.52       | 353704                            | 6                               |                    | -    | -                             | -         | -                                      | -                                      | -                                   |  |
| 10/40                        | 40        | 216                      | Downlink | Low  | Same as for UL/DL bandwidth combination 10/40 in Table 4.3.1.1.66-2. |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                     |  |
|                              | 10        | 52                       | Uplink   | Low  |  |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                     |  |
| 20/40                        | 40        | 216                      | Downlink | Low  | Same as for UL/DL bandwidth combination 20/40 in Table 4.3.1.1.66-2. |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                     |  |
|                              | 20        | 106                      | Uplink   | Low  |  |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                     |  |
| 25/40                        | 40        | 106                      | Downlink | Low  | 2130   | 426000                 | 2110.92       | 422184                            | 0                               | 15                 | 5286 | 422910                        | 2         | 0                                      | 0 (5)                                  | 10                                  |  |
|                              |           |                          |          | Mid  | 2152.5   | 430500                 | 2096.7        | 419340                            | 102                             |                    | 5343 | 427470                        | 22        | 0                                      | 0 (5)                                  | 214                                 |  |
|                              |           |                          |          | High | 2175   | 435000                 | 1974.48       | 394896                            | 504                             |                    | 5400 | 432030                        | 18        | 0                                      | 1 (6)                                  | 1020                                |  |
|                              | 25        | 65                       | Uplink   | Low  | 1722.5   | 344500                 | 1710.8        | 342160                            | 0                               | -                  | -    | -                             | -         | -                                      | -                                      | -                                   |  |
|                              |           |                          |          | Mid  | 1745   | 349000                 | 1551.86       | 310372                            | 504                             |                    | -    | -                             | -         | -                                      | -                                      | -                                   |  |
|                              |           |                          |          | High | 1767.5   | 353500                 | 1753.64       | 350728                            | 6                               |                    | -    | -                             | -         | -                                      | -                                      | -                                   |  |
| 30/40                        | 40        | 106                      | Downlink | Low  | 2130   | 426000                 | 2110.92       | 422184                            | 0                               | 15                 | 5286 | 422910                        | 2         | 0                                      | 0 (5)                                  | 10                                  |  |
|                              |           |                          |          | Mid  | 2150   | 430000                 | 2094.2        | 418840                            | 102                             |                    | 5336 | 426970                        | 22        | 0                                      | 0 (5)                                  | 214                                 |  |
|                              |           |                          |          | High | 2170   | 434000                 | 1969.48       | 393896                            | 504                             |                    | 5389 | 431090                        | 14        | 0                                      | 2 (7)                                  | 1022                                |  |
|                              | 30        | 78                       | Uplink   | Low  | 1725   | 345000                 | 1710.96       | 342192                            | 0                               | -                  | -    | -                             | -         | -                                      | -                                      | -                                   |  |
|                              |           |                          |          | Mid  | 1745   | 349000                 | 1549.52       | 309904                            | 504                             |                    | -    | -                             | -         | -                                      | -                                      | -                                   |  |
|                              |           |                          |          | High | 1765   | 353000                 | 1748.8        | 349760                            | 6                               |                    | -    | -                             | -         | -                                      | -                                      | -                                   |  |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{OffsetCORESET-0-Carrier}$  in Annex C expressed in number of common RBs.



**Table 4.3.1.1.66-3: Test frequencies for NR operating band n66, uplink and downlink channel bandwidth combinations and SCS 60 kHz without CORESET#0**

| UL/DL Bandwidth combination | CBW [MHz] | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPointA [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|-----------------------------|-----------|--------------------------|----------|----------------------|------------------------|---------------|---------------------------------|--------------------------------|--------------------|------|-------------------------------|
| 10/10                       | 10        | 11                       | Downlink | Low                  | 2115                   | 423000        | 2111.04                         | 422208                         | 0                  | 15   | -                             |
|                             |           |                          |          | Mid                  | 2145                   | 429000        | 2067.6                          | 413520                         | 102                |      | -                             |
|                             |           |                          |          | High                 | 2175                   | 435000        | 1808.16                         | 361632                         | 504                |      | -                             |
|                             | 10        | 11                       | Uplink   | Low                  | 1715                   | 343000        | 1711.04                         | 342208                         | 0                  | -    | -                             |
|                             |           |                          |          | Mid                  | 1745                   | 349000        | 1378.16                         | 275632                         | 504                |      | -                             |
|                             |           |                          |          | High                 | 1775                   | 355000        | 1766.72                         | 353344                         | 6                  |      | -                             |
|                             | 20        | 24                       | Downlink | Low                  | 2120                   | 424000        | 2111.36                         | 422272                         | 0                  | 15   | -                             |
|                             |           |                          |          | Mid                  | 2150                   | 430000        | 2067.92                         | 413584                         | 102                |      | -                             |
|                             |           |                          |          | High                 | 2180                   | 436000        | 1808.48                         | 361696                         | 504                |      | -                             |
|                             | 10        | 11                       | Uplink   | Low                  | 1715                   | 343000        | 1711.04                         | 342208                         | 0                  | -    | -                             |
|                             |           |                          |          | Mid                  | 1745                   | 349000        | 1378.16                         | 275632                         | 504                |      | -                             |
|                             |           |                          |          | High                 | 1775                   | 355000        | 1766.72                         | 353344                         | 6                  |      | -                             |
|                             | 40        | 51                       | Downlink | Low                  | 2130                   | 426000        | 2111.64                         | 422328                         | 0                  | 15   | -                             |
|                             |           |                          |          | Mid                  | 2155                   | 431000        | 2063.2                          | 412640                         | 102                |      | -                             |
|                             |           |                          |          | High                 | 2180                   | 436000        | 1798.76                         | 359752                         | 504                |      | -                             |
|                             | 10        | 11                       | Uplink   | Low                  | 1715                   | 343000        | 1711.04                         | 342208                         | 0                  | -    | -                             |
|                             |           |                          |          | Mid                  | 1740                   | 348000        | 1373.16                         | 274632                         | 504                |      | -                             |
|                             |           |                          |          | High                 | 1765                   | 353000        | 1756.72                         | 351344                         | 6                  |      | -                             |
|                             | 15        | 18                       | Downlink | Low                  | 2117.5                 | 423500        | 2111.02                         | 422204                         | 0                  | 15   | -                             |
|                             |           |                          |          | Mid                  | 2145                   | 429000        | 2065.08                         | 413016                         | 102                |      | -                             |
|                             |           |                          |          | High                 | 2172.5                 | 434500        | 1803.14                         | 360628                         | 504                |      | -                             |
|                             | 15        | 18                       | Uplink   | Low                  | 1717.5                 | 343500        | 1711.02                         | 342204                         | 0                  | -    | -                             |
|                             |           |                          |          | Mid                  | 1745                   | 349000        | 1375.64                         | 275128                         | 504                |      | -                             |
|                             |           |                          |          | High                 | 1772.5                 | 354500        | 1761.7                          | 352340                         | 6                  |      | -                             |
|                             | 20        | 24                       | Downlink | Low                  | 2120                   | 424000        | 2111.36                         | 422272                         | 0                  | 15   | -                             |
|                             |           |                          |          | Mid                  | 2145                   | 429000        | 2062.92                         | 412584                         | 102                |      | -                             |
|                             |           |                          |          | High                 | 2170                   | 434000        | 1798.48                         | 359696                         | 504                |      | -                             |
|                             | 20        | 24                       | Uplink   | Low                  | 1720                   | 344000        | 1711.36                         | 342272                         | 0                  | -    | -                             |
|                             |           |                          |          | Mid                  | 1745                   | 349000        | 1373.48                         | 274696                         | 504                |      | -                             |
|                             |           |                          |          | High                 | 1770                   | 354000        | 1757.04                         | 351408                         | 6                  |      | -                             |
|                             | 40        | 51                       | Downlink | Low                  | 2130                   | 426000        | 2111.64                         | 422328                         | 0                  | 15   | -                             |
|                             |           |                          |          | Mid                  | 2155                   | 431000        | 2063.2                          | 412640                         | 102                |      | -                             |
|                             |           |                          |          | High                 | 2180                   | 436000        | 1798.76                         | 359752                         | 504                |      | -                             |
|                             | 20        | 24                       | Uplink   | Low                  | 1720                   | 344000        | 1711.36                         | 342272                         | 0                  | -    | -                             |
|                             |           |                          |          | Mid                  | 1745                   | 349000        | 1373.48                         | 274696                         | 504                |      | -                             |

|       |    |    |          |      |        |        |         |        |     |    |   |        |
|-------|----|----|----------|------|--------|--------|---------|--------|-----|----|---|--------|
|       |    |    |          | High | 1770   | 354000 | 1757.04 | 351408 | 6   |    | - | -      |
| 25/25 | 25 | 31 | Downlink | Low  | 2122.5 | 424500 | 2111.34 | 422268 | 0   | 15 | - | 422628 |
|       |    |    |          | Mid  | 2145   | 429000 | 2060.4  | 412080 | 102 |    | - | 427128 |
|       |    |    |          | High | 2167.5 | 433500 | 1793.46 | 358692 | 504 |    | - | 431628 |
|       | 25 | 31 | Uplink   | Low  | 1722.5 | 344500 | 1711.34 | 342268 | 0   | -  | - | -      |
|       |    |    |          | Mid  | 1745   | 349000 | 1370.96 | 274192 | 504 |    | - | -      |
|       |    |    |          | High | 1767.5 | 353500 | 1752.02 | 350404 | 6   |    | - | -      |
| 30/30 | 30 | 38 | Downlink | Low  | 2125   | 425000 | 2111.32 | 422264 | 0   | 15 | - | 422624 |
|       |    |    |          | Mid  | 2145   | 429000 | 2057.88 | 411576 | 102 |    | - | 426624 |
|       |    |    |          | High | 2165   | 433000 | 1788.44 | 357688 | 504 |    | - | 430624 |
|       | 30 | 38 | Uplink   | Low  | 1725   | 345000 | 1711.32 | 342264 | 0   | -  | - | -      |
|       |    |    |          | Mid  | 1745   | 349000 | 1368.44 | 273688 | 504 |    | - | -      |
|       |    |    |          | High | 1765   | 353000 | 1747    | 349400 | 6   |    | - | -      |
| 40/40 | 40 | 51 | Downlink | Low  | 2130   | 426000 | 2111.64 | 422328 | 0   | 15 | - | 422688 |
|       |    |    |          | Mid  | 2145   | 429000 | 2053.2  | 410640 | 102 |    | - | 425688 |
|       |    |    |          | High | 2160   | 432000 | 1778.76 | 355752 | 504 |    | - | 428688 |
|       | 40 | 51 | Uplink   | Low  | 1730   | 346000 | 1711.64 | 342328 | 0   | -  | - | -      |
|       |    |    |          | Mid  | 1745   | 349000 | 1363.76 | 272752 | 504 |    | - | -      |
|       |    |    |          | High | 1760   | 352000 | 1737.32 | 347464 | 6   |    | - | -      |

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ ,  $controlResourceSetZero=0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).

**Table 4.3.1.1.1.66-3A: Test frequencies for NR operating band n66 and asymmetric channel bandwidth combination set 1, uplink and downlink channel bandwidth combinations and SCS 60 kHz without CORESET#0**

| UL/DL Bandwidth combination   | CBW [MHz] | carrier Bandwidth [PRBs] | Range    |            | Carrier centre [MHz]  | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPointA [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |  |  |
|---|-----------|--------------------------|----------|------------|---|------------------------|---------------|---------------------------------|--------------------------------|--------------------|------|-------------------------------|--|--|
| 10/20   | 20<br>10  | 24<br>11                 | Downlink | Low<br>Mid | Same as for UL/DLBandwidth combination 10/20 in Table 4.3.1.1.1.66-3. |                        |               |                                 |                                |                    |      |                               |  |  |
| 10/25   | 25        | 31                       | Downlink | Low        | 2122.5  | 424500                 | 2111.34       | 422268                          | 0                              | 15                 | -    | 422628                        |  |  |
|   |           |                          |          | Mid        | 2152.5  | 430500                 | 2067.9        | 413580                          | 102                            |                    | -    | 428628                        |  |  |
|   |           |                          |          | High       | 2182.5  | 436500                 | 1808.46       | 361692                          | 504                            |                    | -    | 434628                        |  |  |
|   | 10        | 11                       | Uplink   | Low        | 1715  | 343000                 | 1711.04       | 342208                          | 0                              | -                  | -    | -                             |  |  |
|   |           |                          |          | Mid        | 1745  | 349000                 | 1378.16       | 275632                          | 504                            |                    | -    | -                             |  |  |
|   |           |                          |          | High       | 1775  | 355000                 | 1766.72       | 353344                          | 6                              |                    | -    | -                             |  |  |
| 10/30   | 30        | 38                       | Downlink | Low        | 2125  | 425000                 | 2111.32       | 422264                          | 0                              | 15                 | -    | 422624                        |  |  |
|   |           |                          |          | Mid        | 2155  | 431000                 | 2067.88       | 413576                          | 102                            |                    | -    | 428624                        |  |  |
|   |           |                          |          | High       | 2185  | 437000                 | 1808.44       | 361688                          | 504                            |                    | -    | 434624                        |  |  |
|   | 10        | 11                       | Uplink   | Low        | 1715  | 343000                 | 1711.04       | 342208                          | 0                              | -                  | -    | -                             |  |  |
|   |           |                          |          | Mid        | 1745  | 349000                 | 1378.16       | 275632                          | 504                            |                    | -    | -                             |  |  |
|   |           |                          |          | High       | 1775  | 355000                 | 1766.72       | 353344                          | 6                              |                    | -    | -                             |  |  |
| 20/40   | 40        | 51                       | Downlink | Low        | Same as for UL/DLBandwidth combination 20/40 in Table 4.3.1.1.1.66-3. |                        |               |                                 |                                |                    |      |                               |  |  |
|   |           |                          |          | Mid        |   |                        |               |                                 |                                |                    |      |                               |  |  |
|   | 25        | 51                       | Downlink | Low        | 2130  | 426000                 | 2111.64       | 422328                          | 0                              | 15                 | -    | 422688                        |  |  |
|   |           |                          |          | Mid        | 2152.5  | 430500                 | 2060.7        | 412140                          | 102                            |                    | -    | 427188                        |  |  |
|   |           |                          |          | High       | 2175  | 435000                 | 1793.76       | 358752                          | 504                            |                    | -    | 431688                        |  |  |
| 25/40   | 25        | 31                       | Uplink   | Low        | 1722.5  | 344500                 | 1711.34       | 342268                          | 0                              | -                  | -    | -                             |  |  |
|   |           |                          |          | Mid        | 1745  | 349000                 | 1370.96       | 274192                          | 504                            |                    | -    | -                             |  |  |
|   |           |                          |          | High       | 1767.5  | 353500                 | 1752.02       | 350404                          | 6                              |                    | -    | -                             |  |  |
|   | 30        | 38                       | Downlink | Low        | 2130  | 426000                 | 2111.64       | 422328                          | 0                              | 15                 | -    | 422688                        |  |  |
|   |           |                          |          | Mid        | 2150  | 430000                 | 2058.2        | 411640                          | 102                            |                    | -    | 426688                        |  |  |
|   |           |                          |          | High       | 2170  | 434000                 | 1788.76       | 357752                          | 504                            |                    | -    | 430688                        |  |  |
| 30/40   | 30        | 38                       | Uplink   | Low        | 1725  | 345000                 | 1711.32       | 342264                          | 0                              | -                  | -    | -                             |  |  |
|   |           |                          |          | Mid        | 1745  | 349000                 | 1368.44       | 273688                          | 504                            |                    | -    | -                             |  |  |
|   |           |                          |          | High       | 1765  | 353000                 | 1747          | 349400                          | 6                              |                    | -    | -                             |  |  |
| Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$ , $controlResourceSetZero = 0$ and $searchSpaceZero = 0$ (TS 38.213 [22], clause 13). |           |                          |          |            |   |                        |               |                                 |                                |                    |      |                               |  |  |

4.3.1.1.67 – 4.3.1.1.69 FFS

4.3.1.1.70 Reference test frequencies for NR operating band n70

Editor's note: Test frequencies for the Tx-RX frequency separation of 295 Mhz option as specified in TS 38.101-1, Table 5.4.4-1 is FFS.

**Table 4.3.1.1.70-1: Test frequencies for NR operating band n70, default Tx-RX frequency separation 300MHz, uplink and downlink channel bandwidth combinations and SCS 15 kHz**

| UL/DL Band width combination | CBW [MHz] | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetTo PointA (SIB1) [PRBs] Note 1 |     |
|------------------------------|-----------|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|-----|
| 5/5                          | 5         | 25                       | Downlink | Low                  | 1997.5                 | 399500        | 1995.25                           | 399050                          | 0                  | 15   | 4993                          | 399410    | 0                                      | 0                                      | 0 (0)                                | 0   |
|                              |           |                          |          | Mid                  | 2002.5                 | 400500        | 1981.89                           | 396378                          | 102                |      | 5007                          | 400590    | 0                                      | 1                                      | 2 (4)                                | 107 |
|                              |           |                          |          | High                 | 2007.5                 | 401500        | 1914.53                           | 382906                          | 504                |      | 5018                          | 401530    | 4                                      | 1                                      | 1 (2)                                | 507 |
|                              | 5         | 25                       | Uplink   | Low                  | 1697.5                 | 339500        | 1695.25                           | 339050                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | Mid                  | 1702.5                 | 340500        | 1609.53                           | 321906                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | High                 | 1707.5                 | 341500        | 1704.17                           | 340834                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              | 10        | 52                       | Downlink | Low                  | 2000                   | 400000        | 1995.32                           | 399064                          | 0                  | 15   | 4994                          | 399610    | 2                                      | 1                                      | 2 (4)                                | 5   |
|                              |           |                          |          | Mid                  | 2005                   | 401000        | 1981.96                           | 396392                          | 102                |      | 5008                          | 400610    | 2                                      | 1                                      | 2 (4)                                | 107 |
|                              |           |                          |          | High                 | 2010                   | 402000        | 1914.6                            | 382920                          | 504                |      | 5019                          | 401550    | 6                                      | 1                                      | 1 (2)                                | 507 |
| 5/10                         | 5         | 25                       | Uplink   | Low                  | 1697.5                 | 339500        | 1695.25                           | 339050                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | Mid                  | 1702.5                 | 340500        | 1609.53                           | 321906                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | High                 | 1707.5                 | 341500        | 1704.17                           | 340834                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              | 15        | 79                       | Downlink | Low                  | 2002.5                 | 400500        | 1995.39                           | 399078                          | 0                  | 15   | 4995                          | 399630    | 4                                      | 1                                      | 2 (4)                                | 5   |
|                              |           |                          |          | Mid                  | 2007.5                 | 401500        | 1982.03                           | 396406                          | 102                |      | 5006                          | 400570    | 8                                      | 1                                      | 1 (2)                                | 105 |
|                              |           |                          |          | High                 | 2012.5                 | 402500        | 1914.67                           | 382934                          | 504                |      | 5020                          | 401570    | 8                                      | 1                                      | 1 (2)                                | 507 |
| 5/15                         | 5         | 25                       | Uplink   | Low                  | 1697.5                 | 339500        | 1695.25                           | 339050                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | Mid                  | 1702.5                 | 340500        | 1609.53                           | 321906                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | High                 | 1707.5                 | 341500        | 1704.17                           | 340834                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              | 20        | 106                      | Downlink | Low                  | 2005                   | 401000        | 1995.46                           | 399092                          | 0                  | 15   | 4996                          | 399650    | 6                                      | 1                                      | 2 (4)                                | 5   |
|                              |           |                          |          | Mid                  | 2007.5                 | 401500        | 1979.6                            | 395920                          | 102                |      | 5000                          | 400090    | 10                                     | 1                                      | 1 (2)                                | 105 |
|                              |           |                          |          | High                 | 2010                   | 402000        | 1909.74                           | 381948                          | 504                |      | 5007                          | 400590    | 10                                     | 1                                      | 1 (2)                                | 507 |
| 5/20                         | 5         | 25                       | Uplink   | Low                  | 1697.5                 | 339500        | 1695.25                           | 339050                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | Mid                  | 1700                   | 340000        | 1607.03                           | 321406                          | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | High                 | 1702.5                 | 340500        | 1699.17                           | 339834                          | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              | 25        | 133                      | Downlink | Low                  | 2007.5                 | 401500        | 1995.53                           | 399106                          | 0                  | 15   | 4994                          | 399610    | 0                                      | 0                                      | 2 (4)                                | 4   |
|                              |           |                          |          | Mid                  |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                      |     |
|                              |           |                          |          | High                 |                        |               |                                   |                                 |                    |      |                               |           |  |  |                                      |     |
| 5/25                         | 5         | 25                       | Uplink   | Low                  | 1697.5                 | 339500        | 1695.25                           | 339050                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              |           |                          |          | Mid                  |                        |               |                                   |                                 |                    |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                              | 10        | 52                       | Downlink | Low                  | 2000                   | 400000        | 1995.32                           | 399064                          | 0                  | 15   | 4994                          | 399610    | 2                                      | 1                                      | 2 (4)                                | 5   |
|                              |           |                          |          | Mid                  |                        |               |                                   |                                 |                    |      | 5001                          |           | 2                                      | 1                                      | 2 (4)                                | 107 |
|                              |           |                          |          | High                 |                        |               |                                   |                                 |                    |      | 5008                          |           |  |  |                                      |     |
|                              | 10        | 52                       | Uplink   | Low                  | 1700                   | 340000        | 1695.32                           | 339064                          | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |

|       |    |     |          | Mid  | 1702.5 | 340500 | 1607.1  | 321420 | 504 |    | -    | -      | -  | - | -     | -   |  |
|-------|----|-----|----------|------|--------|--------|---------|--------|-----|----|------|--------|----|---|-------|-----|--|
|       |    |     |          | High | 1705   | 341000 | 1699.24 | 339848 | 6   |    | -    | -      | -  | - | -     | -   |  |
| 10/20 | 20 | 106 | Downlink | Low  | 2005   | 401000 | 1995.46 | 399092 | 0   | 15 | 4996 | 399650 | 6  | 1 | 2 (4) | 5   |  |
|       |    |     |          | Mid  | 2007.5 | 401500 | 1979.6  | 395920 | 102 |    | 5000 | 400090 | 10 | 1 | 1 (2) | 105 |  |
|       |    |     |          | High | 2010   | 402000 | 1909.74 | 381948 | 504 |    | 5007 | 400590 | 10 | 1 | 1 (2) | 507 |  |
|       | 10 | 52  | Uplink   | Low  | 1700   | 340000 | 1695.32 | 339064 | 0   |    | -    | -      | -  | - | -     | -   |  |
|       |    |     |          | Mid  | 1702.5 | 340500 | 1607.1  | 321420 | 504 |    | -    | -      | -  | - | -     | -   |  |
|       |    |     |          | High | 1705   | 341000 | 1699.24 | 339848 | 6   |    | -    | -      | -  | - | -     | -   |  |
| 10/25 | 25 | 133 | Downlink | Low  | 2007.5 | 401500 | 1995.53 | 399106 | 0   | 15 | 4994 | 399610 | 0  | 0 | 2 (4) | 4   |  |
|       |    |     |          | Mid  |        |        |         |        |     |    | 4994 | 399610 | 0  | 0 | 2 (4) | 4   |  |
|       |    |     |          | High |        |        |         |        |     |    | 4994 | 399610 | 0  | 0 | 2 (4) | 4   |  |
|       | 10 | 52  | Uplink   | Low  | 1700   | 340000 | 1695.32 | 339064 | 0   |    | -    | -      | -  | - | -     | -   |  |
|       |    |     |          | Mid  |        |        |         |        |     |    | -    | -      | -  | - | -     | -   |  |
|       |    |     |          | High |        |        |         |        |     |    | -    | -      | -  | - | -     | -   |  |
| 15/15 | 15 | 79  | Downlink | Low  | 2002.5 | 400500 | 1995.39 | 399078 | 0   | 15 | 4995 | 399630 | 4  | 6 | 2 (4) | 5   |  |
|       |    |     |          | Mid  |        |        |         |        |     |    | 4995 | 399630 | 4  | 6 | 2 (4) | 5   |  |
|       |    |     |          | High |        |        |         |        |     |    | 4995 | 399630 | 4  | 6 | 2 (4) | 5   |  |
|       | 15 | 79  | Uplink   | Low  | 1702.5 | 340500 | 1695.39 | 339078 | 0   |    | -    | -      | -  | - | -     | -   |  |
|       |    |     |          | Mid  |        |        |         |        |     |    | -    | -      | -  | - | -     | -   |  |
|       |    |     |          | High |        |        |         |        |     |    | -    | -      | -  | - | -     | -   |  |
| 15/20 | 20 | 106 | Downlink | Low  | 2005   | 401000 | 1995.46 | 399092 | 0   | 15 | 4996 | 399650 | 6  | 6 | 2 (4) | 5   |  |
|       |    |     |          | Mid  |        |        |         |        |     |    | 4996 | 399650 | 6  | 6 | 2 (4) | 5   |  |
|       |    |     |          | High |        |        |         |        |     |    | 4996 | 399650 | 6  | 6 | 2 (4) | 5   |  |
|       | 15 | 79  | Uplink   | Low  | 1702.5 | 340500 | 1695.39 | 339078 | 0   |    | -    | -      | -  | - | -     | -   |  |
|       |    |     |          | Mid  |        |        |         |        |     |    | -    | -      | -  | - | -     | -   |  |
|       |    |     |          | High |        |        |         |        |     |    | -    | -      | -  | - | -     | -   |  |
| 15/25 | 25 | 133 | Downlink | Low  | 2007.5 | 401500 | 1995.53 | 399106 | 0   | 15 | 4994 | 399610 | 0  | 0 | 2 (4) | 4   |  |
|       |    |     |          | Mid  |        |        |         |        |     |    | 4994 | 399610 | 0  | 0 | 2 (4) | 4   |  |
|       |    |     |          | High |        |        |         |        |     |    | 4994 | 399610 | 0  | 0 | 2 (4) | 4   |  |
|       | 15 | 79  | Uplink   | Low  | 1702.5 | 340500 | 1695.39 | 339078 | 0   |    | -    | -      | -  | - | -     | -   |  |
|       |    |     |          | Mid  |        |        |         |        |     |    | -    | -      | -  | - | -     | -   |  |
|       |    |     |          | High |        |        |         |        |     |    | -    | -      | -  | - | -     | -   |  |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

**Table 4.3.1.1.70-2: Test frequencies for NR operating band n70, default Tx-RX frequency separation 300MHz, uplink and downlink channel bandwidth combinations and SCS 30 kHz**

| UL/DL Band width combination | CBW [MHz] | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetTo PointA (SIB1) [PRBs] Note 1 |      |
|------------------------------|-----------|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------|--|--------------------------------------|------|
| 10/10                        | 10        | 24                       | Downlink | Low                  | 2000                   | 400000        | 1995.68                           | 399136                          | 0                  | 15   | 5000                          | 400090    | 6                               | 0                                      | 3 (8)                                | 16   |
|                              |           |                          |          | Mid                  | 2002.5                 | 400500        | 1961.46                           | 392292                          | 102                |      | 5007                          | 400590    | 6                               | 0                                      | 3 (8)                                | 220  |
|                              |           |                          |          | High                 | 2005                   | 401000        | 1819.24                           | 363848                          | 504                |      | 5014                          | 401090    | 6                               | 0                                      | 3 (8)                                | 1024 |
|                              | 10        | 24                       | Uplink   | Low                  | 1700                   | 340000        | 1695.68                           | 339136                          | 0                  | -    | -                             | -         | -                               | -                                      | -                                    | -    |
|                              |           |                          |          | Mid                  | 1702.5                 | 340500        | 1516.74                           | 303348                          | 504                |      | -                             | -         | -                               | -                                      | -                                    | -    |
|                              |           |                          |          | High                 | 1705                   | 341000        | 1698.52                           | 339704                          | 6                  |      | -                             | -         | -                               | -                                      | -                                    | -    |
|                              | 20        | 51                       | Downlink | Low                  | 2005                   | 401000        | 1995.82                           | 399164                          | 0                  | 15   | 4999                          | 399890    | 2                               | 0                                      | 0 (5)                                | 10   |
|                              |           |                          |          | Mid                  | 2007.5                 | 401500        | 1961.6                            | 392320                          | 102                |      | 5006                          | 400570    | 14                              | 0                                      | 2 (7)                                | 218  |
|                              |           |                          |          | High                 | 2010                   | 402000        | 1819.38                           | 363876                          | 504                |      | 5013                          | 401070    | 14                              | 0                                      | 2 (7)                                | 1022 |
|                              | 10        | 24                       | Uplink   | Low                  | 1700                   | 340000        | 1695.68                           | 339136                          | 0                  | -    | -                             | -         | -                               | -                                      | -                                    | -    |
|                              |           |                          |          | Mid                  | 1702.5                 | 340500        | 1516.74                           | 303348                          | 504                |      | -                             | -         | -                               | -                                      | -                                    | -    |
|                              |           |                          |          | High                 | 1705                   | 341000        | 1698.52                           | 339704                          | 6                  |      | -                             | -         | -                               | -                                      | -                                    | -    |
| 10/25                        | 25        | 65                       | Downlink | Low                  | 2007.5                 | 401500        | 1959.08                           | 391816                          | 102                | 5000 | 400090                        | 22        | 0                               | 2 (7)                                  | 218                                  |      |
|                              |           |                          |          | Mid                  |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                      |      |
|                              |           |                          |          | High                 |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                      |      |
|                              | 10        | 24                       | Uplink   | Low                  | 1700                   | 340000        | 1514.24                           | 302848                          | 504                | -    | -                             | -         | -                               | -                                      | -                                    |      |
|                              |           |                          |          | Mid                  |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                      |      |
|                              |           |                          |          | High                 |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                      |      |
| 15/15                        | 15        | 38                       | Downlink | Low                  | 2002.5                 | 400500        | 1958.94                           | 391788                          | 102                | 4998 | 399870                        | 6         | 0                               | 0 (5)                                  | 214                                  |      |
|                              |           |                          |          | Mid                  |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                      |      |
|                              |           |                          |          | High                 |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                      |      |
|                              | 15        | 38                       | Uplink   | Low                  | 1702.5                 | 340500        | 1514.22                           | 302844                          | 504                | -    | -                             | -         | -                               | -                                      | -                                    |      |
|                              |           |                          |          | Mid                  |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                      |      |
|                              |           |                          |          | High                 |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                      |      |
| 15/20                        | 20        | 51                       | Downlink | Low                  | 2005                   | 401000        | 1959.1                            | 391820                          | 102                | 15   | 4999                          | 399890    | 2                               | 0                                      | 0 (5)                                | 214  |
|                              |           |                          |          | Mid                  |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                      |      |
|                              | 15        | 38                       | Uplink   | Low                  | 1702.5                 | 340500        | 1514.22                           | 302844                          | 504                | -    | -                             | -         | -                               | -                                      | -                                    |      |
|                              |           |                          |          | Mid                  |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                      |      |
| 15/25                        | 25        | 65                       | Downlink | Low                  | 2007.5                 | 401500        | 1959.08                           | 391816                          | 102                | 15   | 5000                          | 400090    | 22                              | 0                                      | 2 (7)                                | 218  |
|                              |           |                          |          | Mid                  |                        |               |                                   |                                 |                    |      |                               |           |                                 |  |                                      |      |

|      |
|------|
| Mid  |
| High |

- Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

**Table 4.3.1.1.70-3: Test frequencies for NR operating band n70, default Tx-RX frequency separation 300MHz, uplink and downlink channel bandwidth combinations and SCS 60 kHz without CORESET#0**

| UL/DL Band width combination | CBW [MHz] | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|------------------------------|-----------|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|
| 10/10                        | 10        | 11                       | Downlink | Low                  | 2000                   | 400000        | 1996.04                           | 399208                          | 0                  | 15   | -                             |
|                              |           |                          |          | Mid                  | 2002.5                 | 400500        | 1925.1                            | 385020                          | 102                |      | -                             |
|                              |           |                          |          | High                 | 2005                   | 401000        | 1638.16                           | 327632                          | 504                |      | -                             |
|                              | 10        | 11                       | Uplink   | Low                  | 1700                   | 340000        | 1696.04                           | 339208                          | 0                  | -    | -                             |
|                              |           |                          |          | Mid                  | 1702.5                 | 340500        | 1335.66                           | 267132                          | 504                |      | -                             |
|                              |           |                          |          | High                 | 1705                   | 341000        | 1696.72                           | 339344                          | 6                  |      | -                             |
|                              | 20        | 24                       | Downlink | Low                  | 2005                   | 401000        | 1996.36                           | 399272                          | 0                  | 15   | -                             |
|                              |           |                          |          | Mid                  | 2007.5                 | 401500        | 1925.42                           | 385084                          | 102                |      | -                             |
|                              |           |                          |          | High                 | 2010                   | 402000        | 1638.48                           | 327696                          | 504                |      | -                             |
|                              | 10        | 11                       | Uplink   | Low                  | 1700                   | 340000        | 1696.04                           | 339208                          | 0                  | -    | -                             |
|                              |           |                          |          | Mid                  | 1702.5                 | 340500        | 1335.66                           | 267132                          | 504                |      | -                             |
|                              |           |                          |          | High                 | 1705                   | 341000        | 1696.72                           | 339344                          | 6                  |      | -                             |
| 10/25                        | 25        | 31                       | Downlink | Low                  | 2007.5                 | 401500        | 1922.9                            | 384580                          | 102                | 15   | -                             |
|                              |           |                          |          | Mid                  |                        |               |                                   |                                 |                    |      |                               |
|                              | 10        | 11                       | Uplink   | High                 |                        |               |                                   |                                 |                    |      |                               |
|                              |           |                          |          | Low                  | 1700                   | 340000        | 1333.16                           | 266632                          | 504                | -    | -                             |
| 15/15                        | 15        | 18                       | Downlink | Low                  | 2002.5                 | 400500        | 1922.58                           | 384516                          | 102                | 15   | -                             |
|                              |           |                          |          | Mid                  |                        |               |                                   |                                 |                    |      |                               |
|                              | 15        | 18                       | Uplink   | High                 |                        |               |                                   |                                 |                    |      |                               |
|                              |           |                          |          | Low                  | 1702.5                 | 340500        | 1333.14                           | 266628                          | 504                | -    | -                             |
| 15/20                        | 20        | 24                       | Downlink | Low                  | 2005                   | 401000        | 1922.92                           | 384584                          | 102                | 15   | -                             |
|                              |           |                          |          | Mid                  |                        |               |                                   |                                 |                    |      |                               |
|                              | 15        | 18                       | Uplink   | High                 |                        |               |                                   |                                 |                    |      |                               |
|                              |           |                          |          | Low                  | 1702.5                 | 340500        | 1333.14                           | 266628                          | 504                | -    | -                             |
| 15/25                        | 25        | 31                       | Downlink | Low                  | 2007.5                 | 401500        | 1922.9                            | 384580                          | 102                | 15   | -                             |
|                              |           |                          |          | Mid                  |                        |               |                                   |                                 |                    |      |                               |
|                              | 15        | 18                       | Uplink   | High                 | 1702.5                 | 340500        | 1333.14                           | 266628                          | 504                | -    | -                             |

|   |  |  |  |      |  |  |  |  |  |  |  |  |
|---|--|--|--|------|--|--|--|--|--|--|--|--|
|   |  |  |  | High |  |  |  |  |  |  |  |  |
| Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$ , $controlResourceSetZero = 0$ and $searchSpaceZero = 0$ (TS 38.213 [22], clause 13). |  |  |  |      |  |  |  |  |  |  |  |  |

## 4.3.1.1.71

## Reference test frequencies for NR operating band n71

Table 4.3.1.1.71-1: Test frequencies for NR operating band n71 and SCS 15 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 Index (Offset [RBs]) Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |     |
|---|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---|--|-------------------------------------|-----|
| 5   | 25                       | Downlink | Low                  | 619.5                  | 123900        | 617.25                            | 123450                          | 0                  | 15   | 1548                          | 123870    | 8   | 1                                      | 0 (0)                               | 1   |
|   |                          |          | Mid                  | 634.5                  | 126900        | 613.89                            | 122778                          | 102                |      | 1587                          | 126990    | 0   | 1                                      | 2 (4)                               | 107 |
|   |                          |          | High                 | 649.5                  | 129900        | 556.53                            | 111306                          | 504                |      | 1623                          | 129870    | 8   | 1                                      | 0 (0)                               | 505 |
|   |                          | Uplink   | Low                  | 665.5                  | 133100        | 663.25                            | 132650                          | 0                  | -    | -                             | -         | -   | -                                      | -                                   | -   |
|   |                          |          | Mid                  | 680.5                  | 136100        | 587.53                            | 117506                          | 504                |      | -                             | -         | -   | -                                      | -                                   | -   |
|   |                          |          | High                 | 695.5                  | 139100        | 692.17                            | 138434                          | 6                  |      | -                             | -         | -   | -                                      | -                                   | -   |
|   | 10                       | Downlink | Low                  | 622                    | 124400        | 617.32                            | 123464                          | 0                  | 15   | 1549                          | 123890    | 10  | 1                                      | 0 (0)                               | 1   |
|   |                          |          | Mid                  | 634.5                  | 126900        | 611.46                            | 122292                          | 102                |      | 1581                          | 126510    | 2   | 1                                      | 2 (4)                               | 107 |
|   |                          |          | High                 | 647                    | 129400        | 551.6                             | 110320                          | 504                |      | 1610                          | 128890    | 10  | 1                                      | 0 (0)                               | 505 |
|   |                          | Uplink   | Low                  | 668                    | 133600        | 663.32                            | 132664                          | 0                  | -    | -                             | -         | -   | -                                      | -                                   | -   |
|   |                          |          | Mid                  | 680.5                  | 136100        | 585.1                             | 117020                          | 504                |      | -                             | -         | -   | -                                      | -                                   | -   |
|   |                          |          | High                 | 693                    | 138600        | 687.24                            | 137448                          | 6                  |      | -                             | -         | -   | -                                      | -                                   | -   |
| 15  | 79                       | Downlink | Low                  | 624.5                  | 124900        | 617.39                            | 123478                          | 0                  | 15   | 1547                          | 123850    | 4   | 0                                      | 0 (0)                               | 0   |
|   |                          |          | Mid                  | 634.5                  | 126900        | 609.03                            | 121806                          | 102                |      | 1575                          | 126030    | 4   | 1                                      | 2 (4)                               | 107 |
|   |                          |          | High                 | 644.5                  | 128900        | 546.67                            | 109334                          | 504                |      | 1600                          | 127970    | 8   | 1                                      | 1 (2)                               | 507 |
|   |                          | Uplink   | Low                  | 670.5                  | 134100        | 663.39                            | 132678                          | 0                  | -    | -                             | -         | -   | -                                      | -                                   | -   |
|   |                          |          | Mid                  | 680.5                  | 136100        | 582.67                            | 116534                          | 504                |      | -                             | -         | -   | -                                      | -                                   | -   |
|   |                          |          | High                 | 690.5                  | 138100        | 682.31                            | 136462                          | 6                  |      | -                             | -         | -   | -                                      | -                                   | -   |
| 20  | 106                      | Downlink | Low                  | 627                    | 125400        | 617.46                            | 123492                          | 0                  | 15   | 1548                          | 123870    | 6   | 0                                      | 0 (0)                               | 0   |
|   |                          |          | Mid                  | 634.5                  | 126900        | 606.6                             | 121320                          | 102                |      | 1569                          | 125550    | 6   | 1                                      | 2 (4)                               | 107 |
|   |                          |          | High                 | 642                    | 128400        | 541.74                            | 108348                          | 504                |      | 1587                          | 126990    | 10  | 1                                      | 1 (2)                               | 507 |
|   |                          | Uplink   | Low                  | 673                    | 134600        | 663.46                            | 132692                          | 0                  | -    | -                             | -         | -   | -                                      | -                                   | -   |
|   |                          |          | Mid                  | 680.5                  | 136100        | 580.24                            | 116048                          | 504                |      | -                             | -         | -   | -                                      | -                                   | -   |
|   |                          |          | High                 | 688                    | 137600        | 677.38                            | 135476                          | 6                  |      | -                             | -         | -   | -                                      | -                                   | -   |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |   |  |                                     |     |

Table 4.3.1.1.71-2: Test frequencies for NR operating band n71 and SCS 30 kHz

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 2 | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|
| 10   | 24                       | Downlink | Low  | 622                  | 124400                 | 617.68        | 123536                            | 0                               | 15                 | 1555 | 124370                        | 14        | 0                                     | 1 (6)                                 | 12                                  |
|  |                          |          | Mid  | 634.5                | 126900                 | 593.46        | 118692                            | 102                             |                    | 1587 | 126990                        | 6         | 0                                     | 3 (8)                                 | 220                                 |
|  |                          |          | High | 647                  | 129400                 | 461.24        | 92248                             | 504                             |                    | 1616 | 129370                        | 14        | 0                                     | 1 (6)                                 | 1020                                |
|  |                          | Uplink   | Low  | 668                  | 133600                 | 663.68        | 132736                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 680.5                | 136100                 | 494.74        | 98948                             | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 693                  | 138600                 | 686.52        | 137304                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  | 15                       | Downlink | Low  | 624.5                | 124900                 | 617.66        | 123532                            | 0                               | 15                 | 1553 | 124330                        | 2         | 0                                     | 1 (6)                                 | 12                                  |
|  |                          |          | Mid  | 634.5                | 126900                 | 590.94        | 118188                            | 102                             |                    | 1578 | 126270                        | 6         | 0                                     | 0 (5)                                 | 214                                 |
|  |                          |          | High | 644.5                | 128900                 | 456.22        | 91244                             | 504                             |                    | 1606 | 128450                        | 18        | 0                                     | 2 (7)                                 | 1022                                |
|  |                          | Uplink   | Low  | 670.5                | 134100                 | 663.66        | 132732                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 680.5                | 136100                 | 492.22        | 98444                             | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 690.5                | 138100                 | 681.5         | 136300                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  | 20                       | Downlink | Low  | 627                  | 125400                 | 617.82        | 123564                            | 0                               | 15                 | 1554 | 124350                        | 22        | 0                                     | 0 (5)                                 | 10                                  |
|  |                          |          | Mid  | 634.5                | 126900                 | 588.6         | 117720                            | 102                             |                    | 1572 | 125790                        | 2         | 0                                     | 0 (5)                                 | 214                                 |
|  |                          |          | High | 642                  | 128400                 | 451.38        | 90276                             | 504                             |                    | 1593 | 127470                        | 14        | 0                                     | 2 (7)                                 | 1022                                |
|  |                          | Uplink   | Low  | 673                  | 134600                 | 663.82        | 132764                            | 0                               | -                  | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | Mid  | 680.5                | 136100                 | 489.88        | 97976                             | 504                             |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
|  |                          |          | High | 688                  | 137600                 | 676.66        | 135332                            | 6                               |                    | -    | -                             | -         | -                                     | -                                     | -                                   |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |          |      |                      |                        |               |                                   |                                 |                    |      |                               |           |                                       |                                       |                                     |

4.3.1.1.1.72 – 4.3.1.1.1.73

4.3.1.1.1.74 Reference test frequencies for NR operating band n74

Table 4.3.1.1.1.74-1: Test frequencies for NR operating band n74 and SCS 15 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] | CORESET#0 Index (Offset [RBs]) Note 2 | offsetToPointA (SIB1) [PRBs] Note 1 |     |  |  |
|---|--------------------------|----------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--------------------------------|---------------------------------------|-------------------------------------|-----|--|--|
| 5   | 25                       | Downlink | Low                  | 1477.5                 | 295500        | 1475.25                           | 295050                          | 0                  | 15   | 3693                          | 295470    | 8                              | 1                                     | 0 (0)                               | 1   |  |  |
|   |                          |          | Mid                  | 1496.5                 | 299300        | 1475.89                           | 295178                          | 102                |      | 3742                          | 299330    | 4                              | 1                                     | 1 (2)                               | 105 |  |  |
|   |                          |          | High                 | 1515.5                 | 303100        | 1422.53                           | 284506                          | 504                |      | 3788                          | 303130    | 4                              | 1                                     | 1 (2)                               | 507 |  |  |
|   |                          | Uplink   | Low                  | 1429.5                 | 285900        | 1427.25                           | 285450                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | Mid                  | 1448.5                 | 289700        | 1355.53                           | 271106                          | 504                |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | High                 | 1467.5                 | 293500        | 1464.17                           | 292834                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   | 10                       | Downlink | Low                  | 1480                   | 296000        | 1475.32                           | 295064                          | 0                  | 15   | 3694                          | 295490    | 10                             | 1                                     | 0 (0)                               | 1   |  |  |
|   |                          |          | Mid                  | 1496.5                 | 299300        | 1473.46                           | 294692                          | 102                |      | 3736                          | 298850    | 6                              | 1                                     | 1 (2)                               | 105 |  |  |
|   |                          |          | High                 | 1513                   | 302600        | 1417.6                            | 283520                          | 504                |      | 3778                          | 302210    | 2                              | 1                                     | 2 (4)                               | 509 |  |  |
|   |                          | Uplink   | Low                  | 1432                   | 286400        | 1427.32                           | 285464                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | Mid                  | 1448.5                 | 289700        | 1353.1                            | 270620                          | 504                |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | High                 | 1465                   | 293000        | 1459.24                           | 291848                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
| 15  | 79                       | Downlink | Low                  | 1482.5                 | 296500        | 1475.39                           | 295078                          | 0                  | 15   | 3692                          | 295450    | 4                              | 0                                     | 0 (0)                               | 0   |  |  |
|   |                          |          | Mid                  | 1496.5                 | 299300        | 1471.03                           | 294206                          | 102                |      | 3730                          | 298370    | 8                              | 1                                     | 1 (2)                               | 105 |  |  |
|   |                          |          | High                 | 1510.5                 | 302100        |                                   | 1412.67                         | 282534             |      | 3765                          | 301230    | 4                              | 1                                     | 2 (4)                               | 509 |  |  |
|   |                          | Uplink   | Low                  | 1434.5                 | 286900        | 1427.39                           | 285478                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | Mid                  | 1448.5                 | 289700        | 1350.67                           | 270134                          | 504                |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | High                 | 1462.5                 | 292500        | 1454.31                           | 290862                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
| 20  | 106                      | Downlink | Low                  | 1485                   | 297000        | 1475.46                           | 295092                          | 0                  | 15   | 3693                          | 295470    | 6                              | 0                                     | 0 (0)                               | 0   |  |  |
|   |                          |          | Mid                  | 1496.5                 | 299300        | 1468.6                            | 293720                          | 102                |      | 3724                          | 297890    | 10                             | 1                                     | 1 (2)                               | 105 |  |  |
|   |                          |          | High                 | 1508                   | 301600        | 1407.74                           | 281548                          | 504                |      | 3752                          | 300250    | 6                              | 1                                     | 2 (4)                               | 509 |  |  |
|   |                          | Uplink   | Low                  | 1437                   | 287400        | 1427.46                           | 285492                          | 0                  | -    | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | Mid                  | 1448.5                 | 289700        | 1348.24                           | 269648                          | 504                |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
|   |                          |          | High                 | 1460                   | 292000        | 1449.38                           | 289876                          | 6                  |      | -                             | -         | -                              | -                                     | -                                   | -   |  |  |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                |                                       |                                     |     |  |  |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the   |                          |          |                      |                        |               |                                   |                                 |                    |      |                               |           |                                |                                       |                                     |     |  |  |

parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

**Table 4.3.1.1.1.74-2: Test frequencies for NR operating band n74 and SCS 30 kHz**

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|---|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|------------------|--|--|-------------------------------------|
| 10  | 24                       | Downlink | Low  | 1480                 | 296000                 | 1475.68       | 295136                            | 0                               | 15                 | 3700 | 295970                        | 14               | 0                                      | 1 (6)                                  | 12                                  |
|   |                          |          | Mid  | 1496.5               | 299300                 | 1455.46       | 291092                            | 102                             |                    | 3742 | 299330                        | 10               | 0                                      | 2 (7)                                  | 218                                 |
|   |                          |          | High | 1513                 | 302600                 | 1327.24       | 265448                            | 504                             |                    | 3784 | 302690                        | 6                | 0                                      | 3 (8)                                  | 1024                                |
|   |                          | Uplink   | Low  | 1432                 | 286400                 | 1427.68       | 285536                            | 0                               | -                  | -    | -                             | -                | -                                      | -                                      | -                                   |
|   |                          |          | Mid  | 1448.5               | 289700                 | 1262.74       | 252548                            | 504                             |                    | -    | -                             | -                | -                                      | -                                      | -                                   |
|   |                          |          | High | 1465                 | 293000                 | 1458.52       | 291704                            | 6                               |                    | -    | -                             | -                | -                                      | -                                      | -                                   |
| 15  | 38                       | Downlink | Low  | 1482.5               | 296500                 | 1475.66       | 295132                            | 0                               | 15                 | 3698 | 295930                        | 2                | 0                                      | 1 (6)                                  | 12                                  |
|   |                          |          | Mid  | 1496.5               | 299300                 | 1452.94       | 290588                            | 102                             |                    | 3736 | 298850                        | 18               | 0                                      | 2 (7)                                  | 218                                 |
|   |                          |          | High | 1510.5               | 302100                 | 1322.22       | 264444                            | 504                             |                    | 3768 | 301470                        | 6                | 0                                      | 0 (5)                                  | 1018                                |
|   |                          | Uplink   | Low  | 1434.5               | 286900                 | 1427.66       | 285532                            | 0                               | -                  | -    | -                             | -                | -                                      | -                                      | -                                   |
|   |                          |          | Mid  | 1448.5               | 289700                 | 1260.22       | 252044                            | 504                             |                    | -    | -                             | -                | -                                      | -                                      | -                                   |
|   |                          |          | High | 1462.5               | 292500                 | 1453.5        | 290700                            | 6                               |                    | -    | -                             | -                | -                                      | -                                      | -                                   |
| 20  | 51                       | Downlink | Low  | 1485                 | 297000                 | 1475.82       | 295164                            | 0                               | 15                 | 3699 | 295950                        | 22               | 0                                      | 0 (5)                                  | 10                                  |
|   |                          |          | Mid  | 1496.5               | 299300                 | 1450.6        | 290120                            | 102                             |                    | 3730 | 298370                        | 14               | 0                                      | 2 (7)                                  | 218                                 |
|   |                          |          | High | 1508                 | 301600                 | 1317.38       | 263476                            | 504                             |                    | 3755 | 300490                        | 2                | 0                                      | 0 (5)                                  | 1018                                |
|   |                          | Uplink   | Low  | 1437                 | 287400                 | 1427.82       | 285564                            | 0                               | -                  | -    | -                             | -                | -                                      | -                                      | -                                   |
|   |                          |          | Mid  | 1448.5               | 289700                 | 1257.88       | 251576                            | 504                             |                    | -    | -                             | -                | -                                      | -                                      | -                                   |
|   |                          |          | High | 1460                 | 292000                 | 1448.66       | 289732                            | 6                               |                    | -    | -                             | -                | -                                      | -                                      | -                                   |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1 in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |          |      |                      |                        |               |                                   |                                 |                    |      |                               |                  |  |  |                                     |

Table 4.3.1.1.1.74-3: Test frequencies for NR operating band n74 and SCS 60 kHz without CORESET#0

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|---|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|
| 10  | 11                       | Downlink | Low  | 1480                 | 296000                 | 1476.04       | 295208                            | 0                               | 15                 | -    | 295568                        |
|   |                          |          | Mid  | 1496.5               | 299300                 | 1419.1        | 283820                            | 102                             |                    | -    | 298868                        |
|   |                          |          | High | 1513                 | 302600                 | 1146.16       | 229232                            | 504                             |                    | -    | 302168                        |
|   |                          | Uplink   | Low  | 1432                 | 286400                 | 1428.04       | 285608                            | 0                               | -                  | -    | -                             |
|   |                          |          | Mid  | 1448.5               | 289700                 | 1081.66       | 216332                            | 504                             |                    | -    | -                             |
|   |                          |          | High | 1465                 | 293000                 | 1456.72       | 291344                            | 6                               |                    | -    | -                             |
|   |                          | Downlink | Low  | 1482.5               | 296500                 | 1476.02       | 295204                            | 0                               | 15                 | -    | 295564                        |
|   |                          |          | Mid  | 1496.5               | 299300                 | 1416.58       | 283316                            | 102                             |                    | -    | 298364                        |
|   |                          |          | High | 1510.5               | 302100                 | 1141.14       | 228228                            | 504                             |                    | -    | 301164                        |
|   |                          | Uplink   | Low  | 1434.5               | 286900                 | 1428.02       | 285604                            | 0                               | -                  | -    | -                             |
|   |                          |          | Mid  | 1448.5               | 289700                 | 1079.14       | 215828                            | 504                             |                    | -    | -                             |
|   |                          |          | High | 1462.5               | 292500                 | 1451.7        | 290340                            | 6                               |                    | -    | -                             |
|   |                          | Downlink | Low  | 1485                 | 297000                 | 1476.36       | 295272                            | 0                               | 15                 | -    | 295632                        |
|   |                          |          | Mid  | 1496.5               | 299300                 | 1414.42       | 282884                            | 102                             |                    | -    | 297932                        |
|   |                          |          | High | 1508                 | 301600                 | 1136.48       | 227296                            | 504                             |                    | -    | 300232                        |
|   |                          | Uplink   | Low  | 1437                 | 287400                 | 1428.36       | 285672                            | 0                               | -                  | -    | -                             |
|   |                          |          | Mid  | 1448.5               | 289700                 | 1076.98       | 215396                            | 504                             |                    | -    | -                             |
|   |                          |          | High | 1460                 | 292000                 | 1447.04       | 289408                            | 6                               |                    | -    | -                             |
| Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$ , $controlResourceSetZero = 0$ and $searchSpaceZero = 0$ (TS 38.213 [22], clause 13). |                          |          |      |                      |                        |               |                                   |                                 |                    |      |                               |

## 4.3.1.1.75

Reference test frequencies for NR operating band n75 (SDL)

**Table 4.3.1.1.75-1: Test frequencies for NR operating band n75 and SCS 15 kHz without CORESET#0**

| <b>CBW [MHz]</b>  | <b>carrierBand width [PRBs]</b> | <b>Range</b> |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absolute FrequencyPoint A [ARFCN]</b> | <b>offsetTo Carrier [PRBs]</b> | <b>SS block SCS [kHz]</b> | <b>GSCN</b> | <b>absolute FrequencySSB [ARFCN]</b> |
|---|---------------------------------|--------------|------|-----------------------------|-------------------------------|----------------------|--|--------------------------------|---------------------------|-------------|--------------------------------------|
| 5   | 25                              | Downlink     | Low  | 1434.5                      | 286900                        | 1432.25              | 286450                                   | 0                              | 15                        | -           | 286810                               |
|   |                                 |              | Mid  | 1474.5                      | 294900                        | 1453.89              | 290778                                   | 102                            |                           | -           | 294810                               |
|   |                                 |              | High | 1514.5                      | 302900                        | 1421.53              | 284306                                   | 504                            |                           | -           | 302810                               |
| 10  | 52                              | Downlink     | Low  | 1437                        | 287400                        | 1432.32              | 286464                                   | 0                              | 15                        | -           | 286824                               |
|   |                                 |              | Mid  | 1474.5                      | 294900                        | 1451.46              | 290292                                   | 102                            |                           | -           | 294324                               |
|   |                                 |              | High | 1512                        | 302400                        | 1416.6               | 283320                                   | 504                            |                           | -           | 301824                               |
| 15  | 79                              | Downlink     | Low  | 1439.5                      | 287900                        | 1432.39              | 286478                                   | 0                              | 15                        | -           | 286838                               |
|   |                                 |              | Mid  | 1474.5                      | 294900                        | 1449.03              | 289806                                   | 102                            |                           | -           | 293838                               |
|   |                                 |              | High | 1509.5                      | 301900                        | 1411.67              | 282334                                   | 504                            |                           | -           | 300838                               |
| 20  | 106                             | Downlink     | Low  | 1442                        | 288400                        | 1432.46              | 286492                                   | 0                              | 15                        | -           | 286852                               |
|   |                                 |              | Mid  | 1474.5                      | 294900                        | 1446.6               | 289320                                   | 102                            |                           | -           | 293352                               |
|   |                                 |              | High | 1507                        | 301400                        | 1406.74              | 281348                                   | 504                            |                           | -           | 299852                               |
| Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$ , $controlResourceSetZero = 0$ and $searchSpaceZero = 0$ (TS 38.213 [22], clause 13). |                                 |              |      |                             |                               |                      |  |                                |                           |             |                                      |

**Table 4.3.1.1.75-2: Test frequencies for NR operating band n75 and SCS 30 kHz without CORESET#0**

| CBW [MHz]   | carrierBand width [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|---|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|-------------------------|--------------------|------|-------------------------------|
| 10  | 24                       | Downlink | Low  | 1437                 | 287400                 | 1432.68       | 286536                            | 0                       | 15                 | -    | 286896                        |
|   |                          |          | Mid  | 1474.5               | 294900                 | 1433.46       | 286692                            | 102                     |                    | -    | 294396                        |
|   |                          |          | High | 1512                 | 302400                 | 1326.24       | 265248                            | 504                     |                    | -    | 301896                        |
| 15  | 38                       | Downlink | Low  | 1439.5               | 287900                 | 1432.66       | 286532                            | 0                       | 15                 | -    | 286892                        |
|   |                          |          | Mid  | 1474.5               | 294900                 | 1430.94       | 286188                            | 102                     |                    | -    | 293892                        |
|   |                          |          | High | 1509.5               | 301900                 | 1321.22       | 264244                            | 504                     |                    | -    | 300892                        |
| 20  | 51                       | Downlink | Low  | 1442                 | 288400                 | 1432.82       | 286564                            | 0                       | 15                 | -    | 286924                        |
|   |                          |          | Mid  | 1474.5               | 294900                 | 1428.6        | 285720                            | 102                     |                    | -    | 293424                        |
|   |                          |          | High | 1507                 | 301400                 | 1316.38       | 263276                            | 504                     |                    | -    | 299924                        |
| Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$ , $controlResourceSetZero = 0$ and $searchSpaceZero = 0$ (TS 38.213 [22], clause 13). |                          |          |      |                      |                        |               |                                   |                         |                    |      |                               |

**Table 4.3.1.1.75-3: Test frequencies for NR operating band n75 and SCS 60 kHz without CORESET#0**

| CBW [MHz]   | carrierBand width [PRBs] | Range    |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|---|--------------------------|----------|------|----------------------|------------------------|---------------|-----------------------------------|-------------------------|--------------------|------|-------------------------------|
| 10  | 11                       | Downlink | Low  | 1437                 | 287400                 | 1433.04       | 286608                            | 0                       | 15                 | -    | 286968                        |
|   |                          |          | Mid  | 1474.5               | 294900                 | 1397.1        | 279420                            | 102                     |                    | -    | 294468                        |
|   |                          |          | High | 1512                 | 302400                 | 1145.16       | 229032                            | 504                     |                    | -    | 301968                        |
| 15  | 18                       | Downlink | Low  | 1439.5               | 287900                 | 1433.02       | 286604                            | 0                       | 15                 | -    | 286964                        |
|   |                          |          | Mid  | 1474.5               | 294900                 | 1394.58       | 278916                            | 102                     |                    | -    | 293964                        |
|   |                          |          | High | 1509.5               | 301900                 | 1140.14       | 228028                            | 504                     |                    | -    | 300964                        |
| 20  | 24                       | Downlink | Low  | 1442                 | 288400                 | 1433.36       | 286672                            | 0                       | 15                 | -    | 287032                        |
|   |                          |          | Mid  | 1474.5               | 294900                 | 1392.42       | 278484                            | 102                     |                    | -    | 293532                        |
|   |                          |          | High | 1507                 | 301400                 | 1135.48       | 227096                            | 504                     |                    | -    | 300032                        |
| Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$ , $controlResourceSetZero = 0$ and $searchSpaceZero = 0$ (TS 38.213 [22], clause 13). |                          |          |      |                      |                        |               |                                   |                         |                    |      |                               |

## 4.3.1.1.1.76

Reference test frequencies for NR operating band n76 (SDL)

**Table 4.3.1.1.1.76-1: Test frequencies for NR operating band n76 and SCS 15 kHz without CORESET#0**

| Bandwidth [MHz] | carrierBand width [PRBs] | Range    |                | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPointA [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|-----------------|--------------------------|----------|----------------|----------------------|------------------------|---------------|---------------------------------|-------------------------|--------------------|------|-------------------------------|
| 5               | 25                       | Downlink | Low, Mid, High | 1429.5               | 285900                 | 1427.25       | 285450                          | 0                       | 15                 | -    | 285810                        |

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ , controlResourceSetZero=0 and searchSpaceZero = 0 (TS 38.213 [22], clause 13).

## 4.3.1.1.1.77

Reference test frequencies for NR operating band n77

**Table 4.3.1.1.1.77-1: Test frequencies for NR operating band n77, SCS 15 kHz and  $\Delta F_{Raster}$  15 kHz**

| CBW [MHz] | carrier Bandw idth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetTo PointA (SIB1) [PRBs] Note 1 |
|-----------|---------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|
| 10        | 52                        | Downlink & Uplink | Low  | 3305.01              | 620334                 | 3300.33       | 620022                            | 0                               | 30                 | 7711 | 620352                        | 6         | 1                                      | 1 (6)                                  | 7                                    |
|           |                           |                   | Mid  | 3750                 | 650000                 | 3726.96       | 648464                            | 102                             |                    | 8020 | 650016                        | 4         | 1                                      | 1 (6)                                  | 109                                  |
|           |                           |                   | High | 4194.99              | 679666                 | 4099.59       | 673306                            | 504                             |                    | 8329 | 679680                        | 2         | 1                                      | 1 (6)                                  | 511                                  |
| 15        | 79                        | Downlink & Uplink | Low  | 3307.5               | 620500                 | 3300.39       | 620026                            | 0                               | 30                 | 7711 | 620352                        | 2         | 1                                      | 1 (6)                                  | 7                                    |
|           |                           |                   | Mid  | 3750                 | 650000                 | 3724.53       | 648302                            | 102                             |                    | 8018 | 649824                        | 10        | 2                                      | 0 (2)                                  | 106                                  |
|           |                           |                   | High | 4192.5               | 679500                 | 4094.67       | 672978                            | 504                             |                    | 8325 | 679296                        | 6         | 0                                      | 0 (2)                                  | 506                                  |
| 20        | 106                       | Downlink & Uplink | Low  | 3310.02              | 620668                 | 3300.48       | 620032                            | 0                               | 30                 | 7711 | 620352                        | 8         | 0                                      | 1 (6)                                  | 6                                    |
|           |                           |                   | Mid  | 3750                 | 650000                 | 3722.1        | 648140                            | 102                             |                    | 8016 | 649632                        | 4         | 0                                      | 0 (2)                                  | 104                                  |
|           |                           |                   | High | 4189.98              | 679332                 | 4089.72       | 672648                            | 504                             |                    | 8322 | 679008                        | 0         | 0                                      | 1 (6)                                  | 510                                  |
| 25        | 133                       | Downlink & Uplink | Low  | 3312.51              | 620834                 | 3300.54       | 620036                            | 0                               | 30                 | 7711 | 620352                        | 4         | 0                                      | 1 (6)                                  | 6                                    |
|           |                           |                   | Mid  | 3750                 | 650000                 | 3719.67       | 647978                            | 102                             |                    | 8015 | 649536                        | 10        | 1                                      | 1 (6)                                  | 109                                  |
|           |                           |                   | High | 4187.49              | 679166                 | 4084.8        | 672320                            | 504                             |                    | 8319 | 678720                        | 4         | 3                                      | 1 (6)                                  | 513                                  |
| 30        | 160                       | Downlink & Uplink | Low  | 3315                 | 621000                 | 3300.6        | 620040                            | 0                               | 30                 | 7711 | 620352                        | 0         | 0                                      | 1 (6)                                  | 6                                    |
|           |                           |                   | Mid  | 3750                 | 650000                 | 3717.24       | 647816                            | 102                             |                    | 8013 | 649344                        | 4         | 3                                      | 0 (2)                                  | 107                                  |
|           |                           |                   | High | 4185                 | 679000                 | 4079.88       | 671992                            | 504                             |                    | 8315 | 678336                        | 8         | 2                                      | 0 (2)                                  | 508                                  |
| 40        | 216                       | Downlink & Uplink | Low  | 3320.01              | 621334                 | 3300.57       | 620038                            | 0                               | 30                 | 7711 | 620352                        | 2         | 0                                      | 1 (6)                                  | 6                                    |
|           |                           |                   | Mid  | 3750                 | 650000                 | 3712.2        | 647480                            | 102                             |                    | 8010 | 649056                        | 4         | 3                                      | 1 (6)                                  | 111                                  |
|           |                           |                   | High | 4179.99              | 678666                 | 4069.83       | 671322                            | 504                             |                    | 8308 | 677664                        | 6         | 2                                      | 0 (2)                                  | 508                                  |
| 50        | 270                       | Downlink & Uplink | Low  | 3325.02              | 621668                 | 3300.72       | 620048                            | 0                               | 30                 | 7711 | 620352                        | 4         | 3                                      | 0 (2)                                  | 5                                    |
|           |                           |                   | Mid  | 3750                 | 650000                 | 3707.34       | 647156                            | 102                             |                    | 8006 | 648672                        | 4         | 2                                      | 0 (2)                                  | 106                                  |
|           |                           |                   | High | 4174.98              | 678332                 | 4059.96       | 670664                            | 504                             |                    | 8301 | 676992                        | 4         | 1                                      | 0 (2)                                  | 507                                  |

- Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-3 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.
- Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.1.77-2: Test frequencies for NR operating band n77, SCS 30 kHz and  $\Delta F_{\text{Raster}}$  30 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 Index [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetTo PointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|------------------|--|--|--------------------------------------|
| 10        | 24                       | Downlink & Uplink | Low  | 3305.01              | 620334                 | 3300.69       | 620046                            | 0                               | 30                 | 7711 | 620352                        | 18               | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3750                 | 650000                 | 3708.96       | 647264                            | 102                             |                    | 8020 | 650016                        | 16               | 0  | 2 (2)                                  | 208                                  |
|           |                          |                   | High | 4194.99              | 679666                 | 4009.23       | 667282                            | 504                             |                    | 8329 | 679680                        | 14               | 0  | 2 (2)                                  | 1012                                 |
| 15        | 38                       | Downlink & Uplink | Low  | 3307.5               | 620500                 | 3300.66       | 620044                            | 0                               | 30                 | 7711 | 620352                        | 20               | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3750                 | 650000                 | 3706.44       | 647096                            | 102                             |                    | 8018 | 649824                        | 16               | 0  | 1 (1)                                  | 206                                  |
|           |                          |                   | High | 4192.5               | 679500                 | 4004.22       | 666948                            | 504                             |                    | 8325 | 679296                        | 12               | 0  | 0 (0)                                  | 1008                                 |
| 20        | 51                       | Downlink & Uplink | Low  | 3310.02              | 620668                 | 3300.84       | 620056                            | 0                               | 30                 | 7711 | 620352                        | 8                | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3750                 | 650000                 | 3704.1        | 646940                            | 102                             |                    | 8016 | 649632                        | 4                | 0  | 0 (0)                                  | 204                                  |
|           |                          |                   | High | 4189.98              | 679332                 | 3999.36       | 666624                            | 504                             |                    | 8322 | 679008                        | 0                | 0  | 2 (2)                                  | 1012                                 |
| 25        | 65                       | Downlink & Uplink | Low  | 3312.51              | 620834                 | 3300.81       | 620054                            | 0                               | 30                 | 7711 | 620352                        | 10               | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3750                 | 650000                 | 3701.58       | 646772                            | 102                             |                    | 8015 | 649536                        | 4                | 0  | 3 (3)                                  | 210                                  |
|           |                          |                   | High | 4187.49              | 679166                 | 3994.35       | 666290                            | 504                             |                    | 8319 | 678720                        | 22               | 0  | 3 (3)                                  | 1014                                 |
| 30        | 78                       | Downlink & Uplink | Low  | 3315                 | 621000                 | 3300.96       | 620064                            | 0                               | 30                 | 7711 | 620352                        | 0                | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3750                 | 650000                 | 3699.24       | 646616                            | 102                             |                    | 8013 | 649344                        | 16               | 0  | 1 (1)                                  | 206                                  |
|           |                          |                   | High | 4185                 | 679000                 | 3989.52       | 665968                            | 504                             |                    | 8315 | 678336                        | 8                | 0  | 1 (1)                                  | 1010                                 |
| 40        | 106                      | Downlink & Uplink | Low  | 3320.01              | 621334                 | 3300.93       | 620062                            | 0                               | 30                 | 7711 | 620352                        | 2                | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3750                 | 650000                 | 3694.2        | 646280                            | 102                             |                    | 8010 | 649056                        | 16               | 0  | 3 (3)                                  | 210                                  |
|           |                          |                   | High | 4179.99              | 678666                 | 3979.47       | 665298                            | 504                             |                    | 8308 | 677664                        | 6                | 0  | 1 (1)                                  | 1010                                 |
| 50        | 133                      | Downlink & Uplink | Low  | 3325.02              | 621668                 | 3301.08       | 620072                            | 0                               | 30                 | 7711 | 620352                        | 16               | 0  | 1 (1)                                  | 2                                    |
|           |                          |                   | Mid  | 3750                 | 650000                 | 3689.34       | 645956                            | 102                             |                    | 8006 | 648672                        | 4                | 0  | 1 (1)                                  | 206                                  |
|           |                          |                   | High | 4174.98              | 678332                 | 3969.6        | 664640                            | 504                             |                    | 8301 | 676992                        | 16               | 0  | 0 (0)                                  | 1008                                 |
| 60        | 162                      | Downlink & Uplink | Low  | 3330                 | 622000                 | 3300.84       | 620056                            | 0                               | 30                 | 7711 | 620352                        | 8                | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3750                 | 650000                 | 3684.12       | 645608                            | 102                             |                    | 8003 | 648384                        | 16               | 0  | 3 (3)                                  | 210                                  |
|           |                          |                   | High | 4170                 | 678000                 | 3959.4        | 663960                            | 504                             |                    | 8294 | 676320                        | 0                | 0  | 1 (1)                                  | 1010                                 |
| 80        | 217                      | Downlink & Uplink | Low  | 3340.02              | 622668                 | 3300.96       | 620064                            | 0                               | 30                 | 7711 | 620352                        | 0                | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3750                 | 650000                 | 3674.22       | 644948                            | 102                             |                    | 7996 | 647712                        | 4                | 0  | 3 (3)                                  | 210                                  |
|           |                          |                   | High | 4159.98              | 677332                 | 3939.48       | 662632                            | 504                             |                    | 8280 | 674976                        | 8                | 0  | 0 (0)                                  | 1008                                 |
| 90        | 245                      | Downlink & Uplink | Low  | 3345                 | 623000                 | 3300.9        | 620060                            | 0                               | 30                 | 7711 | 620352                        | 4                | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3750                 | 650000                 | 3669.18       | 644612                            | 102                             |                    | 7992 | 647328                        | 4                | 0  | 1 (1)                                  | 206                                  |
|           |                          |                   | High | 4155                 | 677000                 | 3929.46       | 661964                            | 504                             |                    | 8273 | 674304                        | 4                | 0  | 0 (0)                                  | 1008                                 |
| 100       | 273                      | Downlink &        | Low  | 3350.01              | 623334                 | 3300.87       | 620058                            | 0                               | 30                 | 7711 | 620352                        | 6                | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3750                 | 650000                 | 3664.14       | 644276                            | 102                             |                    | 7989 | 647040                        | 4                | 0  | 3 (3)                                  | 210                                  |

|   |  |        |      |         |        |         |        |     |      |        |   |   |       |      |
|---|--|--------|------|---------|--------|---------|--------|-----|------|--------|---|---|-------|------|
|   |  | Uplink | High | 4149.99 | 676666 | 3919.41 | 661294 | 504 | 8266 | 673632 | 2 | 0 | 0 (0) | 1008 |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |  |        |      |         |        |         |        |     |      |        |   |   |       |      |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta f_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |  |        |      |         |        |         |        |     |      |        |   |   |       |      |

Table 4.3.1.1.77-3: Test frequencies for NR operating band n77, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  30 kHz without CORESET#0

| CBW [MHz]  | carrierBand width [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|--|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|-------------------------|--------------------|------|-------------------------------|
| 10   | 11                       | Downlink & Uplink | Low  | 3305.01              | 620334                 | 3301.05       | 620070                            | 0                       | 30                 | -    | 620310                        |
|  |                          |                   | Mid  | 3750                 | 650000                 | 3672.6        | 644840                            | 102                     |                    | -    | 649976                        |
|  |                          |                   | High | 4194.99              | 679666                 | 3828.15       | 655210                            | 504                     |                    | -    | 679642                        |
| 15   | 18                       | Downlink & Uplink | Low  | 3307.5               | 620500                 | 3301.02       | 620068                            | 0                       | 30                 | -    | 620308                        |
|  |                          |                   | Mid  | 3750                 | 650000                 | 3670.08       | 644672                            | 102                     |                    | -    | 649808                        |
|  |                          |                   | High | 4192.5               | 679500                 | 3823.14       | 654876                            | 504                     |                    | -    | 679308                        |
| 20   | 24                       | Downlink & Uplink | Low  | 3310.02              | 620668                 | 3301.38       | 620092                            | 0                       | 30                 | -    | 620332                        |
|  |                          |                   | Mid  | 3750                 | 650000                 | 3667.92       | 644528                            | 102                     |                    | -    | 649664                        |
|  |                          |                   | High | 4189.98              | 679332                 | 3818.46       | 654564                            | 504                     |                    | -    | 678996                        |
| 25   | 31                       | Downlink & Uplink | Low  | 3312.51              | 620834                 | 3301.35       | 620090                            | 0                       | 30                 | -    | 620330                        |
|  |                          |                   | Mid  | 3750                 | 650000                 | 3665.4        | 644360                            | 102                     |                    | -    | 649496                        |
|  |                          |                   | High | 4187.49              | 679166                 | 3813.45       | 654230                            | 504                     |                    | -    | 678662                        |
| 30   | 38                       | Downlink & Uplink | Low  | 3315                 | 621000                 | 3301.32       | 620088                            | 0                       | 30                 | -    | 620328                        |
|  |                          |                   | Mid  | 3750                 | 650000                 | 3662.88       | 644192                            | 102                     |                    | -    | 649328                        |
|  |                          |                   | High | 4185                 | 679000                 | 3808.44       | 653896                            | 504                     |                    | -    | 678328                        |
| 40   | 51                       | Downlink & Uplink | Low  | 3320.01              | 621334                 | 3301.65       | 620110                            | 0                       | 30                 | -    | 620350                        |
|  |                          |                   | Mid  | 3750                 | 650000                 | 3658.2        | 643880                            | 102                     |                    | -    | 649016                        |
|  |                          |                   | High | 4179.99              | 678666                 | 3798.75       | 653250                            | 504                     |                    | -    | 677682                        |
| 50   | 65                       | Downlink & Uplink | Low  | 3325.02              | 621668                 | 3301.62       | 620108                            | 0                       | 30                 | -    | 620348                        |
|  |                          |                   | Mid  | 3750                 | 650000                 | 3653.16       | 643544                            | 102                     |                    | -    | 648680                        |
|  |                          |                   | High | 4174.98              | 678332                 | 3788.7        | 652580                            | 504                     |                    | -    | 677012                        |
| 60   | 79                       | Downlink & Uplink | Low  | 3330                 | 622000                 | 3301.56       | 620104                            | 0                       | 30                 | -    | 620344                        |
|  |                          |                   | Mid  | 3750                 | 650000                 | 3648.12       | 643208                            | 102                     |                    | -    | 648344                        |
|  |                          |                   | High | 4170                 | 678000                 | 3778.68       | 651912                            | 504                     |                    | -    | 676344                        |
| 80   | 107                      | Downlink & Uplink | Low  | 3340.02              | 622668                 | 3301.5        | 620100                            | 0                       | 30                 | -    | 620340                        |
|  |                          |                   | Mid  | 3750                 | 650000                 | 3638.04       | 642536                            | 102                     |                    | -    | 647672                        |
|  |                          |                   | High | 4159.98              | 677332                 | 3758.58       | 650572                            | 504                     |                    | -    | 675004                        |
| 90   | 121                      | Downlink & Uplink | Low  | 3345                 | 623000                 | 3301.44       | 620096                            | 0                       | 30                 | -    | 620336                        |
|  |                          |                   | Mid  | 3750                 | 650000                 | 3633          | 642200                            | 102                     |                    | -    | 647336                        |
|  |                          |                   | High | 4155                 | 677000                 | 3748.56       | 649904                            | 504                     |                    | -    | 674336                        |
| 100  | 135                      | Downlink & Uplink | Low  | 3350.01              | 623334                 | 3301.41       | 620094                            | 0                       | 30                 | -    | 620334                        |
|  |                          |                   | Mid  | 3750                 | 650000                 | 3627.96       | 641864                            | 102                     |                    | -    | 647000                        |
|  |                          |                   | High | 4149.99              | 676666                 | 3738.51       | 649234                            | 504                     |                    | -    | 673666                        |
| Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}} = 31$ , $\text{controlResourceSetZero} = 0$ and $\text{searchSpaceZero} = 0$ (TS 38.213 [22], clause 13). |                          |                   |      |                      |                        |               |                                   |                         |                    |      |                               |

## 4.3.1.1.1.78

## Reference test frequencies for NR operating band n78

Table 4.3.1.1.1.78-1: Test frequencies for NR operating band n78, SCS 15 kHz and  $\Delta F_{\text{Raster}}$  15 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 [RBs] | CORESET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|-------------------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|------------------|--------------------------------|---------------------------------------|-------------------------------------|
| 10        | 52                       | Downlink & Uplink | Low                  | 3305.01                | 620334        | 3300.33                           | 620022                          | 0                  | 30   | 7711                          | 620352           | 6                              | 1                                     | 1 (6)                               |
|           |                          |                   | Mid                  | 3549.99                | 636666        | 3526.95                           | 635130                          | 102                |      | 7881                          | 636672           | 6                              | 0                                     | 1 (6)                               |
|           |                          |                   | High                 | 3795                   | 653000        | 3699.6                            | 646640                          | 504                |      | 8051                          | 652992           | 4                              | 3                                     | 0 (2)                               |
| 15        | 79                       | Downlink & Uplink | Low                  | 3307.5                 | 620500        | 3300.39                           | 620026                          | 0                  | 30   | 7711                          | 620352           | 2                              | 1                                     | 1 (6)                               |
|           |                          |                   | Mid                  | 3549.99                | 636666        | 3524.52                           | 634968                          | 102                |      | 7879                          | 636480           | 0                              | 2                                     | 0 (2)                               |
|           |                          |                   | High                 | 3792.48                | 652832        | 3694.65                           | 646310                          | 504                |      | 8048                          | 652704           | 10                             | 2                                     | 1 (6)                               |
| 20        | 106                      | Downlink & Uplink | Low                  | 3310.02                | 620668        | 3300.48                           | 620032                          | 0                  | 30   | 7711                          | 620352           | 8                              | 0                                     | 1 (6)                               |
|           |                          |                   | Mid                  | 3549.99                | 636666        | 3522.09                           | 634806                          | 102                |      | 7878                          | 636384           | 6                              | 3                                     | 1 (6)                               |
|           |                          |                   | High                 | 3789.99                | 652666        | 3689.73                           | 645982                          | 504                |      | 8044                          | 652320           | 2                              | 2                                     | 0 (2)                               |
| 25        | 133                      | Downlink & Uplink | Low                  | 3312.51                | 620834        | 3300.54                           | 620036                          | 0                  | 30   | 7711                          | 620352           | 4                              | 0                                     | 1 (6)                               |
|           |                          |                   | Mid                  | 3549.99                | 636666        | 3519.66                           | 634644                          | 102                |      | 7876                          | 636192           | 0                              | 1                                     | 1 (6)                               |
|           |                          |                   | High                 | 3787.5                 | 652500        | 3684.81                           | 645654                          | 504                |      | 8041                          | 652032           | 6                              | 1                                     | 1 (6)                               |
| 30        | 160                      | Downlink & Uplink | Low                  | 3315                   | 621000        | 3300.6                            | 620040                          | 0                  | 30   | 7711                          | 620352           | 0                              | 0                                     | 1 (6)                               |
|           |                          |                   | Mid                  | 3549.99                | 636666        | 3517.23                           | 634482                          | 102                |      | 7874                          | 636000           | 6                              | 2                                     | 0 (2)                               |
|           |                          |                   | High                 | 3784.98                | 652332        | 3679.86                           | 645324                          | 504                |      | 8037                          | 651648           | 0                              | 1                                     | 0 (2)                               |
| 40        | 216                      | Downlink & Uplink | Low                  | 3320.01                | 621334        | 3300.57                           | 620038                          | 0                  | 30   | 7711                          | 620352           | 2                              | 0                                     | 1 (6)                               |
|           |                          |                   | Mid                  | 3549.99                | 636666        | 3512.19                           | 634146                          | 102                |      | 7871                          | 635712           | 6                              | 2                                     | 1 (6)                               |
|           |                          |                   | High                 | 3780                   | 652000        | 3669.84                           | 644656                          | 504                |      | 8030                          | 650976           | 8                              | 0                                     | 0 (2)                               |
| 50        | 270                      | Downlink & Uplink | Low                  | 3325.02                | 621668        | 3300.72                           | 620048                          | 0                  | 30   | 7711                          | 620352           | 4                              | 3                                     | 0 (2)                               |
|           |                          |                   | Mid                  | 3549.99                | 636666        | 3507.33                           | 633822                          | 102                |      | 7867                          | 635328           | 6                              | 1                                     | 0 (2)                               |
|           |                          |                   | High                 | 3774.99                | 651666        | 3659.97                           | 643998                          | 504                |      | 8024                          | 650400           | 6                              | 3                                     | 1 (6)                               |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-3 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.1.78-2: Test frequencies for NR operating band n78, SCS 30 kHz and  $\Delta F_{\text{Raster}}$  30 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 Index [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetTo PointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|------------------|--|--|--------------------------------------|
| 10        | 24                       | Downlink & Uplink | Low  | 3305.01              | 620334                 | 3300.69       | 620046                            | 0                               | 30                 | 7711 | 620352                        | 18               | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3508.95       | 633930                            | 102                             |                    | 7881 | 636672                        | 6                | 0  | 2 (2)                                  | 208                                  |
|           |                          |                   | High | 3795                 | 653000                 | 3609.24       | 640616                            | 504                             |                    | 8051 | 652992                        | 16               | 0  | 1 (1)                                  | 1010                                 |
| 15        | 38                       | Downlink & Uplink | Low  | 3307.5               | 620500                 | 3300.66       | 620044                            | 0                               | 30                 | 7711 | 620352                        | 20               | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3506.43       | 633762                            | 102                             |                    | 7879 | 636480                        | 6                | 0  | 1 (1)                                  | 206                                  |
|           |                          |                   | High | 3792.48              | 652832                 | 3604.2        | 640280                            | 504                             |                    | 8048 | 652704                        | 16               | 0  | 3 (3)                                  | 1014                                 |
| 20        | 51                       | Downlink & Uplink | Low  | 3310.02              | 620668                 | 3300.84       | 620056                            | 0                               | 30                 | 7711 | 620352                        | 8                | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3504.09       | 633606                            | 102                             |                    | 7878 | 636384                        | 18               | 0  | 3 (3)                                  | 210                                  |
|           |                          |                   | High | 3789.99              | 652666                 | 3599.37       | 639958                            | 504                             |                    | 8044 | 652320                        | 2                | 0  | 1 (1)                                  | 1010                                 |
| 25        | 65                       | Downlink & Uplink | Low  | 3312.51              | 620834                 | 3300.81       | 620054                            | 0                               | 30                 | 7711 | 620352                        | 10               | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3501.57       | 633438                            | 102                             |                    | 7876 | 636192                        | 18               | 0  | 2 (2)                                  | 208                                  |
|           |                          |                   | High | 3787.5               | 652500                 | 3594.36       | 639624                            | 504                             |                    | 8041 | 652032                        | 0                | 0  | 3 (3)                                  | 1014                                 |
| 30        | 78                       | Downlink & Uplink | Low  | 3315                 | 621000                 | 3300.96       | 620064                            | 0                               | 30                 | 7711 | 620352                        | 0                | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3499.23       | 633282                            | 102                             |                    | 7874 | 636000                        | 6                | 0  | 1 (1)                                  | 206                                  |
|           |                          |                   | High | 3784.98              | 652332                 | 3589.5        | 639300                            | 504                             |                    | 8037 | 651648                        | 12               | 0  | 0 (0)                                  | 1008                                 |
| 40        | 106                      | Downlink & Uplink | Low  | 3320.01              | 621334                 | 3300.93       | 620062                            | 0                               | 30                 | 7711 | 620352                        | 2                | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3494.19       | 632946                            | 102                             |                    | 7871 | 635712                        | 6                | 0  | 3 (3)                                  | 210                                  |
|           |                          |                   | High | 3780                 | 652000                 | 3579.48       | 638632                            | 504                             |                    | 8030 | 650976                        | 8                | 0  | 0 (0)                                  | 1008                                 |
| 50        | 133                      | Downlink & Uplink | Low  | 3325.02              | 621668                 | 3301.08       | 620072                            | 0                               | 30                 | 7711 | 620352                        | 16               | 0  | 1 (1)                                  | 2                                    |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3489.33       | 632622                            | 102                             |                    | 7867 | 635328                        | 18               | 0  | 0 (0)                                  | 204                                  |
|           |                          |                   | High | 3774.99              | 651666                 | 3569.61       | 637974                            | 504                             |                    | 8024 | 650400                        | 18               | 0  | 3 (3)                                  | 1014                                 |
| 60        | 162                      | Downlink & Uplink | Low  | 3330                 | 622000                 | 3300.84       | 620056                            | 0                               | 30                 | 7711 | 620352                        | 8                | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3484.11       | 632274                            | 102                             |                    | 7864 | 635040                        | 6                | 0  | 3 (3)                                  | 210                                  |
|           |                          |                   | High | 3769.98              | 651332                 | 3559.38       | 637292                            | 504                             |                    | 8016 | 649632                        | 4                | 0  | 0 (0)                                  | 1008                                 |
| 80        | 217                      | Downlink & Uplink | Low  | 3340.02              | 622668                 | 3300.96       | 620064                            | 0                               | 30                 | 7711 | 620352                        | 0                | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3474.21       | 631614                            | 102                             |                    | 7857 | 634368                        | 18               | 0  | 2 (2)                                  | 208                                  |
|           |                          |                   | High | 3759.99              | 650666                 | 3539.49       | 635966                            | 504                             |                    | 8003 | 648384                        | 10               | 0  | 3 (3)                                  | 1014                                 |
| 90        | 245                      | Downlink & Uplink | Low  | 3345                 | 623000                 | 3300.9        | 620060                            | 0                               | 30                 | 7711 | 620352                        | 4                | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3469.17       | 631278                            | 102                             |                    | 7853 | 633984                        | 18               | 0  | 0 (0)                                  | 204                                  |
|           |                          |                   | High | 3754.98              | 650332                 | 3529.44       | 635296                            | 504                             |                    | 7996 | 647712                        | 8                | 0  | 3 (3)                                  | 1014                                 |
| 100       | 273                      | Downlink &        | Low  | 3350.01              | 623334                 | 3300.87       | 620058                            | 0                               | 30                 | 7711 | 620352                        | 6                | 0  | 2 (2)                                  | 4                                    |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3464.13       | 630942                            | 102                             |                    | 7850 | 633696                        | 18               | 0  | 2 (2)                                  | 208                                  |

|   |  |        |      |      |        |         |        |     |      |        |   |   |       |      |
|---|--|--------|------|------|--------|---------|--------|-----|------|--------|---|---|-------|------|
|   |  | Uplink | High | 3750 | 650000 | 3519.42 | 634628 | 504 | 7989 | 647040 | 4 | 0 | 3 (3) | 1014 |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |  |        |      |      |        |         |        |     |      |        |   |   |       |      |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta f_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |  |        |      |      |        |         |        |     |      |        |   |   |       |      |

Table 4.3.1.1.78-3: Test frequencies for NR operating band n78, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  30 kHz without CORESET#0.

| CBW [MHz] | carrierBand width [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPointA [ARFCN] | offsetToCarrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|-----------|--------------------------|-------------------|------|----------------------|------------------------|---------------|---------------------------------|------------------------|--------------------|------|-------------------------------|
| 10        | 11                       | Downlink & Uplink | Low  | 3305.01              | 620334                 | 3301.05       | 620070                          | 0                      | 30                 | -    | 620310                        |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3472.59       | 631506                          | 102                    |                    | -    | 636642                        |
|           |                          |                   | High | 3795                 | 653000                 | 3428.16       | 628544                          | 504                    |                    | -    | 652976                        |
| 15        | 18                       | Downlink & Uplink | Low  | 3307.5               | 620500                 | 3301.02       | 620068                          | 0                      | 30                 | -    | 620308                        |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3470.07       | 631338                          | 102                    |                    | -    | 636474                        |
|           |                          |                   | High | 3792.48              | 652832                 | 3423.12       | 628208                          | 504                    |                    | -    | 652640                        |
| 20        | 24                       | Downlink & Uplink | Low  | 3310.02              | 620668                 | 3301.38       | 620092                          | 0                      | 30                 | -    | 620332                        |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3467.91       | 631194                          | 102                    |                    | -    | 636330                        |
|           |                          |                   | High | 3789.99              | 652666                 | 3418.47       | 627898                          | 504                    |                    | -    | 652330                        |
| 25        | 31                       | Downlink & Uplink | Low  | 3312.51              | 620834                 | 3301.35       | 620090                          | 0                      | 30                 | -    | 620330                        |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3465.39       | 631026                          | 102                    |                    | -    | 636162                        |
|           |                          |                   | High | 3787.5               | 652500                 | 3413.46       | 627564                          | 504                    |                    | -    | 651996                        |
| 30        | 38                       | Downlink & Uplink | Low  | 3315                 | 621000                 | 3301.32       | 620088                          | 0                      | 30                 | -    | 620328                        |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3462.87       | 630858                          | 102                    |                    | -    | 635994                        |
|           |                          |                   | High | 3784.98              | 652332                 | 3408.42       | 627228                          | 504                    |                    | -    | 651660                        |
| 40        | 51                       | Downlink & Uplink | Low  | 3320.01              | 621334                 | 3301.65       | 620110                          | 0                      | 30                 | -    | 620350                        |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3458.19       | 630546                          | 102                    |                    | -    | 635682                        |
|           |                          |                   | High | 3780                 | 652000                 | 3398.76       | 626584                          | 504                    |                    | -    | 651016                        |
| 50        | 65                       | Downlink & Uplink | Low  | 3325.02              | 621668                 | 3301.62       | 620108                          | 0                      | 30                 | -    | 620348                        |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3453.15       | 630210                          | 102                    |                    | -    | 635346                        |
|           |                          |                   | High | 3774.99              | 651666                 | 3388.71       | 625914                          | 504                    |                    | -    | 650346                        |
| 60        | 79                       | Downlink & Uplink | Low  | 3330                 | 622000                 | 3301.56       | 620104                          | 0                      | 30                 | -    | 620344                        |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3448.11       | 629874                          | 102                    |                    | -    | 635010                        |
|           |                          |                   | High | 3769.98              | 651332                 | 3378.66       | 625244                          | 504                    |                    | -    | 649676                        |
| 80        | 107                      | Downlink & Uplink | Low  | 3340.02              | 622668                 | 3301.5        | 620100                          | 0                      | 30                 | -    | 620340                        |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3438.03       | 629202                          | 102                    |                    | -    | 634338                        |
|           |                          |                   | High | 3759.99              | 650666                 | 3358.59       | 623906                          | 504                    |                    | -    | 648338                        |
| 90        | 121                      | Downlink & Uplink | Low  | 3345                 | 623000                 | 3301.44       | 620096                          | 0                      | 30                 | -    | 620336                        |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3432.99       | 628866                          | 102                    |                    | -    | 634002                        |
|           |                          |                   | High | 3754.98              | 650332                 | 3348.54       | 623236                          | 504                    |                    | -    | 647668                        |
| 100       | 135                      | Downlink & Uplink | Low  | 3350.01              | 623334                 | 3301.41       | 620094                          | 0                      | 30                 | -    | 620334                        |
|           |                          |                   | Mid  | 3549.99              | 636666                 | 3427.95       | 628530                          | 102                    |                    | -    | 633666                        |
|           |                          |                   | High | 3750                 | 650000                 | 3338.52       | 622568                          | 504                    |                    | -    | 647000                        |

Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{\text{SSB}} = 31$ , controlResourceSetZero=0 and searchSpaceZero = 0 (TS 38.213 [22], clause 13).

## 4.3.1.1.79 Reference test frequencies for NR operating band n79

**Table 4.3.1.1.79-1: Test frequencies for NR operating band n79, SCS 15 kHz and  $\Delta F_{\text{Raster}}$  15 kHz**

| <b>CBW [MHz]</b>   | <b>carrier Bandwidth [PRBs]</b> | <b>Range</b>      |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absolute FrequencyPoint A [ARFCN]</b> | <b>offsetTo Carrier [Carrier PRBs]</b> | <b>SS block SCS [kHz]</b> | <b>GSCN</b> | <b>absolute FrequencySSB [ARFCN]</b> | <b><math>k_{\text{SSB}}</math></b> | <b>Offset Carrier CORE SET#0 Index (Offset [RBs]) Note 2</b> | <b>CORE SET#0 Index (Offset [RBs]) Note 1</b> | <b>offsetToPointA (SIB1) [PRBs] Note 1</b> |  |  |
|--|---------------------------------|-------------------|------|-----------------------------|-------------------------------|----------------------|--|--|---------------------------|-------------|--------------------------------------|------------------------------------|--|---|--|--|--|
| 40   | 216                             | Downlink & Uplink | Low  | 4420.02                     | 694668                        | 4400.58              | 693372                                   | 0                                      | 30                        | 8480        | 694176                               | 0                                  | 43   | 0 (4)   | 47   |  |  |
|  |                                 |                   | Mid  | 4699.98                     | 713332                        | 4662.18              | 710812                                   | 102                                    |                           | 8672        | 712608                               | 8                                  | 23   | 0 (4)   | 129  |  |  |
|  |                                 |                   | High | 4980                        | 732000                        | 4869.84              | 724656                                   | 504                                    |                           | 8864        | 731040                               | 0                                  | 4  | 0 (4)   | 512  |  |  |
| 50   | 270                             | Downlink & Uplink | Low  | 4425                        | 695000                        | 4400.7               | 693380                                   | 0                                      | 30                        | 8480        | 694176                               | 4                                  | 42   | 0 (4)   | 46   |  |  |
|  |                                 |                   | Mid  | 4699.98                     | 713332                        | 4657.32              | 710488                                   | 102                                    |                           | 8672        | 712608                               | 8                                  | 50   | 0 (4)   | 156  |  |  |
|  |                                 |                   | High | 4974.99                     | 731666                        | 4859.97              | 723998                                   | 504                                    |                           | 8864        | 731040                               | 10                                 | 58   | 0 (4)   | 566  |  |  |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-5 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |                                 |                   |      |                             |                               |                      |  |  |                           |             |                                      |                                    |  |   |  |  |  |
| Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.  |                                 |                   |      |                             |                               |                      |  |  |                           |             |                                      |                                    |  |   |  |  |  |

Table 4.3.1.1.79-2: Test frequencies for NR operating band n79, SCS 30 kHz and  $\Delta F_{\text{Raster}}$  30 kHz

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 Index [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|---|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|------------------|--|--|-------------------------------------|
| 40  | 106                      | Downlink & Uplink | Low  | 4420.02              | 694668                 | 4400.94       | 693396                            | 0                               | 30                 | 8480 | 694176                        | 12               | 18   | 1 (4)                                  | 44                                  |
|   |                          |                   | Mid  | 4700.01              | 713334                 | 4644.21       | 709614                            | 102                             |                    | 8672 | 712608                        | 18               | 8  | 1 (4)                                  | 228                                 |
|   |                          |                   | High | 4980                 | 732000                 | 4779.48       | 718632                            | 504                             |                    | 8864 | 731040                        | 0                | 3  | 0 (0)                                  | 1014                                |
| 50  | 133                      | Downlink & Uplink | Low  | 4425                 | 695000                 | 4401.06       | 693404                            | 0                               | 30                 | 8480 | 694176                        | 4                | 18   | 1 (4)                                  | 44                                  |
|   |                          |                   | Mid  | 4700.01              | 713334                 | 4639.35       | 709290                            | 102                             |                    | 8672 | 712608                        | 6                | 22   | 1 (4)                                  | 256                                 |
|   |                          |                   | High | 4974.99              | 731666                 | 4769.61       | 717974                            | 504                             |                    | 8864 | 731040                        | 10               | 26   | 1 (4)                                  | 1068                                |
| 60  | 162                      | Downlink & Uplink | Low  | 4430.01              | 695334                 | 4400.85       | 693390                            | 0                               | 30                 | 8480 | 694176                        | 18               | 18   | 1 (4)                                  | 44                                  |
|   |                          |                   | Mid  | 4700.01              | 713334                 | 4634.13       | 708942                            | 102                             |                    | 8672 | 712608                        | 18               | 36   | 1 (4)                                  | 284                                 |
|   |                          |                   | High | 4969.98              | 731332                 | 4759.38       | 717292                            | 504                             |                    | 8864 | 731040                        | 20               | 54   | 1 (4)                                  | 1124                                |
| 80  | 217                      | Downlink & Uplink | Low  | 4440                 | 696000                 | 4400.94       | 693396                            | 0                               | 30                 | 8480 | 694176                        | 12               | 18   | 1 (4)                                  | 44                                  |
|   |                          |                   | Mid  | 4700.01              | 713334                 | 4624.23       | 708282                            | 102                             |                    | 8656 | 711072                        | 6                | 0  | 1 (4)                                  | 212                                 |
|   |                          |                   | High | 4959.99              | 730666                 | 4739.49       | 715966                            | 504                             |                    | 8848 | 729504                        | 2                | 46   | 1 (4)                                  | 1108                                |
| 100   | 273                      | Downlink & Uplink | Low  | 4450.02              | 696668                 | 4400.88       | 693392                            | 0                               | 30                 | 8480 | 694176                        | 16               | 18   | 1 (4)                                  | 44                                  |
|   |                          |                   | Mid  | 4700.01              | 713334                 | 4614.15       | 707610                            | 102                             |                    | 8656 | 711072                        | 6                | 28   | 1 (4)                                  | 268                                 |
|   |                          |                   | High | 4950                 | 730000                 | 4719.42       | 714628                            | 504                             |                    | 8832 | 727968                        | 20               | 37   | 1 (4)                                  | 1090                                |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-6 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |                   |      |                      |                        |               |                                   |                                 |                    |      |                               |                  |  |  |                                     |

Table 4.3.1.1.79-3: Test frequencies for NR operating band n79, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  30 kHz without CORESET#0.

| CBW [MHz]  | carrierBand width [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequency PointA [ARFCN] | offsetTo Carrier [PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|--|--------------------------|-------------------|------|----------------------|------------------------|---------------|----------------------------------|-------------------------|--------------------|------|-------------------------------|
| 40   | 51                       | Downlink & Uplink | Low  | 4420.02              | 694668                 | 4401.66       | 693444                           | 0                       | 30                 | -    | 693684                        |
|  |                          |                   | Mid  | 4700.01              | 713334                 | 4608.21       | 707214                           | 102                     |                    | -    | 712350                        |
|  |                          |                   | High | 4980                 | 732000                 | 4598.76       | 706584                           | 504                     |                    | -    | 731016                        |
| 50   | 65                       | Downlink & Uplink | Low  | 4425                 | 695000                 | 4401.6        | 693440                           | 0                       | 30                 | -    | 693680                        |
|  |                          |                   | Mid  | 4700.01              | 713334                 | 4603.17       | 706878                           | 102                     |                    | -    | 712014                        |
|  |                          |                   | High | 4974.99              | 731666                 | 4588.71       | 705914                           | 504                     |                    | -    | 730346                        |
| 60   | 79                       | Downlink & Uplink | Low  | 4430.01              | 695334                 | 4401.57       | 693438                           | 0                       | 30                 | -    | 693678                        |
|  |                          |                   | Mid  | 4700.01              | 713334                 | 4598.13       | 706542                           | 102                     |                    | -    | 711678                        |
|  |                          |                   | High | 4969.98              | 731332                 | 4578.66       | 705244                           | 504                     |                    | -    | 729676                        |
| 80   | 107                      | Downlink & Uplink | Low  | 4440                 | 696000                 | 4401.48       | 693432                           | 0                       | 30                 | -    | 693672                        |
|  |                          |                   | Mid  | 4700.01              | 713334                 | 4588.05       | 705870                           | 102                     |                    | -    | 711006                        |
|  |                          |                   | High | 4959.99              | 730666                 | 4558.59       | 703906                           | 504                     |                    | -    | 728338                        |
| 100  | 135                      | Downlink & Uplink | Low  | 4450.02              | 696668                 | 4401.42       | 693428                           | 0                       | 30                 | -    | 693668                        |
|  |                          |                   | Mid  | 4700.01              | 713334                 | 4577.97       | 705198                           | 102                     |                    | -    | 710334                        |
|  |                          |                   | High | 4950                 | 730000                 | 4538.52       | 702568                           | 504                     |                    | -    | 727000                        |
| Note: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{\text{SSB}} = 31$ , $\text{controlResourceSetZero} = 0$ and $\text{searchSpaceZero} = 0$ (TS 38.213 [22], clause 13). |                          |                   |      |                      |                        |               |                                  |                         |                    |      |                               |

## 4.3.1.1.80

Reference test frequencies for NR operating band n80 (SUL)

**Table 4.3.1.1.80-1: Test frequencies for NR operating band n80 and SCS 15 kHz**

| <b>Bandwidth<br/>[MHz]</b> | <b>carrierBand<br/>width<br/>[PRBs]</b> | <b>Range</b> |      | <b>Carrier<br/>centre<br/>[MHz]</b> | <b>Carrier<br/>centre<br/>[ARFCN]</b> | <b>point A<br/>[MHz]</b> | <b>absolu<br/>teFreq<br/>uency<br/>PointA<br/>[ARFC<br/>N]</b> | <b>offsetTo<br/>Carrier<br/>[PRBs]</b> |
|----------------------------|---|--------------|------|-------------------------------------|---------------------------------------|--------------------------|--|--|
| 5                          | 25                                      | Uplink       | Low  | 1712.5                              | 342500                                | 1710.25                  | 342050   | 0                                      |
|                            |   |              | Mid  | 1747.5                              | 349500                                | 1349.61                  | 269922   | 2198                                   |
|                            |   |              | High | 1782.5                              | 356500                                | 1780.07                  | 356014   | 1                                      |
| 10                         | 52                                      | Uplink       | Low  | 1715                                | 343000                                | 1710.32                  | 342064   | 0                                      |
|                            |   |              | Mid  | 1747.5                              | 349500                                | 1347.18                  | 269436   | 2198                                   |
|                            |   |              | High | 1780                                | 356000                                | 1775.14                  | 355028   | 1                                      |
| 15                         | 79                                      | Uplink       | Low  | 1717.5                              | 343500                                | 1710.39                  | 342078   | 0                                      |
|                            |   |              | Mid  | 1747.5                              | 349500                                | 1344.75                  | 268950   | 2198                                   |
|                            |   |              | High | 1777.5                              | 355500                                | 1770.21                  | 354042   | 1                                      |
| 20                         | 106                                     | Uplink       | Low  | 1720                                | 344000                                | 1710.46                  | 342092   | 0                                      |
|                            |   |              | Mid  | 1747.5                              | 349500                                | 1342.32                  | 268464   | 2198                                   |
|                            |   |              | High | 1775                                | 355000                                | 1765.28                  | 353056   | 1                                      |
| 25                         | 133                                     | Uplink       | Low  | 1722.5                              | 344500                                | 1710.53                  | 342106   | 0                                      |
|                            |   |              | Mid  | 1747.5                              | 349500                                | 1339.89                  | 267978   | 2198                                   |
|                            |   |              | High | 1772.5                              | 354500                                | 1760.35                  | 352070   | 1                                      |
| 30                         | 160                                     | Uplink       | Low  | 1725                                | 345000                                | 1710.6                   | 342120   | 0                                      |
|                            |   |              | Mid  | 1747.5                              | 349500                                | 1337.46                  | 267492   | 2198                                   |
|                            |   |              | High | 1770                                | 354000                                | 1755.42                  | 351084   | 1                                      |

Table 4.3.1.1.1.80-2: Test frequencies for NR operating band n80 and SCS 30 kHz

| Bandwidth [MHz] | <i>carrierBand width</i> [PRBs] | Range  |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | <i>absoluteFrequency PointA</i> [ARFCN] | <i>offsetToCarrier</i> [PRBs] |
|-----------------|---------------------------------|--------|------|----------------------|------------------------|---------------|---|-------------------------------|
| 10              | 24                              | Uplink | Low  | 1715                 | 343000                 | 1710.68       | 342136                                  | 0                             |
|                 |                                 |        | Mid  | 1747.5               | 349500                 | 951.9         | 190380                                  | 2198                          |
|                 |                                 |        | High | 1780                 | 356000                 | 1775.32       | 355064                                  | 1                             |
| 15              | 38                              | Uplink | Low  | 1717.5               | 343500                 | 1710.66       | 342132                                  | 0                             |
|                 |                                 |        | Mid  | 1747.5               | 349500                 | 949.38        | 189876                                  | 2198                          |
|                 |                                 |        | High | 1777.5               | 355500                 | 1770.3        | 354060                                  | 1                             |
| 20              | 51                              | Uplink | Low  | 1720                 | 344000                 | 1710.82       | 342164                                  | 0                             |
|                 |                                 |        | Mid  | 1747.5               | 349500                 | 947.04        | 189408                                  | 2198                          |
|                 |                                 |        | High | 1775                 | 355000                 | 1765.46       | 353092                                  | 1                             |
| 25              | 65                              | Uplink | Low  | 1722.5               | 344500                 | 1710.8        | 342160                                  | 0                             |
|                 |                                 |        | Mid  | 1747.5               | 349500                 | 944.52        | 188904                                  | 2198                          |
|                 |                                 |        | High | 1772.5               | 354500                 | 1760.44       | 352088                                  | 1                             |
| 30              | 78                              | Uplink | Low  | 1725                 | 345000                 | 1710.96       | 342192                                  | 0                             |
|                 |                                 |        | Mid  | 1747.5               | 349500                 | 942.18        | 188436                                  | 2198                          |
|                 |                                 |        | High | 1770                 | 354000                 | 1755.6        | 351120                                  | 1                             |

Table 4.3.1.1.1.80-3: Test frequencies for NR operating band n80 and SCS 60 kHz

| Bandwidth [MHz] | <i>carrierBand width</i> [PRBs] | Range  |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | <i>absoluteFrequency PointA</i> [ARFCN] | <i>offsetToCarrier</i> [PRBs] |
|-----------------|---------------------------------|--------|------|----------------------|------------------------|---------------|---|-------------------------------|
| 10              | 11                              | Uplink | Low  | 1715                 | 343000                 | 1711.04       | 342208                                  | 0                             |
|                 |                                 |        | Mid  | 1747.5               | 349500                 | 160.98        | 32196                                   | 2198                          |
|                 |                                 |        | High | 1780                 | 356000                 | 1775.32       | 355064                                  | 1                             |
| 15              | 18                              | Uplink | Low  | 1717.5               | 343500                 | 1711.02       | 342204                                  | 0                             |
|                 |                                 |        | Mid  | 1747.5               | 349500                 | 158.46        | 31692                                   | 2198                          |
|                 |                                 |        | High | 1777.5               | 355500                 | 1770.3        | 354060                                  | 1                             |
| 20              | 24                              | Uplink | Low  | 1720                 | 344000                 | 1711.36       | 342272                                  | 0                             |
|                 |                                 |        | Mid  | 1747.5               | 349500                 | 156.3         | 31260                                   | 2198                          |
|                 |                                 |        | High | 1775                 | 355000                 | 1765.64       | 353128                                  | 1                             |
| 25              | 31                              | Uplink | Low  | 1722.5               | 344500                 | 1711.34       | 342268                                  | 0                             |
|                 |                                 |        | Mid  | 1747.5               | 349500                 | 153.78        | 30756                                   | 2198                          |
|                 |                                 |        | High | 1772.5               | 354500                 | 1760.62       | 352124                                  | 1                             |
| 30              | 38                              | Uplink | Low  | 1725                 | 345000                 | 1711.32       | 342264                                  | 0                             |
|                 |                                 |        | Mid  | 1747.5               | 349500                 | 151.26        | 30252                                   | 2198                          |
|                 |                                 |        | High | 1770                 | 354000                 | 1755.6        | 351120                                  | 1                             |

## 4.3.1.1.81

Reference test frequencies for NR operating band n81 (SUL)

**Table 4.3.1.1.81-1: Test frequencies for NR operating band n81 and SCS 15 kHz**

| <b>Bandwidth [MHz]</b> | <b>carrierBand width [PRBs]</b> | <b>Range</b> |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absoluteFrequency PointA [ARFC N]</b> | <b>offsetTo Carrier [PRBs]</b> |
|------------------------|---------------------------------|--------------|------|-----------------------------|-------------------------------|----------------------|--|--------------------------------|
| 5                      | 25                              | Uplink       | Low  | 882.5                       | 176500                        | 880.25               | 176050                                   | 0                              |
|                        |                                 |              | Mid  | 897.5                       | 179500                        | 499.61               | 99922                                    | 2198                           |
|                        |                                 |              | High | 912.5                       | 182500                        | 910.07               | 182014                                   | 1                              |
| 10                     | 52                              | Uplink       | Low  | 885                         | 177000                        | 880.32               | 176064                                   | 0                              |
|                        |                                 |              | Mid  | 897.5                       | 179500                        | 497.18               | 99436                                    | 2198                           |
|                        |                                 |              | High | 910                         | 182000                        | 905.14               | 181028                                   | 1                              |
| 15                     | 79                              | Uplink       | Low  | 887.5                       | 177500                        | 880.39               | 176078                                   | 0                              |
|                        |                                 |              | Mid  | 897.5                       | 179500                        | 494.75               | 98950                                    | 2198                           |
|                        |                                 |              | High | 907.5                       | 181500                        | 900.21               | 180042                                   | 1                              |
| 20                     | 106                             | Uplink       | Low  | 890                         | 178000                        | 880.46               | 176092                                   | 0                              |
|                        |                                 |              | Mid  | 897.5                       | 179500                        | 492.32               | 98464                                    | 2198                           |
|                        |                                 |              | High | 905                         | 181000                        | 895.28               | 179056                                   | 1                              |

**Table 4.3.1.1.81-2: Test frequencies for NR operating band n81 and SCS 30 kHz**

| <b>Bandwidth [MHz]</b> | <b>carrierBand width [PRBs]</b> | <b>Range</b> |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absoluteFrequency PointA [ARFC N]</b> | <b>offsetTo Carrier [PRBs]</b> |
|------------------------|---------------------------------|--------------|------|-----------------------------|-------------------------------|----------------------|--|--------------------------------|
| 10                     | 24                              | Uplink       | Low  | 885                         | 177000                        | 880.68               | 176136                                   | 0                              |
|                        |                                 |              | Mid  | 897.5                       | 179500                        | 101.9                | 20380                                    | 2198                           |
|                        |                                 |              | High | 910                         | 182000                        | 905.32               | 181064                                   | 1                              |
| 15                     | 38                              | Uplink       | Low  | 887.5                       | 177500                        | 880.66               | 176132                                   | 0                              |
|                        |                                 |              | Mid  | 897.5                       | 179500                        | 99.38                | 19876                                    | 2198                           |
|                        |                                 |              | High | 907.5                       | 181500                        | 900.3                | 180060                                   | 1                              |
| 20                     | 51                              | Uplink       | Low  | 890                         | 178000                        | 880.82               | 176164                                   | 0                              |
|                        |                                 |              | Mid  | 897.5                       | 179500                        | 97.04                | 19408                                    | 2198                           |
|                        |                                 |              | High | 905                         | 181000                        | 895.46               | 179092                                   | 1                              |

## 4.3.1.1.1.82

Reference test frequencies for NR operating band n82 (SUL)

**Table 4.3.1.1.82-1: Test frequencies for NR operating band n82 and SCS 15 kHz**

| <b>Bandwidth [MHz]</b> | <b>carrierBand width [PRBs]</b> | <b>Range</b> |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absoluteFrequency PointA [ARFC N]</b> | <b>offsetTo Carrier [PRBs]</b> |
|------------------------|---------------------------------|--------------|------|-----------------------------|-------------------------------|----------------------|--|--------------------------------|
| 5                      | 25                              | Uplink       | Low  | 834.5                       | 166900                        | 832.25               | 166450                                   | 0                              |
|                        |                                 |              | Mid  | 847                         | 169400                        | 449.11               | 89822                                    | 2198                           |
|                        |                                 |              | High | 859.5                       | 171900                        | 857.07               | 171414                                   | 1                              |
| 10                     | 52                              | Uplink       | Low  | 837                         | 167400                        | 832.32               | 166464                                   | 0                              |
|                        |                                 |              | Mid  | 847                         | 169400                        | 446.68               | 89336                                    | 2198                           |
|                        |                                 |              | High | 857                         | 171400                        | 852.14               | 170428                                   | 1                              |
| 15                     | 79                              | Uplink       | Low  | 839.5                       | 167900                        | 832.39               | 166478                                   | 0                              |
|                        |                                 |              | Mid  | 847                         | 169400                        | 444.25               | 88850                                    | 2198                           |
|                        |                                 |              | High | 854.5                       | 170900                        | 847.21               | 169442                                   | 1                              |
| 20                     | 106                             | Uplink       | Low  | 842                         | 168400                        | 832.46               | 166492                                   | 0                              |
|                        |                                 |              | Mid  | 847                         | 169400                        | 441.82               | 88364                                    | 2198                           |
|                        |                                 |              | High | 852                         | 170400                        | 842.28               | 168456                                   | 1                              |

**Table 4.3.1.1.82-2: Test frequencies for NR operating band n82 and SCS 30 kHz**

| <b>Bandwidth [MHz]</b> | <b>carrierBand width [PRBs]</b> | <b>Range</b> |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absoluteFrequency PointA [ARFC N]</b> | <b>offsetTo Carrier [PRBs]</b> |
|------------------------|---------------------------------|--------------|------|-----------------------------|-------------------------------|----------------------|--|--------------------------------|
| 10                     | 24                              | Uplink       | Low  | 837                         | 167400                        | 832.68               | 166536                                   | 0                              |
|                        |                                 |              | Mid  | 847                         | 169400                        | 51.4                 | 10280                                    | 2198                           |
|                        |                                 |              | High | 857                         | 171400                        | 852.32               | 170464                                   | 1                              |
| 15                     | 38                              | Uplink       | Low  | 839.5                       | 167900                        | 832.66               | 166532                                   | 0                              |
|                        |                                 |              | Mid  | 847                         | 169400                        | 48.88                | 9776                                     | 2198                           |
|                        |                                 |              | High | 854.5                       | 170900                        | 847.3                | 169460                                   | 1                              |
| 20                     | 51                              | Uplink       | Low  | 842                         | 168400                        | 832.82               | 166564                                   | 0                              |
|                        |                                 |              | Mid  | 847                         | 169400                        | 46.54                | 9308                                     | 2198                           |
|                        |                                 |              | High | 852                         | 170400                        | 842.46               | 168492                                   | 1                              |

## 4.3.1.1.1.83

Reference test frequencies for NR operating band n83 (SUL)

**Table 4.3.1.1.83-1: Test frequencies for NR operating band n83 and SCS 15 kHz**

| <b>Bandwidth [MHz]</b> | <b>carrierBand width [PRBs]</b> | <b>Range</b> |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absoluteFrequency PointA [ARFC N]</b> | <b>offsetTo Carrier [PRBs]</b> |
|------------------------|---------------------------------|--------------|------|-----------------------------|-------------------------------|----------------------|--|--------------------------------|
| 5                      | 25                              | Uplink       | Low  | 705.5                       | 141100                        | 703.25               | 140650                                   | 0                              |
|                        |                                 |              | Mid  | 725.5                       | 145100                        | 327.61               | 65522                                    | 2198                           |
|                        |                                 |              | High | 745.5                       | 149100                        | 743.07               | 148614                                   | 1                              |
| 10                     | 52                              | Uplink       | Low  | 708                         | 141600                        | 703.32               | 140664                                   | 0                              |
|                        |                                 |              | Mid  | 725.5                       | 145100                        | 325.18               | 65036                                    | 2198                           |
|                        |                                 |              | High | 743                         | 148600                        | 738.14               | 147628                                   | 1                              |
| 15                     | 79                              | Uplink       | Low  | 710.5                       | 142100                        | 703.39               | 140678                                   | 0                              |
|                        |                                 |              | Mid  | 725.5                       | 145100                        | 322.75               | 64550                                    | 2198                           |
|                        |                                 |              | High | 740.5                       | 148100                        | 733.21               | 146642                                   | 1                              |
| 20                     | 106                             | Uplink       | Low  | 713                         | 142600                        | 703.46               | 140692                                   | 0                              |
|                        |                                 |              | Mid  | 725.5                       | 145100                        | 320.32               | 64064                                    | 2198                           |
|                        |                                 |              | High | 738                         | 147600                        | 728.28               | 145656                                   | 1                              |

**Table 4.3.1.1.83-2: Test frequencies for NR operating band n83 and SCS 30 kHz**

| <b>Bandwidth [MHz]</b> | <b>carrierBand width [PRBs]</b> | <b>Range</b> |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absoluteFrequency PointA [ARFC N]</b> | <b>offsetTo Carrier [PRBs]</b> |
|------------------------|---------------------------------|--------------|------|-----------------------------|-------------------------------|----------------------|--|--------------------------------|
| 10                     | 24                              | Uplink       | Low  | 708                         | 141600                        | 703.68               | 140736                                   | 0                              |
|                        |                                 |              | Mid  | 725.5                       | 145100                        | 642.34               | 128468                                   | 219                            |
|                        |                                 |              | High | 743                         | 148600                        | 738.32               | 147664                                   | 1                              |
| 15                     | 38                              | Uplink       | Low  | 710.5                       | 142100                        | 703.66               | 140732                                   | 0                              |
|                        |                                 |              | Mid  | 725.5                       | 145100                        | 639.82               | 127964                                   | 219                            |
|                        |                                 |              | High | 740.5                       | 148100                        | 733.3                | 146660                                   | 1                              |
| 20                     | 51                              | Uplink       | Low  | 713                         | 142600                        | 703.82               | 140764                                   | 0                              |
|                        |                                 |              | Mid  | 725.5                       | 145100                        | 637.48               | 127496                                   | 219                            |
|                        |                                 |              | High | 738                         | 147600                        | 728.46               | 145692                                   | 1                              |

## 4.3.1.1.1.84

Reference test frequencies for NR operating band n84 (SUL)

**Table 4.3.1.1.84-1: Test frequencies for NR operating band n84 and SCS 15 kHz**

| <b>Bandwidth [MHz]</b> | <b>carrierBand width [PRBs]</b> | <b>Range</b> |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absoluteFrequency PointA [ARFC N]</b> | <b>offsetTo Carrier [PRBs]</b> |
|------------------------|---------------------------------|--------------|------|-----------------------------|-------------------------------|----------------------|--|--------------------------------|
| 5                      | 25                              | Uplink       | Low  | 1922.5                      | 384500                        | 1920.25              | 384050                                   | 0                              |
|                        |                                 |              | Mid  | 1950                        | 390000                        | 1552.11              | 310422                                   | 2198                           |
|                        |                                 |              | High | 1977.5                      | 395500                        | 1975.07              | 395014                                   | 1                              |
| 10                     | 52                              | Uplink       | Low  | 1925                        | 385000                        | 1920.32              | 384064                                   | 0                              |
|                        |                                 |              | Mid  | 1950                        | 390000                        | 1549.68              | 309936                                   | 2198                           |
|                        |                                 |              | High | 1975                        | 395000                        | 1970.14              | 394028                                   | 1                              |
| 15                     | 79                              | Uplink       | Low  | 1927.5                      | 385500                        | 1920.39              | 384078                                   | 0                              |
|                        |                                 |              | Mid  | 1950                        | 390000                        | 1547.25              | 309450                                   | 2198                           |
|                        |                                 |              | High | 1972.5                      | 394500                        | 1965.21              | 393042                                   | 1                              |
| 20                     | 106                             | Uplink       | Low  | 1930                        | 386000                        | 1920.46              | 384092                                   | 0                              |
|                        |                                 |              | Mid  | 1950                        | 390000                        | 1544.82              | 308964                                   | 2198                           |
|                        |                                 |              | High | 1970                        | 394000                        | 1960.28              | 392056                                   | 1                              |

**Table 4.3.1.1.84-2: Test frequencies for NR operating band n84 and SCS 30 kHz**

| <b>Bandwidth [MHz]</b> | <b>carrierBand width [PRBs]</b> | <b>Range</b> |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absoluteFrequency PointA [ARFC N]</b> | <b>offsetTo Carrier [PRBs]</b> |
|------------------------|---------------------------------|--------------|------|-----------------------------|-------------------------------|----------------------|--|--------------------------------|
| 10                     | 24                              | Uplink       | Low  | 1925                        | 385000                        | 1920.68              | 384136                                   | 0                              |
|                        |                                 |              | Mid  | 1950                        | 390000                        | 1154.4               | 230880                                   | 2198                           |
|                        |                                 |              | High | 1975                        | 395000                        | 1970.32              | 394064                                   | 1                              |
| 15                     | 38                              | Uplink       | Low  | 1927.5                      | 385500                        | 1920.66              | 384132                                   | 0                              |
|                        |                                 |              | Mid  | 1950                        | 390000                        | 1151.88              | 230376                                   | 2198                           |
|                        |                                 |              | High | 1972.5                      | 394500                        | 1965.3               | 393060                                   | 1                              |
| 20                     | 51                              | Uplink       | Low  | 1930                        | 386000                        | 1920.82              | 384164                                   | 0                              |
|                        |                                 |              | Mid  | 1950                        | 390000                        | 1149.54              | 229908                                   | 2198                           |
|                        |                                 |              | High | 1970                        | 394000                        | 1960.46              | 392092                                   | 1                              |

Table 4.3.1.1.84-3: Test frequencies for NR operating band n84 and SCS 60 kHz

| Bandwidth [MHz] | <i>carrierBand width</i> [PRBs] | Range  |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | <i>absoluteFreq uency PointA</i> [ARFC N] | <i>offsetTo Carrier</i> [PRBs] |
|-----------------|---------------------------------|--------|------|----------------------|------------------------|---------------|---|--------------------------------|
| 10              | 11                              | Uplink | Low  | 1925                 | 385000                 | 1921.04       | 384208                                    | 0                              |
|                 |                                 |        | Mid  | 1950                 | 390000                 | 363.48        | 72696                                     | 2198                           |
|                 |                                 |        | High | 1975                 | 395000                 | 1970.32       | 394064                                    | 1                              |
| 15              | 18                              | Uplink | Low  | 1927.5               | 385500                 | 1921.02       | 384204                                    | 0                              |
|                 |                                 |        | Mid  | 1950                 | 390000                 | 360.96        | 72192                                     | 2198                           |
|                 |                                 |        | High | 1972.5               | 394500                 | 1965.3        | 393060                                    | 1                              |
| 20              | 24                              | Uplink | Low  | 1930                 | 386000                 | 1921.36       | 384272                                    | 0                              |
|                 |                                 |        | Mid  | 1950                 | 390000                 | 358.8         | 71760                                     | 2198                           |
|                 |                                 |        | High | 1970                 | 394000                 | 1960.64       | 392128                                    | 1                              |

4.3.1.1.85 FFS

4.3.1.1.86 Reference test frequencies for NR operating band n86 (SUL)

**Table 4.3.1.1.86-1: Test frequencies for NR operating band n86 and SCS 15 kHz**

| <b>Bandwidth [MHz]</b> | <b><i>carrierBand width [PRBs]</i></b> | <b>Range</b> |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b><i>absoluteFrequency PointA [ARFCN]</i></b> | <b><i>offsetToCarrier [PRBs]</i></b> |
|------------------------|--|--------------|------|-----------------------------|-------------------------------|----------------------|--|--------------------------------------|
| 5                      | 25                                     | Uplink       | Low  | 1712.5                      | 342500                        | 1710.25              | 342050   | 0                                    |
|                        |  |              | Mid  | 1745                        | 349000                        | 1347.11              | 269422   | 2198                                 |
|                        |  |              | High | 1777.5                      | 355500                        | 1775.07              | 355014   | 1                                    |
| 10                     | 52                                     | Uplink       | Low  | 1715                        | 343000                        | 1710.32              | 342064   | 0                                    |
|                        |  |              | Mid  | 1745                        | 349000                        | 1344.68              | 268936   | 2198                                 |
|                        |  |              | High | 1775                        | 355000                        | 1770.14              | 354028   | 1                                    |
| 15                     | 79                                     | Uplink       | Low  | 1717.5                      | 343500                        | 1710.39              | 342078   | 0                                    |
|                        |  |              | Mid  | 1745                        | 349000                        | 1342.25              | 268450   | 2198                                 |
|                        |  |              | High | 1772.5                      | 354500                        | 1765.21              | 353042   | 1                                    |
| 20                     | 106                                    | Uplink       | Low  | 1720                        | 344000                        | 1710.46              | 342092   | 0                                    |
|                        |  |              | Mid  | 1745                        | 349000                        | 1339.82              | 267964   | 2198                                 |
|                        |  |              | High | 1770                        | 354000                        | 1760.28              | 352056   | 1                                    |
| 40                     | 216                                    | Uplink       | Low  | 1730                        | 346000                        | 1710.56              | 342112   | 0                                    |
|                        |  |              | Mid  | 1745                        | 349000                        | 1329.92              | 265984   | 2198                                 |
|                        |  |              | High | 1760                        | 352000                        | 1740.38              | 348076   | 1                                    |

**Table 4.3.1.1.1.86-2: Test frequencies for NR operating band n86 and SCS 30 kHz**

| <b>Bandwidth [MHz]</b> | <b>carrierBand width [PRBs]</b> | <b>Range</b> |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absoluteFrequency PointA [ARFCN]</b> | <b>offsetTo Carrier [PRBs]</b> |
|------------------------|---------------------------------|--------------|------|-----------------------------|-------------------------------|----------------------|---|--------------------------------|
| 10                     | 24                              | Uplink       | Low  | 1715                        | 343000                        | 1710.68              | 342136                                  | 0                              |
|                        |                                 |              | Mid  | 1745                        | 349000                        | 949.4                | 189880                                  | 2198                           |
|                        |                                 |              | High | 1775                        | 355000                        | 1770.32              | 354064                                  | 1                              |
| 15                     | 38                              | Uplink       | Low  | 1717.5                      | 343500                        | 1710.66              | 342132                                  | 0                              |
|                        |                                 |              | Mid  | 1745                        | 349000                        | 946.88               | 189376                                  | 2198                           |
|                        |                                 |              | High | 1772.5                      | 354500                        | 1765.3               | 353060                                  | 1                              |
| 20                     | 51                              | Uplink       | Low  | 1720                        | 344000                        | 1710.82              | 342164                                  | 0                              |
|                        |                                 |              | Mid  | 1745                        | 349000                        | 944.54               | 188908                                  | 2198                           |
|                        |                                 |              | High | 1770                        | 354000                        | 1760.46              | 352092                                  | 1                              |
| 40                     | 106                             | Uplink       | Low  | 1730                        | 346000                        | 1710.92              | 342184                                  | 0                              |
|                        |                                 |              | Mid  | 1745                        | 349000                        | 934.64               | 186928                                  | 2198                           |
|                        |                                 |              | High | 1760                        | 352000                        | 1740.56              | 348112                                  | 1                              |

**Table 4.3.1.1.1.86-3: Test frequencies for NR operating band n86 and SCS 60 kHz**

| <b>Bandwidth [MHz]</b> | <b>carrierBand width [PRBs]</b> | <b>Range</b> |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absoluteFrequency PointA [ARFCN]</b> | <b>offsetTo Carrier [PRBs]</b> |
|------------------------|---------------------------------|--------------|------|-----------------------------|-------------------------------|----------------------|---|--------------------------------|
| 10                     | 11                              | Uplink       | Low  | 1715                        | 343000                        | 1711.04              | 342208                                  | 0                              |
|                        |                                 |              | Mid  | 1745                        | 349000                        | 158.48               | 31696                                   | 2198                           |
|                        |                                 |              | High | 1775                        | 355000                        | 1770.32              | 354064                                  | 1                              |
| 15                     | 18                              | Uplink       | Low  | 1717.5                      | 343500                        | 1711.02              | 342204                                  | 0                              |
|                        |                                 |              | Mid  | 1745                        | 349000                        | 155.96               | 31192                                   | 2198                           |
|                        |                                 |              | High | 1772.5                      | 354500                        | 1765.3               | 353060                                  | 1                              |
| 20                     | 24                              | Uplink       | Low  | 1720                        | 344000                        | 1711.36              | 342272                                  | 0                              |
|                        |                                 |              | Mid  | 1745                        | 349000                        | 153.8                | 30760                                   | 2198                           |
|                        |                                 |              | High | 1770                        | 354000                        | 1760.64              | 352128                                  | 1                              |
| 40                     | 51                              | Uplink       | Low  | 1730                        | 346000                        | 1711.64              | 342328                                  | 0                              |
|                        |                                 |              | Mid  | 1745                        | 349000                        | 144.08               | 28816                                   | 2198                           |
|                        |                                 |              | High | 1760                        | 352000                        | 1740.92              | 348184                                  | 1                              |

## 4.3.1.1.1.86 to 4.3.1.1.1.94 FFS

4.3.1.1.1.95 Reference test frequencies for NR operating band n95 (SUL)

**Table 4.3.1.1.1.95-1: Test frequencies for NR operating band n95 and SCS 15 kHz**

| <b>CBW<br/>[MHz]</b> | <b><i>carrierBand<br/>width<br/>[PRBs]</i></b> | <b>Range</b> |                      | <b>Carrier<br/>centre<br/>[MHz]</b> | <b>Carrier<br/>centre<br/>[ARFCN]</b> | <b>point A<br/>[MHz]</b> | <b><i>absolu<br/>teFreq<br/>uency<br/>PointA<br/>[ARFC<br/>N]</i></b> | <b><i>offsetTo<br/>Carrier<br/>[PRBs]</i></b> |
|----------------------|--|--------------|----------------------|-------------------------------------|---------------------------------------|--------------------------|---|---|
| 5                    | 25   | Uplink       | Low                  | 2012.5                              | 402500                                | 2010.25                  | 402050  | 0   |
|                      |  |              | Mid                  | 2017.5                              | 403500                                | 1924.53                  | 384906  | 504   |
|                      |  |              | High                 | 2022.5                              | 404500                                | 2019.17                  | 403834  | 6   |
| 10                   | 52   | Uplink       | Low                  | 2015                                | 403000                                | 2010.32                  | 402064  | 0   |
|                      |  |              | Mid                  | 2017.5                              | 403500                                | 1922.1                   | 384420  | 504   |
|                      |  |              | High                 | 2020                                | 404000                                | 2014.24                  | 402848  | 6   |
| 15                   | 79   | Uplink       | Low,<br>Mid,<br>High | 2017.5                              | 403500                                | 2010.39                  | 402078  | 0   |

**Table 4.3.1.1.1.95-2: Test frequencies for NR operating band n95 and SCS 30 kHz**

| <b>CBW<br/>[MHz]</b> | <b><i>carrierBand<br/>width<br/>[PRBs]</i></b> | <b>Range</b> |                      | <b>Carrier<br/>centre<br/>[MHz]</b> | <b>Carrier<br/>centre<br/>[ARFCN]</b> | <b>point A<br/>[MHz]</b> | <b><i>absolu<br/>teFreq<br/>uency<br/>PointA<br/>[ARFC<br/>N]</i></b> | <b><i>offsetTo<br/>Carrier<br/>[PRBs]</i></b> |
|----------------------|--|--------------|----------------------|-------------------------------------|---------------------------------------|--------------------------|---|---|
| 10                   | 24   | Uplink       | Low                  | 2015                                | 403000                                | 2010.68                  | 402136  | 0   |
|                      |  |              | Mid                  | 2017.5                              | 403500                                | 1831.74                  | 366348  | 504   |
|                      |  |              | High                 | 2020                                | 404000                                | 2013.52                  | 402704  | 6   |
| 15                   | 38   | Uplink       | Low,<br>Mid,<br>High | 2017.5                              | 403500                                | 2010.66                  | 402132  | 0   |

Table 4.3.1.1.1.95-3: Test frequencies for NR operating band n95 and SCS 60 kHz

| CBW<br>[MHz] | <i>carrierBand<br/>width</i><br>[PRBs] | Range  |                      | Carrier<br>centre<br>[MHz] | Carrier<br>centre<br>[ARFCN] | point A<br>[MHz] | <i>absolu<br/>teFreq<br/>uency<br/>PointA</i><br>[ARFC<br>N] | <i>offsetTo<br/>Carrier</i><br>[PRBs] |
|--------------|--|--------|----------------------|----------------------------|------------------------------|------------------|--|---------------------------------------|
| 10           | 11                                     | Uplink | Low                  | 2015                       | 403000                       | 2011.04          | 402208   | 0                                     |
|              |  |        | Mid                  | 2017.5                     | 403500                       | 1650.66          | 330132   | 504                                   |
|              |  |        | High                 | 2020                       | 404000                       | 2011.72          | 402344   | 6                                     |
| 15           | 18                                     | Uplink | Low,<br>Mid,<br>High | 2017.5                     | 403500                       | 2011.02          | 402204   | 0                                     |

## 4.3.1.1.2 NR inter-band CA configurations in FR1

## 4.3.1.1.2.1 NR inter-band CA configurations in FR1 (two bands)

**Table 4.3.1.1.2.1-1: Inter-band NR CA configurations (FR1, two bands)**

| NR CA configuration | Uplink NR CA configuration | NR CA downlink configuration band 1 | NR CA downlink configuration band 2 | NR CA uplink configuration band 1 | NR CA uplink configuration band 2 | Applicable for protocol testing (Note 2) |
|---------------------|----------------------------|-------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------|--|
| CA_n1A-n77A         | -                          | n1A                                 | n77A                                | -                                 | -                                 | Yes                                      |
| CA_n1A-n78A         | CA_n1A-n78A                | n1A                                 | n78A                                | n1A                               | n78A                              | Yes                                      |
| CA_n1A-n78C         | CA_n1A-n78A                | n1A                                 | CA_n78C                             | n1A                               | n78A                              | No                                       |
| CA_n3A-n77A         | -                          | n3A                                 | n77A                                | -                                 | -                                 | Yes                                      |
| CA_n3A-n78A         | CA_n3A-n78A                | n3A                                 | n78A                                | N3A                               | n78A                              | Yes                                      |
| CA_n3A-n79A         | CA_n3A-n79A                | n3A                                 | n79A                                | N3A                               | n79A                              | Yes                                      |
| CA_n8A-n75A         | -                          | n8A                                 | n75A                                | -                                 | -                                 | Yes                                      |
| CA_n8A-n78A         | CA_n8A-n78A                | n8A                                 | n78A                                | N8A                               | n78A                              | Yes                                      |
| CA_n8A-n79A         | CA_n8A-n79A                | n8A                                 | n79A                                | n8A                               | n79A                              | Yes                                      |
| CA_n28A-n75A        | -                          | n28A                                | n75A                                | -                                 | -                                 | Yes                                      |
| CA_n28A-n78A        | CA_n28A-n78A               | n28A                                | n78A                                | n28A                              | n78A                              | Yes                                      |
| CA_n29A-n66A        | -                          | n29A                                | n66A<br>(Note 1)                    | -                                 | -                                 | Yes                                      |
| CA_n41A-n78A        | -                          | n41A                                | n78A                                | -                                 | -                                 | Yes                                      |
| CA_n41A-n79A        | -                          | n41A                                | n79A                                | -                                 | -                                 | Yes                                      |
| CA_n66A-n70A        | -                          | n66A                                | n70A                                | -                                 | -                                 | Yes                                      |
| CA_n66B-n70A        | -                          | CA_n66B                             | n70A                                | -                                 | -                                 | No                                       |
| CA_n66(2A)-n70A     | -                          | CA_n66(2A)                          | n70A                                | -                                 | -                                 | No                                       |
| CA_n66A-n71A        | - CA_n66A-n71A             | n66A                                | n71A                                | -                                 | -                                 | Yes                                      |
| CA_n66B-n71A        | CA_n66A-n71A-              | CA_n66B                             | n71A                                | -                                 | -                                 | No                                       |
| CA_n66(2A)-n71A     | CA_n66A-n71A-              | CA_n66(2A)                          | n71A                                | -                                 | -                                 | No                                       |
| CA_n70A-n71A        | - CA_n70A-n71A             | n70A                                | n71A                                | -                                 | -                                 | Yes                                      |
| CA_n75A-n78A        | -                          | n75A                                | n78A<br>(Note 1)                    | -                                 | -                                 | Yes                                      |
| CA_n76A-n78A        | -                          | n76A                                | n78A<br>(Note 1)                    | -                                 | -                                 | Yes                                      |
| CA_n77A-n79A        | -                          | n77A                                | n79A                                | -                                 | -                                 | Yes                                      |
| CA_n78A-n79A        | -                          | n78A                                | n79A                                | -                                 | -                                 | Yes                                      |

Note 1: This band is used as PCell.

Note 2: Protocol testing is limited to NR CA configurations with 2CC.

## 4.3.1.1.2.2 NR inter-band CA configurations in FR1 (three bands)

**Table 4.3.1.1.2.2-1: Inter-band NR CA configurations within FR1 (three bands)**

| NR CA configuration                        | Uplink NR CA configuration   | NR CA downlink configuration band 1 | NR CA downlink configuration band 2 | NR CA downlink configuration band 3 | NR CA uplink configuration band 1 | NR CA uplink configuration band 2 | NR CA uplink configuration band 3 |
|--|------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| CA_n29A-n66A-n70A                          | -                            | n29A (Note1)                        | n66A                                | n70A                                | -                                 | -                                 | -                                 |
| CA_n29A-n66B-n70A                          | -                            | n29A (Note1)                        | n66B                                | n70A                                | -                                 | -                                 | -                                 |
| CA_n29A-n66(2A)-n70A                       | -                            | n29A (Note1)                        | n66(2A)                             | n70A                                | -                                 | -                                 | -                                 |
| CA_n66A-n70A-n71A                          | CA_n66A-n71A<br>CA_n70A-n71A | n66A                                | n70A                                | n71A                                | -                                 | -                                 | -                                 |
| CA_n66B-n70A-n71A                          | CA_n66A-n71A<br>CA_n70A-n71A | CA_n66B                             | n70A                                | n71A                                | -                                 | -                                 | -                                 |
| CA_n66(2A)-n70A-n71A                       | CA_n66A-n71A<br>CA_n70A-n71A | CA_n66(2A)                          | n70A                                | n71A                                | -                                 | -                                 | -                                 |
| Note 1: This band cannot be used as PCell. |                              |                                     |                                     |                                     |                                   |                                   |                                   |

## 4.3.1.1.3 NR intra-band contiguous CA in FR1

4.3.1.1.3.1 – 4.3.1.1.3.39 FFS

4.3.1.1.3.40 NR Intra-band contiguous configurations CA\_n40

4.3.1.1.3.40.1 CA\_n40B

Editor's note: Test frequencies for CA\_n40B with mixed numerology with SCS CC1=15 kHz and SCS CC2=30 kHz or 60 kHz; and SCS CC1=30 kHz and SCS CC2= 15 kHz or 60kHz is FFS.

Table 4.3.1.1.3.40.1-1: NR Intra-Band contiguous CA configuration CA\_n40B (PCC=CC1 and SCC=CC2), CC1 SCS = 15kHz, CC2 SCS = 15kHz

| CBW combination [MHz] | CC Note 2 | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2               | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | CORESET #0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |  |  |  |  |  |
|-----------------------|-----------|-----------|-----------|-------------------------|-------------------|---|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|--|--|--|-------------------------------------|--|--|--|--|--|
| 50+50                 | CC1       | 50        | 15        | 270                     | Downlink & Uplink | Low                                       | 2325                   | 465000        | 2300.7                            | 460140                         | 0                  | 30   | 5763                          | 461070    | 10                                     | 3                                      | 0 (2)                                  | 5                                   |  |  |  |  |  |
|                       |           |           |           |                         |                   |   |                        |               |                                   |                                |                    |      |                               |           |  |  |  |                                     |  |  |  |  |  |
|                       |           |           |           |                         |                   |   |                        |               |                                   |                                |                    |      |                               |           |  |  |  |                                     |  |  |  |  |  |
|                       | CC2       | 50        | 15        | 270                     | Downlink & Uplink | Mid                                       | 2325.2                 | 465040        | 2210.18                           | 442036                         | 504                |      |                               |           |  |  |  |                                     |  |  |  |  |  |
|                       |           |           |           |                         |                   |   |                        |               |                                   |                                |                    |      |                               |           |  |  |  |                                     |  |  |  |  |  |
|                       |           |           |           |                         |                   |   |                        |               |                                   |                                |                    |      |                               |           |  |  |  |                                     |  |  |  |  |  |
|                       |           |           |           |                         |                   | Channel spacing CC1-CC2=49.8 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |           |  |  |  |                                     |  |  |  |  |  |
|                       |           |           |           |                         |                   | 30  |                        |               |                                   |                                | 5886               |      | 470910                        | 6         | 0                                      | 0 (2)                                  | 2                                      |                                     |  |  |  |  |  |
|                       |           |           |           |                         |                   |   |                        |               |                                   |                                |                    |      |                               |           |  |  |  |                                     |  |  |  |  |  |
|                       |           |           |           |                         |                   | 5888                                      |                        |               |                                   |                                | 471130             |      | 6                             | 1         | 1 (6)                                  | 511                                    |  |                                     |  |  |  |  |  |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.1.3.40.1-2: NR Intra-Band contiguous CA configuration CA\_n40B (PCC=CC1 and SCC=CC2), CC1 SCS = 30kHz, CC2 SCS = 30kHz

| CBW combination [MHz] | CC Note 2 | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz]    | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN                                      | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | CORESET#0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |
|-----------------------|-----------|-----------|-----------|-------------------------|-------------------|-----------------------------|------------------------|------------------|-----------------------------------|--------------------------------|--------------------|---|-------------------------------|-----------|---------------------------------------|---------------------------------------|---------------------------------------|-------------------------------------|
| 20+80                 | CC1       | 20        | 30        | 51                      | Downlink & Uplink | Low<br>Mid<br>High          | 2310<br>2310.2         | 462000<br>462040 | 2300.82<br>2119.58                | 460164<br>423916               | 0<br>504           | 30  | 5763                          | 461070    | 14                                    | 0                                     | 2 (2)                                 | 4                                   |
|                       |           |           |           |                         |                   |                             |                        |                  |                                   |                                |                    | 5762                                      | 461050                        | 18        | 0                                     | 1 (1)                                 | 1010                                  |                                     |
|                       |           |           |           |                         |                   |                             |                        |                  |                                   |                                |                    | Channel spacing CC1-CC2=49.8 MHz (Note 1) |                               |           |                                       |                                       |                                       |                                     |
|                       | CC2       | 80        | 30        | 217                     | Downlink & Uplink | Low<br>Mid<br>High          | 2359.8<br>2360         | 471960<br>472000 | 2320.74<br>2139.5                 | 464148<br>427900               | 0<br>504           | 30  | 5811                          | 464910    | 14                                    | 0                                     | 0 (0)                                 | 0                                   |
|                       |           |           |           |                         |                   |                             |                        |                  |                                   |                                |                    | 5813                                      | 465130                        | 2         | 0                                     | 3 (3)                                 | 1014                                  |                                     |
|                       |           |           |           |                         |                   |                             |                        |                  |                                   |                                |                    | Channel spacing CC1-CC2=49.8 MHz (Note 1) |                               |           |                                       |                                       |                                       |                                     |
|                       | CC1       | 50        | 30        | 133                     | Downlink & Uplink | Low<br>Mid<br>High          | 2325<br>2325.2         | 465000<br>465040 | 2301.06<br>2119.82                | 460212<br>423964               | 0<br>504           | 30  | 5763                          | 461070    | 22                                    | 0                                     | 1 (1)                                 | 2                                   |
|                       |           |           |           |                         |                   |                             |                        |                  |                                   |                                |                    | 5762                                      | 461050                        | 2         | 0                                     | 1 (1)                                 | 1010                                  |                                     |
|                       |           |           |           |                         |                   |                             |                        |                  |                                   |                                |                    | Channel spacing CC1-CC2=49.8 MHz (Note 1) |                               |           |                                       |                                       |                                       |                                     |
|                       | CC2       | 50        | 30        | 133                     | Downlink & Uplink | Low<br>Mid<br>High          | 2374.8<br>2375         | 474960<br>475000 | 2350.86<br>2169.62                | 470172<br>433924               | 0<br>504           | 30  | 5886                          | 470910    | 6                                     | 0                                     | 0 (0)                                 | 0                                   |
|                       |           |           |           |                         |                   |                             |                        |                  |                                   |                                |                    | 5888                                      | 471130                        | 18        | 0                                     | 2 (2)                                 | 1012                                  |                                     |
|                       |           |           |           |                         |                   |                             |                        |                  |                                   |                                |                    | Channel spacing CC1-CC2=49.8 MHz (Note 1) |                               |           |                                       |                                       |                                       |                                     |
| 80+20                 | CC1       | 80        | 30        | 217                     | Downlink & Uplink | Low<br>Mid<br>High          | 2340<br>2340.2         | 468000<br>468040 | 2300.94<br>2119.7                 | 460188<br>423940               | 0<br>504           | 30  | 5763                          | 461070    | 6                                     | 0                                     | 2 (2)                                 | 4                                   |
|                       |           |           |           |                         |                   |                             |                        |                  |                                   |                                |                    | 5762                                      | 461050                        | 10        | 0                                     | 1 (1)                                 | 1010                                  |                                     |
|                       |           |           |           |                         |                   |                             |                        |                  |                                   |                                |                    | Channel spacing CC1-CC2=49.8 MHz (Note 1) |                               |           |                                       |                                       |                                       |                                     |
|                       | CC2       | 20        | 30        | 51                      | Downlink & Uplink | Low<br>Mid<br>High          | 2389.8<br>2390         | 477960<br>478000 | 2380.62<br>2199.38                | 476124<br>439876               | 0<br>504           | 30  | 5961                          | 476910    | 22                                    | 0                                     | 0 (0)                                 | 0                                   |
|                       |           |           |           |                         |                   |                             |                        |                  |                                   |                                |                    | 5960                                      | 476890                        | 2         | 0                                     | 0 (0)                                 | 1008                                  |                                     |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.1.3.41

## NR Intra-band contiguous configurations CA\_n41

## 4.3.1.1.3.41.1 CA\_n41C

Editor's note: Test frequencies for CA\_n41C with mixed numerology with SCS CC1=15 kHz and SCS CC2=30 kHz or 60 kHz; and SCS CC1=30 kHz and SCS CC2= 30 kHz or 60kHz is FFS.

Table 4.3.1.1.3.41.1-1: NR Intra-Band contiguous CA configuration CA\_n41C (PCC=CC1 and SCC=CC2), CC1 SCS = 30kHz, CC2 SCS = 30 kHz

| CBW combination | CC Note 2 | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2                | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offsetToPoint A (SIB1) [PRBs] Note 4 |      |
|-----------------|-----------|-----------|-----------|-------------------------|-------------------|--|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|------|
| 40+80           | CC1       | 40        | 30        | 106                     | Downlink & Uplink | Low  | 2516.01                | 503202        | 2496.93                           | 499386                         | 0                  | 30   | 6252                          | 500190    | 4                                      | 0                                      | 1 (1)                                | 2    |
|                 |           |           |           |                         |                   | Mid  | 2553                   | 510600        | 2497.2                            | 499440                         | 102                |      | 6345                          | 507630    | 18                                     | 0                                      | 1 (1)                                | 206  |
|                 |           |           |           |                         |                   | High                                       | 2590.17                | 518034        | 2389.65                           | 477930                         | 504                |      | 6438                          | 515070    | 20                                     | 0                                      | 1 (1)                                | 1010 |
|                 | CC2       | 80        | 30        | 217                     | Downlink & Uplink | Channel spacing CC1-CC2=59.82 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                 |           |           |           |                         |                   | Low  | 2575.83                | 515166        | 2536.77                           | 507354                         | 0                  | 30   | 6351                          | 508110    | 12                                     | 0                                      | 0 (0)                                | 0    |
|                 |           |           |           |                         |                   | Mid  | 2612.82                | 522564        | 2537.04                           | 507408                         | 102                |      | 6444                          | 515550    | 2                                      | 0                                      | 1 (1)                                | 206  |
|                 |           |           |           |                         |                   | High                                       | 2649.99                | 529998        | 2429.49                           | 485898                         | 504                |      | 6537                          | 522990    | 4                                      | 0                                      | 1 (1)                                | 1010 |
|                 | CC1       | 40        | 30        | 106                     | Downlink & Uplink | Low  | 2516.01                | 503202        | 2496.93                           | 499386                         | 0                  | 30   | 6252                          | 500190    | 4                                      | 0                                      | 1 (1)                                | 2    |
|                 |           |           |           |                         |                   | Mid  | 2543.01                | 508602        | 2487.21                           | 497442                         | 102                |      | 6321                          | 505710    | 20                                     | 0                                      | 2 (2)                                | 208  |
|                 |           |           |           |                         |                   | High                                       | 2570.28                | 514056        | 2369.76                           | 473952                         | 504                |      | 6387                          | 510990    | 10                                     | 0                                      | 0 (0)                                | 1008 |
| 40+100          | CC2       | 100       | 30        | 273                     | Downlink & Uplink | Channel spacing CC1-CC2=69.72 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                 |           |           |           |                         |                   | Low  | 2585.73                | 517146        | 2536.59                           | 507318                         | 0                  | 30   | 6351                          | 508110    | 0                                      | 0                                      | 1 (1)                                | 2    |
|                 |           |           |           |                         |                   | Mid  | 2612.73                | 522546        | 2526.87                           | 505374                         | 102                |      | 6420                          | 513630    | 16                                     | 0                                      | 2 (2)                                | 208  |
|                 |           |           |           |                         |                   | High                                       | 2640                   | 528000        | 2409.42                           | 481884                         | 504                |      | 6486                          | 518910    | 6                                      | 0                                      | 0 (0)                                | 1008 |
|                 | CC1       | 40        | 30        | 106                     | Downlink & Uplink | Channel spacing CC1-CC2=69.72 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                 |           |           |           |                         |                   | Low  | 2516.01                | 503202        | 2496.93                           | 499386                         | 0                  | 30   | 6252                          | 500190    | 4                                      | 0                                      | 1 (1)                                | 2    |
|                 |           |           |           |                         |                   | Mid  | 2543.01                | 508602        | 2487.21                           | 497442                         | 102                |      | 6321                          | 505710    | 20                                     | 0                                      | 2 (2)                                | 208  |
|                 |           |           |           |                         |                   | High                                       | 2570.28                | 514056        | 2369.76                           | 473952                         | 504                |      | 6387                          | 510990    | 10                                     | 0                                      | 0 (0)                                | 1008 |
| 50+60           | CC1       | 50        | 30        | 133                     | Downlink & Uplink | Channel spacing CC1-CC2=54.96 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                 |           |           |           |                         |                   | Low  | 2521.02                | 504204        | 2497.08                           | 499416                         | 0                  | 30   | 6252                          | 500190    | 18                                     | 0                                      | 0 (0)                                | 0    |
|                 |           |           |           |                         |                   | Mid  | 2562.99                | 512598        | 2502.33                           | 500466                         | 102                |      | 6357                          | 508590    | 20                                     | 0                                      | 0 (0)                                | 204  |
|                 |           |           |           |                         |                   | High                                       | 2605.02                | 521004        | 2399.64                           | 479928                         | 504                |      | 6462                          | 516990    | 18                                     | 0                                      | 0 (0)                                | 1008 |
|                 | CC2       | 60        | 30        | 162                     | Downlink & Uplink | Channel spacing CC1-CC2=54.96 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                 |           |           |           |                         |                   | Low  | 2575.98                | 515196        | 2546.82                           | 509364                         | 0                  | 30   | 6378                          | 510270    | 14                                     | 0                                      | 2 (2)                                | 4    |
|                 |           |           |           |                         |                   | Mid  | 2617.95                | 523590        | 2552.07                           | 510414                         | 102                |      | 6483                          | 518670    | 16                                     | 0                                      | 2 (2)                                | 208  |
|                 |           |           |           |                         |                   | High                                       | 2659.98                | 531996        | 2449.38                           | 489876                         | 504                |      | 6588                          | 527070    | 14                                     | 0                                      | 2 (2)                                | 1012 |
| 50+80           | CC1       | 50        | 30        | 133                     | Downlink & Uplink | Channel spacing CC1-CC2=64.86 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                 |           |           |           |                         |                   | Low  | 2521.02                | 504204        | 2497.08                           | 499416                         | 0                  | 30   | 6252                          | 500190    | 18                                     | 0                                      | 0 (0)                                | 0    |
|                 |           |           |           |                         |                   | Mid  | 2553                   | 510600        | 2492.34                           | 498468                         | 102                |      | 6333                          | 506670    | 22                                     | 0                                      | 1 (1)                                | 206  |
|                 |           |           |           |                         |                   | High                                       | 2585.13                | 517026        | 2379.75                           | 475950                         | 504                |      | 6414                          | 513150    | 16                                     | 0                                      | 2 (2)                                | 1012 |
|                 | CC2       | 80        | 30        | 217                     | Downlink & Uplink | Channel spacing CC1-CC2=64.86 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                 |           |           |           |                         |                   | Low  | 2585.88                | 517176        | 2546.82                           | 509364                         | 0                  | 30   | 6378                          | 510270    | 14                                     | 0                                      | 2 (2)                                | 4    |
|                 |           |           |           |                         |                   | Mid  | 2617.86                | 523572        | 2542.08                           | 508416                         | 102                |      | 6456                          | 516510    | 10                                     | 0                                      | 0 (0)                                | 204  |
|                 |           |           |           |                         |                   | High                                       | 2649.99                | 529998        | 2429.49                           | 485898                         | 504                |      | 6537                          | 522990    | 4                                      | 0                                      | 1 (1)                                | 1010 |
| 50+100          | CC1       | 50        | 30        | 133                     | Downlink & Uplink | Channel spacing CC1-CC2=64.86 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                 |           |           |           |                         |                   | Low  | 2521.02                | 504204        | 2497.08                           | 499416                         | 0                  | 30   | 6252                          | 500190    | 18                                     | 0                                      | 0 (0)                                | 0    |
|                 |           |           |           |                         |                   | Mid  | 2543.01                | 508602        | 2482.35                           | 496470                         | 102                |      | 6309                          | 504750    | 0                                      | 0                                      | 3 (3)                                | 210  |
|                 |           |           |           |                         |                   | High                                       | 2565.24                | 513048        | 2359.86                           | 471972                         | 504                |      | 6363                          | 509070    | 6                                      | 0                                      | 1 (1)                                | 1010 |

| Channel spacing CC1-CC2=74.76 MHz (Note 1) |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|--|-----|-----|----|-----|-------------------|------|---------|--------|---------|--------|-----|----|------|--------|----|---|-------|------|
|  | CC2 | 100 | 30 | 273 | Downlink & Uplink | Low  | 2595.78 | 519156 | 2546.64 | 509328 | 0   | 30 | 6378 | 510270 | 2  | 0 | 3(3)  | 6    |
|  |     |     |    |     |                   | Mid  | 2617.77 | 523554 | 2531.91 | 506382 | 102 |    | 6432 | 514590 | 0  | 0 | 2(2)  | 208  |
|  |     |     |    |     |                   | High | 2640    | 528000 | 2409.42 | 481884 | 504 |    | 6486 | 518910 | 6  | 0 | 0(0)  | 1008 |
| 60+50                                      | CC1 | 60  | 30 | 162 | Downlink & Uplink | Low  | 2526    | 505200 | 2496.84 | 499368 | 0   | 30 | 6252 | 500190 | 10 | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2568    | 513600 | 2502.12 | 500424 | 102 |    | 6357 | 508590 | 10 | 0 | 1 (1) | 206  |
|  |     |     |    |     |                   | High | 2610.03 | 522006 | 2399.43 | 479886 | 504 |    | 6462 | 516990 | 8  | 0 | 1 (1) | 1010 |
| Channel spacing CC1-CC2=54.96 MHz (Note 1) |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 50  | 30 | 133 | Downlink & Uplink | Low  | 2580.96 | 516192 | 2557.02 | 511404 | 0   | 30 | 6402 | 512190 | 22 | 0 | 0 (0) | 0    |
|  |     |     |    |     |                   | Mid  | 2622.96 | 524592 | 2562.3  | 512460 | 102 |    | 6507 | 520590 | 22 | 0 | 0 (0) | 204  |
|  |     |     |    |     |                   | High | 2664.99 | 532998 | 2459.61 | 491922 | 504 |    | 6612 | 528990 | 20 | 0 | 0 (0) | 1008 |
| 60+60                                      | CC1 | 60  | 30 | 162 | Downlink & Uplink | Low  | 2526    | 505200 | 2496.84 | 499368 | 0   | 30 | 6252 | 500190 | 10 | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2562.99 | 512598 | 2497.11 | 499422 | 102 |    | 6345 | 507630 | 0  | 0 | 2 (2) | 208  |
|  |     |     |    |     |                   | High | 2599.98 | 519996 | 2389.38 | 477876 | 504 |    | 6438 | 515070 | 14 | 0 | 2 (2) | 1012 |
| Channel spacing CC1-CC2=60 MHz (Note 1)    |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 60  | 30 | 162 | Downlink & Uplink | Low  | 2586    | 517200 | 2556.84 | 511368 | 0   | 30 | 6402 | 512190 | 10 | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2622.99 | 524598 | 2557.11 | 511422 | 102 |    | 6495 | 519630 | 0  | 0 | 2 (2) | 208  |
|  |     |     |    |     |                   | High | 2659.98 | 531996 | 2449.38 | 489876 | 504 |    | 6588 | 527070 | 14 | 0 | 2 (2) | 1012 |
| 60+80                                      | CC1 | 60  | 30 | 162 | Downlink & Uplink | Low  | 2526    | 505200 | 2496.84 | 499368 | 0   | 30 | 6252 | 500190 | 10 | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2553    | 510600 | 2487.12 | 497424 | 102 |    | 6321 | 505710 | 2  | 0 | 3 (3) | 210  |
|  |     |     |    |     |                   | High | 2580.09 | 516018 | 2369.49 | 473898 | 504 |    | 6387 | 510990 | 4  | 0 | 1 (1) | 1010 |
| Channel spacing CC1-CC2=69.9 MHz (Note 1)  |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 80  | 30 | 217 | Downlink & Uplink | Low  | 2595.9  | 519180 | 2556.84 | 511368 | 0   | 30 | 6402 | 512190 | 10 | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2622.9  | 524580 | 2547.12 | 509424 | 102 |    | 6471 | 517710 | 2  | 0 | 3 (3) | 210  |
|  |     |     |    |     |                   | High | 2649.99 | 529998 | 2429.49 | 485898 | 504 |    | 6537 | 522990 | 4  | 0 | 1 (1) | 1010 |
| 60+100                                     | CC1 | 60  | 30 | 162 | Downlink & Uplink | Low  | 2526    | 505200 | 2496.84 | 499368 | 0   | 30 | 6252 | 500190 | 10 | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2543.01 | 508602 | 2477.13 | 495426 | 102 |    | 6294 | 503550 | 20 | 0 | 0 (0) | 204  |
|  |     |     |    |     |                   | High | 2560.2  | 512040 | 2349.6  | 469920 | 504 |    | 6339 | 507150 | 2  | 0 | 3 (3) | 1014 |
| Channel spacing CC1-CC2=79.8 MHz (Note 1)  |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 100 | 30 | 273 | Downlink & Uplink | Low  | 2605.8  | 521160 | 2556.66 | 511332 | 0   | 30 | 6402 | 512190 | 22 | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2622.81 | 524562 | 2536.95 | 507390 | 102 |    | 6444 | 515550 | 8  | 0 | 1 (1) | 206  |
|  |     |     |    |     |                   | High | 2640    | 528000 | 2409.42 | 481884 | 504 |    | 6486 | 518910 | 6  | 0 | 0 (0) | 1008 |
| 80+40                                      | CC1 | 80  | 30 | 217 | Downlink & Uplink | Low  | 2536.02 | 507204 | 2496.96 | 499392 | 0   | 30 | 6252 | 500190 | 2  | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2573.01 | 514602 | 2497.23 | 499446 | 102 |    | 6345 | 507630 | 16 | 0 | 1 (1) | 206  |
|  |     |     |    |     |                   | High | 2610.18 | 522036 | 2389.68 | 477936 | 504 |    | 6438 | 515070 | 18 | 0 | 1 (1) | 1010 |
| Channel spacing CC1-CC2=59.82 MHz (Note 1) |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 40  | 30 | 106 | Downlink & Uplink | Low  | 2595.84 | 519168 | 2576.76 | 515352 | 0   | 30 | 6453 | 516270 | 18 | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 2632.83 | 526566 | 2577.03 | 515406 | 102 |    | 6543 | 523470 | 0  | 0 | 0 (0) | 204  |
|  |     |     |    |     |                   | High | 2670    | 534000 | 2469.48 | 493896 | 504 |    | 6636 | 530910 | 2  | 0 | 0 (0) | 1008 |
| 80+50                                      | CC1 | 80  | 30 | 217 | Downlink & Uplink | Low  | 2536.02 | 507204 | 2496.96 | 499392 | 0   | 30 | 6252 | 500190 | 2  | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2568    | 513600 | 2492.22 | 498444 | 102 |    | 6333 | 506670 | 6  | 0 | 2 (2) | 208  |
|  |     |     |    |     |                   | High | 2600.13 | 520026 | 2379.63 | 475926 | 504 |    | 6414 | 513150 | 0  | 0 | 3 (3) | 1014 |

| Channel spacing CC1-CC2=64.86 MHz (Note 1) |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|--|-----|-----|----|-----|-------------------|------|---------|--------|---------|--------|-----|----|------|--------|----|---|-------|------|
|  | CC2 | 50  | 30 | 133 | Downlink & Uplink | Low  | 2600.88 | 520176 | 2576.94 | 515388 | 0   | 30 | 6453 | 516270 | 6  | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 2632.86 | 526572 | 2572.2  | 514440 | 102 |    | 6531 | 522510 | 2  | 0 | 0 (0) | 204  |
|  |     |     |    |     |                   | High | 2664.99 | 532998 | 2459.61 | 491922 | 504 |    | 6612 | 528990 | 20 | 0 | 0 (0) | 1008 |
| 80+60                                      | CC1 | 80  | 30 | 217 | Downlink & Uplink | Low  | 2536.02 | 507204 | 2496.96 | 499392 | 0   | 30 | 6252 | 500190 | 2  | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2562.99 | 512598 | 2487.21 | 497442 | 102 |    | 6321 | 505710 | 20 | 0 | 2 (2) | 208  |
|  |     |     |    |     |                   | High | 2590.08 | 518016 | 2369.58 | 473916 | 504 |    | 6387 | 510990 | 22 | 0 | 0 (0) | 1008 |
| Channel spacing CC1-CC2=69.9 MHz (Note 1)  |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 60  | 30 | 162 | Downlink & Uplink | Low  | 2605.92 | 521184 | 2576.76 | 515352 | 0   | 30 | 6453 | 516270 | 18 | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 2632.89 | 526578 | 2567.01 | 513402 | 102 |    | 6519 | 521550 | 4  | 0 | 1 (1) | 206  |
|  |     |     |    |     |                   | High | 2659.98 | 531996 | 2449.38 | 489876 | 504 |    | 6588 | 527070 | 14 | 0 | 2 (2) | 1012 |
| 80+80                                      | CC1 | 80  | 30 | 217 | Downlink & Uplink | Low  | 2536.02 | 507204 | 2496.96 | 499392 | 0   | 30 | 6252 | 500190 | 2  | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2553    | 510600 | 2477.22 | 495444 | 102 |    | 6294 | 503550 | 14 | 0 | 0 (0) | 204  |
|  |     |     |    |     |                   | High | 2570.01 | 514002 | 2349.51 | 469902 | 504 |    | 6336 | 506910 | 0  | 0 | 0 (0) | 1008 |
| Channel spacing CC1-CC2=79.98 MHz (Note 1) |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 80  | 30 | 217 | Downlink & Uplink | Low  | 2616    | 523200 | 2576.94 | 515388 | 0   | 30 | 6453 | 516270 | 6  | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 2632.98 | 526596 | 2557.2  | 511440 | 102 |    | 6495 | 519630 | 18 | 0 | 1 (1) | 206  |
|  |     |     |    |     |                   | High | 2649.99 | 529998 | 2429.49 | 485898 | 504 |    | 6537 | 522990 | 4  | 0 | 1 (1) | 1010 |
| 80+100                                     | CC1 | 80  | 30 | 217 | Downlink & Uplink | Low  | 2536.02 | 507204 | 2496.96 | 499392 | 0   | 30 | 6252 | 500190 | 2  | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2543.01 | 508602 | 2467.23 | 493446 | 102 |    | 6270 | 501630 | 16 | 0 | 1 (1) | 206  |
|  |     |     |    |     |                   | High | 2550.12 | 510024 | 2329.62 | 465924 | 504 |    | 6288 | 503070 | 22 | 0 | 1 (1) | 1010 |
| Channel spacing CC1-CC2=89.88 MHz (Note 1) |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 100 | 30 | 273 | Downlink & Uplink | Low  | 2625.9  | 525180 | 2576.76 | 515352 | 0   | 30 | 6453 | 516270 | 18 | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 2632.89 | 526578 | 2547.03 | 509406 | 102 |    | 6468 | 517470 | 0  | 0 | 0 (0) | 204  |
|  |     |     |    |     |                   | High | 2640    | 528000 | 2409.42 | 481884 | 504 |    | 6486 | 518910 | 6  | 0 | 0 (0) | 1008 |
| 100+40                                     | CC1 | 100 | 30 | 273 | Downlink & Uplink | Low  | 2546.01 | 509202 | 2496.87 | 499374 | 0   | 30 | 6252 | 500190 | 8  | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2573.01 | 514602 | 2487.15 | 497430 | 102 |    | 6321 | 505710 | 0  | 0 | 3 (3) | 210  |
|  |     |     |    |     |                   | High | 2600.28 | 520056 | 2369.7  | 473940 | 504 |    | 6387 | 510990 | 14 | 0 | 0 (0) | 1008 |
| Channel spacing CC1-CC2=69.72 MHz (Note 1) |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 40  | 30 | 106 | Downlink & Uplink | Low  | 2615.73 | 523146 | 2596.65 | 519330 | 0   | 30 | 6501 | 520110 | 20 | 0 | 0 (0) | 0    |
|  |     |     |    |     |                   | Mid  | 2642.73 | 528546 | 2586.93 | 517386 | 102 |    | 6570 | 525630 | 12 | 0 | 2 (2) | 208  |
|  |     |     |    |     |                   | High | 2670    | 534000 | 2469.48 | 493896 | 504 |    | 6636 | 530910 | 2  | 0 | 0 (0) | 1008 |
| 100+50                                     | CC1 | 100 | 30 | 273 | Downlink & Uplink | Low  | 2546.01 | 509202 | 2496.87 | 499374 | 0   | 30 | 6252 | 500190 | 8  | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2568    | 513600 | 2482.14 | 496428 | 102 |    | 6306 | 504510 | 6  | 0 | 0 (0) | 204  |
|  |     |     |    |     |                   | High | 2590.23 | 518046 | 2359.65 | 471930 | 504 |    | 6363 | 509070 | 20 | 0 | 1 (1) | 1010 |
| Channel spacing CC1-CC2=74.76 MHz (Note 1) |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 50  | 30 | 133 | Downlink & Uplink | Low  | 2620.77 | 524154 | 2596.83 | 519366 | 0   | 30 | 6501 | 520110 | 8  | 0 | 0 (0) | 0    |
|  |     |     |    |     |                   | Mid  | 2642.76 | 528552 | 2582.1  | 516420 | 102 |    | 6558 | 524670 | 14 | 0 | 2 (2) | 208  |
|  |     |     |    |     |                   | High | 2664.99 | 532998 | 2459.61 | 491922 | 504 |    | 6612 | 528990 | 20 | 0 | 0 (0) | 1008 |
| 100+60                                     | CC1 | 100 | 30 | 273 | Downlink & Uplink | Low  | 2546.01 | 509202 | 2496.87 | 499374 | 0   | 30 | 6252 | 500190 | 8  | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 2562.99 | 512598 | 2477.13 | 495426 | 102 |    | 6294 | 503550 | 20 | 0 | 0 (0) | 204  |
|  |     |     |    |     |                   | High | 2580.18 | 516036 | 2349.6  | 469920 | 504 |    | 6339 | 507150 | 2  | 0 | 3 (3) | 1014 |

| Channel spacing CC1-CC2=79.8 MHz (Note 1) |  |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|---|--|-----|----|-----|-------------------|------|---------|--------|---------|--------|-----|----|------|--------|----|---|-------|------|
|   | CC2  | 60  | 30 | 162 | Downlink & Uplink | Low  | 2625.81 | 525162 | 2596.65 | 519330 | 0   | 30 | 6501 | 520110 | 20 | 0 | 0 (0) | 0    |
|   |  |     |    |     |                   | Mid  | 2642.79 | 528558 | 2576.91 | 515382 | 102 |    | 6543 | 523470 | 8  | 0 | 0 (0) | 204  |
|   |  |     |    |     |                   | High | 2659.98 | 531996 | 2449.38 | 489876 | 504 |    | 6588 | 527070 | 14 | 0 | 2 (2) | 1012 |
| 100+80                                    | CC1  | 100 | 30 | 273 | Downlink & Uplink | Low  | 2546.01 | 509202 | 2496.87 | 499374 | 0   | 30 | 6252 | 500190 | 8  | 0 | 1 (1) | 2    |
|   |  |     |    |     |                   | Mid  | 2553    | 510600 | 2467.14 | 493428 | 102 |    | 6270 | 501630 | 22 | 0 | 1 (1) | 206  |
|   |  |     |    |     |                   | High | 2560.11 | 512022 | 2329.53 | 465906 | 504 |    | 6288 | 503070 | 4  | 0 | 2 (2) | 1012 |
|   | Channel spacing CC1-CC2=89.88 MHz (Note 1) |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|   | CC2  | 80  | 30 | 217 | Downlink & Uplink | Low  | 2635.89 | 527178 | 2596.83 | 519366 | 0   | 30 | 6501 | 520110 | 8  | 0 | 0 (0) | 0    |
|   |  |     |    |     |                   | Mid  | 2642.88 | 528576 | 2567.1  | 513420 | 102 |    | 6519 | 521550 | 22 | 0 | 0 (0) | 204  |
|   |  |     |    |     |                   | High | 2649.99 | 529998 | 2429.49 | 485898 | 504 |    | 6537 | 522990 | 4  | 0 | 1 (1) | 1010 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.1.3.42 – 4.3.1.1.3.65 FFS

4.3.1.1.3.66 NR Intra-band contiguous configurations CA\_n66

4.3.1.1.3.66.1 CA\_n66B

Editor's note: Test frequencies for CA\_n66B with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.3.66.1-1: NR Intra-Band contiguous CA configuration CA\_n66B (PCC=CC1 and SCC=CC2), SCS 15 kHz

| CBW combination | CC Note 2 | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range                                     | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offsetToPoint A (SIB1) [PRBs] Note 4 |     |
|-----------------|-----------|-----------|-----------|-------------------------|---|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|-----|
| 5+20            | CC1       | 5         | 15        | 25                      | Downlink                                  | Low                         | 2112.5                 | 422500        | 2110.25                           | 422050                         | 0                  | 15   | 5279                          | 422410    | 0                                      | 0                                      | 0 (0)                                | 0   |
|                 |           |           |           |                         |   | Mid                         | 2135                   | 427000        | 2114.39                           | 422878                         | 102                |      | 5336                          | 426970    | 8                                      | 1                                      | 0 (0)                                | 103 |
|                 |           |           |           |                         |   | High                        | 2158                   | 431600        | 2065.03                           | 413006                         | 504                |      | 5395                          | 431570    | 8                                      | 1                                      | 0 (0)                                | 505 |
|                 |           |           |           |                         | Uplink                                    | Low                         | 1712.5                 | 342500        | 1710.25                           | 342050                         | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|                 |           |           |           |                         |   | Mid                         | 1735                   | 347000        | 1642.03                           | 328406                         | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                 |           |           |           |                         |   | High                        | 1758                   | 351600        | 1754.67                           | 350934                         | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                 |           |           |           |                         | Channel spacing CC1-CC2=12 MHz (Note 1)   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |     |
|                 |           |           |           |                         | Downlink                                  | Low                         | 2124.5                 | 424900        | 2114.96                           | 422992                         | 0                  | 15   | 5291                          | 423370    | 6                                      | 0                                      | 0 (0)                                | 0   |
|                 |           |           |           |                         |   | Mid                         | 2147                   | 429400        | 2119.1                            | 423820                         | 102                |      | 5348                          | 427930    | 2                                      | 0                                      | 1 (2)                                | 104 |
|                 |           |           |           |                         |   | High                        | 2170                   | 434000        | 2069.74                           | 413948                         | 504                |      | 5407                          | 432530    | 2                                      | 0                                      | 1 (2)                                | 506 |
|                 |           |           |           |                         | Uplink                                    | Low                         | 1724.5                 | 344900        | 1714.96                           | 342992                         | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|                 |           |           |           |                         |   | Mid                         | 1747                   | 349400        | 1646.74                           | 329348                         | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                 |           |           |           |                         |   | High                        | 1770                   | 354000        | 1759.38                           | 351876                         | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
| 5+40            | CC1       | 5         | 15        | 25                      | Downlink                                  | Low                         | 2112.5                 | 422500        | 2110.25                           | 422050                         | 0                  | 15   | 5279                          | 422410    | 0                                      | 0                                      | 0 (0)                                | 0   |
|                 |           |           |           |                         |   | Mid                         | 2125                   | 425000        | 2104.39                           | 420878                         | 102                |      | 5314                          | 425090    | 0                                      | 1                                      | 2 (4)                                | 107 |
|                 |           |           |           |                         |   | High                        | 2138.1                 | 427620        | 2045.13                           | 409026                         | 504                |      | 5346                          | 427710    | 0                                      | 1                                      | 2 (4)                                | 509 |
|                 |           |           |           |                         | Uplink                                    | Low                         | 1712.5                 | 342500        | 1710.25                           | 342050                         | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|                 |           |           |           |                         |   | Mid                         | 1725                   | 345000        | 1632.03                           | 326406                         | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                 |           |           |           |                         |   | High                        | 1738.1                 | 347620        | 1734.77                           | 346954                         | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                 |           |           |           |                         | Channel spacing CC1-CC2=21.9 MHz (Note 1) |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |     |
|                 |           |           |           |                         | Downlink                                  | Low                         | 2134.4                 | 426880        | 2114.96                           | 422992                         | 0                  | 15   | 5291                          | 423370    | 6                                      | 0                                      | 0 (0)                                | 0   |
|                 |           |           |           |                         |   | Mid                         | 2146.9                 | 429380        | 2109.1                            | 421820                         | 102                |      | 5326                          | 426050    | 6                                      | 1                                      | 2 (4)                                | 107 |
|                 |           |           |           |                         |   | High                        | 2160                   | 432000        | 2049.84                           | 409968                         | 504                |      | 5358                          | 428670    | 6                                      | 1                                      | 2 (4)                                | 509 |
|                 |           |           |           |                         | Uplink                                    | Low                         | 1734.4                 | 346880        | 1714.96                           | 342992                         | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|                 |           |           |           |                         |   | Mid                         | 1746.9                 | 349380        | 1636.74                           | 327348                         | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |
|                 |           |           |           |                         |   | High                        | 1760                   | 352000        | 1739.48                           | 347896                         | 6                  |      | -                             | -         | -                                      | -                                      | -                                    | -   |
| 10+15           | CC1       | 10        | 15        | 52                      | Downlink                                  | Low                         | 2115                   | 423000        | 2110.32                           | 422064                         | 0                  | 15   | 5280                          | 422430    | 2                                      | 0                                      | 0 (0)                                | 0   |
|                 |           |           |           |                         |   | Mid                         | 2137.5                 | 427500        | 2114.46                           | 422892                         | 102                |      | 5337                          | 426990    | 10                                     | 1                                      | 0 (0)                                | 103 |
|                 |           |           |           |                         |   | High                        | 2160.2                 | 432040        | 2064.8                            | 412960                         | 504                |      | 5393                          | 431530    | 10                                     | 1                                      | 0 (0)                                | 505 |
|                 |           |           |           |                         | Uplink                                    | Low                         | 1715                   | 343000        | 1710.32                           | 342064                         | 0                  | -    | -                             | -         | -                                      | -                                      | -                                    | -   |
|                 |           |           |           |                         |   | Mid                         | 1737.5                 | 347500        | 1642.1                            | 328420                         | 504                |      | -                             | -         | -                                      | -                                      | -                                    | -   |

|   |     |     |    |     |          |        |        |         |         |        |     |    |      |        |    |   |       |     |
|---|-----|-----|----|-----|----------|--------|--------|---------|---------|--------|-----|----|------|--------|----|---|-------|-----|
|   |     |     |    |     | High     | 1760.2 | 352040 | 1754.44 | 350888  | 6      | -   | -  | -    | -      | -  | - |       |     |
| Channel spacing CC1-CC2=12.3 MHz (Note 1) |     |     |    |     |          |        |        |         |         |        |     |    |      |        |    |   |       |     |
| 10+20                                     | CC2 | 15  | 15 | 79  | Downlink | Low    | 2127.3 | 425460  | 2120.19 | 424038 | 0   | 15 | 5307 | 424590 | 4  | 1 | 2 (4) | 5   |
|   |     |     |    |     |          | Mid    | 2149.8 | 429960  | 2124.33 | 424866 | 102 |    | 5361 | 428910 | 4  | 0 | 0 (0) | 102 |
|   |     |     |    |     |          | High   | 2172.5 | 434500  | 2074.67 | 414934 | 504 |    | 5417 | 433450 | 4  | 0 | 0 (0) | 504 |
|   |     |     |    |     | Uplink   | Low    | 1727.3 | 345460  | 1720.19 | 344038 | 0   |    | -    | -      | -  | - | -     | -   |
|   |     |     |    |     |          | Mid    | 1749.8 | 349960  | 1651.97 | 330394 | 504 |    | -    | -      | -  | - | -     | -   |
|   |     |     |    |     |          | High   | 1772.5 | 354500  | 1764.31 | 352862 | 6   |    | -    | -      | -  | - | -     | -   |
|   |     | CC1 | 10 | 15  | Downlink | Low    | 2115   | 423000  | 2110.32 | 422064 | 0   | 15 | 5280 | 422430 | 2  | 0 | 0 (0) | 0   |
|   |     |     |    |     |          | Mid    | 2135   | 427000  | 2111.96 | 422392 | 102 |    | 5330 | 426490 | 10 | 1 | 0 (0) | 103 |
|   |     |     |    |     |          | High   | 2155.6 | 431120  | 2060.2  | 412040 | 504 |    | 5383 | 430610 | 10 | 1 | 0 (0) | 505 |
|   |     |     |    |     | Uplink   | Low    | 1715   | 343000  | 1710.32 | 342064 | 0   |    | -    | -      | -  | - | -     | -   |
|   |     |     |    |     |          | Mid    | 1735   | 347000  | 1639.6  | 327920 | 504 |    | -    | -      | -  | - | -     | -   |
|   |     |     |    |     |          | High   | 1755.6 | 351120  | 1749.84 | 349968 | 6   |    | -    | -      | -  | - | -     | -   |
| Channel spacing CC1-CC2=14.4 MHz (Note 1) |     |     |    |     |          |        |        |         |         |        |     |    |      |        |    |   |       |     |
| 10+40                                     | CC2 | 20  | 15 | 106 | Downlink | Low    | 2129.4 | 425880  | 2119.86 | 423972 | 0   | 15 | 5304 | 424350 | 6  | 0 | 0 (0) | 0   |
|   |     |     |    |     |          | Mid    | 2149.4 | 429880  | 2121.5  | 424300 | 102 |    | 5354 | 428410 | 2  | 0 | 1 (2) | 104 |
|   |     |     |    |     |          | High   | 2170   | 434000  | 2069.74 | 413948 | 504 |    | 5407 | 432530 | 2  | 0 | 1 (2) | 506 |
|   |     |     |    |     | Uplink   | Low    | 1729.4 | 345880  | 1719.86 | 343972 | 0   |    | -    | -      | -  | - | -     | -   |
|   |     |     |    |     |          | Mid    | 1749.4 | 349880  | 1649.14 | 329828 | 504 |    | -    | -      | -  | - | -     | -   |
|   |     |     |    |     |          | High   | 1770   | 354000  | 1759.38 | 351876 | 6   |    | -    | -      | -  | - | -     | -   |
|   |     | CC1 | 10 | 15  | Downlink | Low    | 2115   | 423000  | 2110.32 | 422064 | 0   | 15 | 5280 | 422430 | 2  | 0 | 0 (0) | 0   |
|   |     |     |    |     |          | Mid    | 2125   | 425000  | 2101.96 | 420392 | 102 |    | 5308 | 424610 | 2  | 1 | 2 (4) | 107 |
|   |     |     |    |     |          | High   | 2135.7 | 427140  | 2040.3  | 408060 | 504 |    | 5334 | 426750 | 2  | 1 | 2 (4) | 509 |
|   |     |     |    |     | Uplink   | Low    | 1715   | 343000  | 1710.32 | 342064 | 0   |    | -    | -      | -  | - | -     | -   |
|   |     |     |    |     |          | Mid    | 1725   | 345000  | 1629.6  | 325920 | 504 |    | -    | -      | -  | - | -     | -   |
|   |     |     |    |     |          | High   | 1735.7 | 347140  | 1729.94 | 345988 | 6   |    | -    | -      | -  | - | -     | -   |
| Channel spacing CC1-CC2=24.3 MHz (Note 1) |     |     |    |     |          |        |        |         |         |        |     |    |      |        |    |   |       |     |
| 15+10                                     | CC2 | 40  | 15 | 216 | Downlink | Low    | 2139.3 | 427860  | 2119.86 | 423972 | 0   | 15 | 5304 | 424350 | 6  | 0 | 0 (0) | 0   |
|   |     |     |    |     |          | Mid    | 2149.3 | 429860  | 2111.5  | 422300 | 102 |    | 5332 | 426530 | 6  | 1 | 2 (4) | 107 |
|   |     |     |    |     |          | High   | 2160   | 432000  | 2049.84 | 409968 | 504 |    | 5358 | 428670 | 6  | 1 | 2 (4) | 509 |
|   |     |     |    |     | Uplink   | Low    | 1739.3 | 347860  | 1719.86 | 343972 | 0   |    | -    | -      | -  | - | -     | -   |
|   |     |     |    |     |          | Mid    | 1749.3 | 349860  | 1639.14 | 327828 | 504 |    | -    | -      | -  | - | -     | -   |
|   |     |     |    |     |          | High   | 1760   | 352000  | 1739.48 | 347896 | 6   |    | -    | -      | -  | - | -     | -   |
|   |     | CC1 | 15 | 15  | Downlink | Low    | 2117.5 | 423500  | 2110.39 | 422078 | 0   | 15 | 5281 | 422450 | 4  | 0 | 0 (0) | 0   |
|   |     |     |    |     |          | Mid    | 2140   | 428000  | 2114.53 | 422906 | 102 |    | 5338 | 427010 | 0  | 0 | 1 (2) | 104 |
|   |     |     |    |     |          | High   | 2162.7 | 432540  | 2064.87 | 412974 | 504 |    | 5394 | 431550 | 0  | 0 | 1 (2) | 506 |
|   |     |     |    |     | Uplink   | Low    | 1717.5 | 343500  | 1710.39 | 342078 | 0   |    | -    | -      | -  | - | -     | -   |
|   |     |     |    |     |          | Mid    | 1740   | 348000  | 1642.17 | 328434 | 504 |    | -    | -      | -  | - | -     | -   |
|   |     |     |    |     |          | High   | 1762.7 | 352540  | 1754.51 | 350902 | 6   |    | -    | -      | -  | - | -     | -   |
| Channel spacing CC1-CC2=12.3 MHz (Note 1) |     |     |    |     |          |        |        |         |         |        |     |    |      |        |    |   |       |     |
|   | CC2 | 10  | 15 | 52  | Downlink | Low    | 2129.8 | 425960  | 2125.12 | 425024 | 0   | 15 | 5320 | 425570 | 2  | 1 | 2 (4) | 5   |

|       |     |    |    |     |   |   |        |        |         |          |        |        |        |         |        |   |       |        |        |   |       |       |   |
|-------|-----|----|----|-----|---|---|--------|--------|---------|----------|--------|--------|--------|---------|--------|---|-------|--------|--------|---|-------|-------|---|
|       |     |    |    |     |   | Mid                                       | 2152.3 | 430460 | 2129.26 | 425852   | 102    |        | 5374   | 429890  | 2      | 0 | 0 (0) | 102    |        |   |       |       |   |
|       |     |    |    |     |   | High                                      | 2175   | 435000 | 2079.6  | 415920   | 504    |        | 5430   | 434430  | 2      | 0 | 0 (0) | 504    |        |   |       |       |   |
| 15+15 | CC1 | 15 | 15 | 79  | Downlink                                | Uplink                                    | Low    | 1729.8 | 345960  | 1725.12  | 345024 | 0      | 15     | -       | -      | - | -     | -      |        |   |       |       |   |
|       |     |    |    |     |   | Mid                                       | 1752.3 | 350460 | 1656.9  | 331380   | 504    | -      | -      | -       | -      | - | -     |        |        |   |       |       |   |
|       |     |    |    |     |   | High                                      | 1775   | 355000 | 1769.24 | 353848   | 6      | -      | -      | -       | -      | - | -     |        |        |   |       |       |   |
|       |     |    |    |     | Uplink                                  | Low                                       | 2117.5 | 423500 | 2110.39 | 422078   | 0      | -      | 5281   | 422450  | 4      | 0 | 0 (0) | 0      |        |   |       |       |   |
|       |     |    |    |     |   | Mid                                       | 2137.5 | 427500 | 2112.03 | 422406   | 102    | -      | 5331   | 426510  | 0      | 0 | 1 (2) | 104    |        |   |       |       |   |
|       |     |    |    |     |   | High                                      | 2157.5 | 431500 | 2059.67 | 411934   | 504    | -      | 5381   | 430570  | 8      | 1 | 1 (2) | 507    |        |   |       |       |   |
| 15+20 | CC1 | 15 | 15 | 79  | Downlink                                | Uplink                                    | Low    | 1717.5 | 343500  | 1710.39  | 342078 | 0      | 15     | -       | -      | - | -     | -      |        |   |       |       |   |
|       |     |    |    |     |   | Mid                                       | 1737.5 | 347500 | 1639.67 | 327934   | 504    | -      | -      | -       | -      | - | -     |        |        |   |       |       |   |
|       |     |    |    |     |   | High                                      | 1757.5 | 351500 | 1749.31 | 349862   | 6      | -      | -      | -       | -      | - | -     |        |        |   |       |       |   |
|       |     |    |    |     |   | Channel spacing CC1-CC2=15 MHz (Note 1)   |        |        |         |          |        |        |        |         |        |   |       |        |        |   |       |       |   |
|       |     |    |    |     |   | CC2                                       | 15     | 15     | 79      | Downlink | Low    | 2132.5 | 426500 | 2125.39 | 425078 | 0 | 5320  | 425570 | 8      | 1 | 1 (2) | 3     |   |
|       |     |    |    |     | Uplink                                  | Mid                                       | 2152.5 | 430500 | 2127.03 | 425406   | 102    | 15     | -      | 5370    | 429630 | 4 | 1     | 2 (4)  | 107    |   |       |       |   |
|       |     |    |    |     |   | High                                      | 2172.5 | 434500 | 2074.67 | 414934   | 504    |        | -      | 5417    | 433450 | 4 | 0     | 0 (0)  | 504    |   |       |       |   |
|       |     |    |    |     |   | Low                                       | 1732.5 | 346500 | 1725.39 | 345078   | 0      |        | -      | -       | -      | - | -     | -      |        |   |       |       |   |
|       |     |    |    |     | Uplink                                  | Mid                                       | 1752.5 | 350500 | 1654.67 | 330934   | 504    | 15     | -      | -       | -      | - | -     | -      |        |   |       |       |   |
|       |     |    |    |     |   | High                                      | 1772.5 | 354500 | 1764.31 | 352862   | 6      |        | -      | -       | -      | - | -     | -      |        |   |       |       |   |
|       |     |    |    |     |   | Channel spacing CC1-CC2=17.1 MHz (Note 1) |        |        |         |          |        |        |        |         |        |   |       |        |        |   |       |       |   |
| 20+5  | CC1 | 20 | 15 | 106 | Downlink                                | CC2                                       | 20     | 15     | 106     | Downlink | Low    | 2134.6 | 426920 | 2125.06 | 425012 | 0 | 15    | 5320   | 425570 | 6 | 1     | 2 (4) | 5 |
|       |     |    |    |     |   | Mid                                       | 2152.1 | 430420 | 2124.2  | 424840   | 102    | -      | 5360   | 428890  | 6      | 0 | 0 (0) | 102    |        |   |       |       |   |
|       |     |    |    |     |   | High                                      | 2170   | 434000 | 2069.74 | 413948   | 504    | -      | 5407   | 432530  | 2      | 0 | 1 (2) | 506    |        |   |       |       |   |
|       |     |    |    |     | Uplink                                  | Low                                       | 1734.6 | 346920 | 1725.06 | 345012   | 0      | -      | -      | -       | -      | - | -     |        |        |   |       |       |   |
|       |     |    |    |     |   | Mid                                       | 1752.1 | 350420 | 1651.84 | 330368   | 504    | -      | -      | -       | -      | - | -     |        |        |   |       |       |   |
|       |     |    |    |     |   | High                                      | 1770   | 354000 | 1759.38 | 351876   | 6      | -      | -      | -       | -      | - | -     |        |        |   |       |       |   |
|       |     |    |    |     | Uplink                                  | Low                                       | 2120   | 424000 | 2110.46 | 422092   | 0      | 15     | -      | 5282    | 422650 | 6 | 1     | 2 (4)  | 5      |   |       |       |   |
|       |     |    |    |     |   | Mid                                       | 2142.5 | 428500 | 2114.6  | 422920   | 102    |        | -      | 5336    | 426970 | 6 | 0     | 0 (0)  | 102    |   |       |       |   |
|       |     |    |    |     |   | High                                      | 2165.5 | 433100 | 2065.24 | 413048   | 504    |        | -      | 5395    | 431570 | 6 | 0     | 0 (0)  | 504    |   |       |       |   |
|       |     |    |    |     |   | Low                                       | 1720   | 344000 | 1710.46 | 342092   | 0      |        | -      | -       | -      | - | -     | -      |        |   |       |       |   |
|       |     |    |    |     |   | Mid                                       | 1742.5 | 348500 | 1642.24 | 328448   | 504    |        | -      | -       | -      | - | -     | -      |        |   |       |       |   |
|       |     |    |    |     |   | High                                      | 1765.5 | 353100 | 1754.88 | 350976   | 6      |        | -      | -       | -      | - | -     | -      |        |   |       |       |   |
| 20+5  | CC1 | 20 | 15 | 106 | Channel spacing CC1-CC2=12 MHz (Note 1) |   |        |        |         |          |        |        |        |         |        |   |       |        |        |   |       |       |   |
|       |     |    |    |     | Downlink                                | CC2                                       | 5      | 15     | 25      | Downlink | Low    | 2132   | 426400 | 2129.75 | 425950 | 0 | 15    | 5330   | 426490 | 0 | 1     | 2 (4) | 5 |
|       |     |    |    |     |   | Mid                                       | 2154.5 | 430900 | 2133.89 | 426778   | 102    | -      | 5384   | 430810  | 0      | 0 | 0 (0) | 102    |        |   |       |       |   |
|       |     |    |    |     |   | High                                      | 2177.5 | 435500 | 2084.53 | 416906   | 504    | -      | 5443   | 435410  | 0      | 0 | 0 (0) | 504    |        |   |       |       |   |
|       |     |    |    |     | Uplink                                  | Low                                       | 1732   | 346400 | 1729.75 | 345950   | 0      | -      | -      | -       | -      | - | -     |        |        |   |       |       |   |
|       |     |    |    |     |   | Mid                                       | 1755.5 | 351400 | 1659.24 | 331380   | 504    | -      | -      | -       | -      | - | -     |        |        |   |       |       |   |

|   |     |   |    |          |          |        |        |         |         |        |     |      |        |        |    |       |       |     |  |
|---|-----|---|----|----------|----------|--------|--------|---------|---------|--------|-----|------|--------|--------|----|-------|-------|-----|--|
|   |     |   |    |          |          | Mid    | 1754.5 | 350900  | 1661.53 | 332306 | 504 |      | -      | -      | -  | -     | -     | -   |  |
|   |     |   |    |          |          | High   | 1777.5 | 355500  | 1774.17 | 354834 | 6   |      | -      | -      | -  | -     | -     | -   |  |
| 20+10                                     | CC1 | 20  | 15 | 106      | Downlink | Low    | 2120   | 424000  | 2110.46 | 422092 | 0   | 15   | 5282   | 422650 | 6  | 1     | 2 (4) | 5   |  |
|   |     |   |    |          |          | Mid    | 2140   | 428000  | 2112.1  | 422420 | 102 |      | 5332   | 426530 | 2  | 0     | 1 (2) | 104 |  |
|   |     |   |    |          |          | High   | 2160.6 | 432120  | 2060.34 | 412068 | 504 |      | 5382   | 430590 | 6  | 0     | 0 (0) | 504 |  |
|   |     |   |    |          | Uplink   | Low    | 1720   | 344000  | 1710.46 | 342092 | 0   |      | -      | -      | -  | -     | -     | -   |  |
|   |     |   |    |          |          | Mid    | 1740   | 348000  | 1639.74 | 327948 | 504 |      | -      | -      | -  | -     | -     | -   |  |
|   |     |   |    |          |          | High   | 1760.6 | 352120  | 1749.98 | 349996 | 6   |      | -      | -      | -  | -     | -     | -   |  |
| Channel spacing CC1-CC2=14.4 MHz (Note 1) |     |   |    |          |          |        |        |         |         |        |     |      |        |        |    |       |       |     |  |
| CC2                                       |     | 10  | 15 | Downlink | Low      | 2134.4 | 426880 | 2129.72 | 425944  | 0      | 15  | 5330 | 426490 | 2      | 1  | 2 (4) | 5     |     |  |
|   |     |   |    |          | Mid      | 2154.4 | 430880 | 2131.36 | 426272  | 102    |     | 5380 | 430370 | 10     | 1  | 0 (0) | 103   |     |  |
|   |     |   |    |          | High     | 2175   | 435000 | 2079.6  | 415920  | 504    |     | 5430 | 434430 | 2      | 0  | 0 (0) | 504   |     |  |
|   |     |   |    | Uplink   | Low      | 1734.4 | 346880 | 1729.72 | 345944  | 0      | -   | -    | -      | -      | -  | -     | -     |     |  |
|   |     |   |    |          | Mid      | 1754.4 | 350880 | 1659    | 331800  | 504    |     | -    | -      | -      | -  | -     | -     |     |  |
|   |     |   |    |          | High     | 1775   | 355000 | 1769.24 | 353848  | 6      |     | -    | -      | -      | -  | -     | -     |     |  |
| 20+15                                     | CC1 | 20  | 15 | 106      | Downlink | Low    | 2120   | 424000  | 2110.46 | 422092 | 0   | 15   | 5282   | 422650 | 6  | 1     | 2 (4) | 5   |  |
|   |     |   |    |          |          | Mid    | 2137.5 | 427500  | 2109.6  | 421920 | 102 |      | 5325   | 426030 | 2  | 0     | 1 (2) | 104 |  |
|   |     |   |    |          |          | High   | 2155.4 | 431080  | 2055.14 | 411028 | 504 |      | 5369   | 429610 | 2  | 0     | 1 (2) | 506 |  |
|   |     |   |    |          | Uplink   | Low    | 1720   | 344000  | 1710.46 | 342092 | 0   |      | -      | -      | -  | -     | -     | -   |  |
|   |     |   |    |          |          | Mid    | 1737.5 | 347500  | 1637.24 | 327448 | 504 |      | -      | -      | -  | -     | -     | -   |  |
|   |     |   |    |          |          | High   | 1755.4 | 351080  | 1744.78 | 348956 | 6   |      | -      | -      | -  | -     | -     | -   |  |
|   |     | Channel spacing CC1-CC2=17.1 MHz (Note 1) |    |          |          |        |        |         |         |        |     |      |        |        |    |       |       |     |  |
|   |     | CC2                                       | 15 | 15       | Downlink | Low    | 2137.1 | 427420  | 2129.99 | 425998 | 0   | 15   | 5330   | 426490 | 8  | 1     | 1 (2) | 3   |  |
|   |     |   |    |          |          | Mid    | 2154.6 | 430920  | 2129.13 | 425826 | 102 |      | 5373   | 429870 | 4  | 0     | 0 (0) | 102 |  |
|   |     |   |    |          |          | High   | 2172.5 | 434500  | 2074.67 | 414934 | 504 |      | 5417   | 433450 | 4  | 0     | 0 (0) | 504 |  |
|   |     |   |    |          | Uplink   | Low    | 1737.1 | 347420  | 1729.99 | 345998 | 0   |      | -      | -      | -  | -     | -     | -   |  |
|   |     |   |    |          |          | Mid    | 1754.6 | 350920  | 1656.77 | 331354 | 504 |      | -      | -      | -  | -     | -     | -   |  |
|   |     |   |    |          |          | High   | 1772.5 | 354500  | 1764.31 | 352862 | 6   |      | -      | -      | -  | -     | -     | -   |  |
| 40+5                                      | CC1 | 40  | 15 | 216      | Downlink | Low    | 2130   | 426000  | 2110.56 | 422112 | 0   | 15   | 5283   | 422670 | 6  | 1     | 2 (4) | 5   |  |
|   |     |   |    |          |          | Mid    | 2142.5 | 428500  | 2104.7  | 420940 | 102 |      | 5312   | 425050 | 2  | 0     | 1 (2) | 104 |  |
|   |     |   |    |          |          | High   | 2155.6 | 431120  | 2045.44 | 409088 | 504 |      | 5347   | 427730 | 10 | 1     | 1 (2) | 507 |  |
|   |     |   |    |          | Uplink   | Low    | 1730   | 346000  | 1710.56 | 342112 | 0   |      | -      | -      | -  | -     | -     | -   |  |
|   |     |   |    |          |          | Mid    | 1742.5 | 348500  | 1632.34 | 326468 | 504 |      | -      | -      | -  | -     | -     | -   |  |
|   |     |   |    |          |          | High   | 1755.6 | 351120  | 1735.08 | 347016 | 6   |      | -      | -      | -  | -     | -     | -   |  |
|   |     | Channel spacing CC1-CC2=21.9 MHz (Note 1) |    |          |          |        |        |         |         |        |     |      |        |        |    |       |       |     |  |
|   |     | CC2                                       | 5  | 15       | Downlink | Low    | 2151.9 | 430380  | 2149.65 | 429930 | 0   | 15   | 5379   | 430350 | 8  | 1     | 0 (0) | 1   |  |
|   |     |   |    |          |          | Mid    | 2164.4 | 432880  | 2143.79 | 428758 | 102 |      | 5411   | 432970 | 0  | 1     | 2 (4) | 107 |  |
|   |     |   |    |          |          | High   | 2177.5 | 435500  | 2084.53 | 416906 | 504 |      | 5443   | 435410 | 0  | 0     | 0 (0) | 504 |  |
|   |     |   |    |          | Uplink   | Low    | 1751.9 | 350380  | 1749.65 | 349930 | 0   |      | -      | -      | -  | -     | -     | -   |  |
|   |     |   |    |          |          | Mid    | 1764.4 | 352880  | 1671.43 | 334286 | 504 |      | -      | -      | -  | -     | -     | -   |  |
|   |     |   |    |          |          | High   | 1777.5 | 355500  | 1774.17 | 354834 | 6   |      | -      | -      | -  | -     | -     | -   |  |
| 40+10                                     | CC1 | 40  | 15 | 216      | Downlink | Low    | 2130   | 426000  | 2110.56 | 422112 | 0   | 15   | 5283   | 422670 | 6  | 1     | 2 (4) | 5   |  |

|        |        |    |    |          |   |        |        |         |         |        |    |      |        |    |   |       |     |  |  |
|--------|--------|----|----|----------|---|--------|--------|---------|---------|--------|----|------|--------|----|---|-------|-----|--|--|
|        |        |    |    |          | Mid                                       | 2140   | 428000 | 2102.2  | 420440  | 102    |    | 5308 | 424610 | 10 | 1 | 1 (2) | 105 |  |  |
|        |        |    |    |          | High                                      | 2150.7 | 430140 | 2040.54 | 408108  | 504    |    | 5334 | 426750 | 10 | 1 | 1 (2) | 507 |  |  |
| Uplink |        |    |    |          | Low                                       | 1730   | 346000 | 1710.56 | 342112  | 0      | -  | -    | -      | -  | - | -     |     |  |  |
|        |        |    |    |          | Mid                                       | 1740   | 348000 | 1629.84 | 325968  | 504    |    | -    | -      | -  | - | -     |     |  |  |
|        |        |    |    |          | High                                      | 1750.7 | 350140 | 1730.18 | 346036  | 6      |    | -    | -      | -  | - | -     |     |  |  |
|        |        |    |    |          | Channel spacing CC1-CC2=24.3 MHz (Note 1) |        |        |         |         |        |    |      |        |    |   |       |     |  |  |
| CC2    | 10     | 15 | 52 | Downlink | Low                                       | 2154.3 | 430860 | 2149.62 | 429924  | 0      | 15 | 5379 | 430350 | 10 | 1 | 0 (0) | 1   |  |  |
|        |        |    |    |          | Mid                                       | 2164.3 | 432860 | 2141.26 | 428252  | 102    |    | 5404 | 432290 | 2  | 0 | 0 (0) | 102 |  |  |
|        |        |    |    |          | High                                      | 2175   | 435000 | 2079.6  | 415920  | 504    |    | 5430 | 434430 | 2  | 0 | 0 (0) | 504 |  |  |
|        |        |    |    |          | Uplink                                    | Low    | 1754.3 | 350860  | 1749.62 | 349924 | 0  | -    | -      | -  | - | -     | -   |  |  |
|        | Uplink |    |    |          | Mid                                       | 1764.3 | 352860 | 1668.9  | 333780  | 504    | -  | -    | -      | -  | - | -     |     |  |  |
|        |        |    |    |          | High                                      | 1775   | 355000 | 1769.24 | 353848  | 6      | -  | -    | -      | -  | - | -     |     |  |  |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.1.3.66.1-2: NR Intra-Band contiguous CA configuration CA\_n66B (PCC=CC1 and SCC=CC2), SCS 30 kHz

| CBW combination | CC Note 2 | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range    | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offs et [RBs]) Note 4 | CorESET #0 Index (Offs et [RBs]) Note 4 | offsetToPoint A (SIB1) [PRBs] Note 4 |  |  |
|-----------------|-----------|-----------|-----------|-------------------------|----------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|--|---|---|--------------------------------------|--|--|
| 10+15           | CC1       | 10        | 30        | 24                      | Downlink | Low                         | 2115                   | 423000        | 2110.68                           | 422136                         | 0                  | 15   | 5286                          | 422910    | 18                                     | 0                                       | 0 (5)                                   | 10                                   |  |  |
|                 |           |           |           |                         |          | Mid                         | 2137.5                 | 427500        | 2096.46                           | 419292                         | 102                |      | 5343                          | 427470    | 14                                     | 0                                       | 1 (6)                                   | 216                                  |  |  |
|                 |           |           |           |                         |          | High                        | 2160.2                 | 432040        | 1974.44                           | 394888                         | 504                |      | 5399                          | 432010    | 14                                     | 0                                       | 1 (6)                                   | 1020                                 |  |  |
|                 |           |           | Uplink    |                         | Low      | 1715                        | 343000                 | 1710.68       | 342136                            | 0                              | -                  | -    | -                             | -         | -                                      | -                                       |   |                                      |  |  |
|                 |           |           |           |                         | Mid      | 1737.5                      | 347500                 | 1551.74       | 310348                            | 504                            |                    | -    | -                             | -         | -                                      | -                                       |   |                                      |  |  |
|                 |           |           |           |                         | High     | 1760.2                      | 352040                 | 1753.72       | 350744                            | 6                              |                    | -    | -                             | -         | -                                      | -                                       |   |                                      |  |  |
|                 | CC2       | 15        | 30        | 38                      | Downlink | Low                         | 2127.3                 | 425460        | 2120.46                           | 424092                         | 0                  | 15   | 5310                          | 424830    | 6                                      | 0                                       | 0 (5)                                   | 10                                   |  |  |
|                 |           |           |           |                         |          | Mid                         | 2149.8                 | 429960        | 2106.24                           | 421248                         | 102                |      | 5367                          | 429390    | 2                                      | 0                                       | 1 (6)                                   | 216                                  |  |  |
|                 |           |           |           |                         |          | High                        | 2172.5                 | 434500        | 1984.22                           | 396844                         | 504                |      | 5423                          | 433930    | 2                                      | 0                                       | 1 (6)                                   | 1020                                 |  |  |
|                 |           |           |           |                         | Uplink   | Low                         | 1727.3                 | 345460        | 1720.46                           | 344092                         | 0                  | -    | -                             | -         | -                                      | -                                       | -                                       |                                      |  |  |
|                 |           |           |           |                         |          | Mid                         | 1749.8                 | 349960        | 1561.52                           | 312304                         | 504                |      | -                             | -         | -                                      | -                                       | -                                       |                                      |  |  |
|                 |           |           |           |                         |          | High                        | 1772.5                 | 354500        | 1763.5                            | 352700                         | 6                  |      | -                             | -         | -                                      | -                                       | -                                       |                                      |  |  |
|                 | CC1       | 10        | 30        | 24                      | Downlink | Low                         | 2115                   | 423000        | 2110.68                           | 422136                         | 0                  | 15   | 5286                          | 422910    | 18                                     | 0                                       | 0 (5)                                   | 10                                   |  |  |
|                 |           |           |           |                         |          | Mid                         | 2135                   | 427000        | 2093.96                           | 418792                         | 102                |      | 5336                          | 426970    | 14                                     | 0                                       | 1 (6)                                   | 216                                  |  |  |
|                 |           |           |           |                         |          | High                        | 2155.6                 | 431120        | 1969.84                           | 393968                         | 504                |      | 5389                          | 431090    | 14                                     | 0                                       | 1 (6)                                   | 1020                                 |  |  |
|                 |           |           |           |                         | Uplink   | Low                         | 1715                   | 343000        | 1710.68                           | 342136                         | 0                  | -    | -                             | -         | -                                      | -                                       | -                                       |                                      |  |  |
|                 |           |           |           |                         |          | Mid                         | 1735                   | 347000        | 1549.24                           | 309848                         | 504                |      | -                             | -         | -                                      | -                                       | -                                       |                                      |  |  |
|                 |           |           |           |                         |          | High                        | 1755.6                 | 351120        | 1749.12                           | 349824                         | 6                  |      | -                             | -         | -                                      | -                                       | -                                       |                                      |  |  |
|                 | CC2       | 20        | 30        | 51                      | Downlink | Low                         | 2129.4                 | 425880        | 2120.22                           | 424044                         | 0                  | 15   | 5310                          | 424830    | 22                                     | 0                                       | 0 (5)                                   | 10                                   |  |  |
|                 |           |           |           |                         |          | Mid                         | 2149.4                 | 429880        | 2103.5                            | 420700                         | 102                |      | 5360                          | 428890    | 18                                     | 0                                       | 1 (6)                                   | 216                                  |  |  |
|                 |           |           |           |                         |          | High                        | 2170                   | 434000        | 1979.38                           | 395876                         | 504                |      | 5413                          | 433010    | 18                                     | 0                                       | 1 (6)                                   | 1020                                 |  |  |
|                 |           |           |           |                         | Uplink   | Low                         | 1729.4                 | 345880        | 1720.22                           | 344044                         | 0                  | -    | -                             | -         | -                                      | -                                       | -                                       |                                      |  |  |
|                 |           |           |           |                         |          | Mid                         | 1749.4                 | 349880        | 1558.78                           | 311756                         | 504                |      | -                             | -         | -                                      | -                                       | -                                       |                                      |  |  |
|                 |           |           |           |                         |          | High                        | 1770                   | 354000        | 1758.66                           | 351732                         | 6                  |      | -                             | -         | -                                      | -                                       | -                                       |                                      |  |  |
|                 | CC1       | 10        | 30        | 24                      | Downlink | Low                         | 2115                   | 423000        | 2110.68                           | 422136                         | 0                  | 15   | 5286                          | 422910    | 18                                     | 0                                       | 0 (5)                                   | 10                                   |  |  |
|                 |           |           |           |                         |          | Mid                         | 2125                   | 425000        | 2083.96                           | 416792                         | 102                |      | 5314                          | 425090    | 6                                      | 0                                       | 3 (8)                                   | 220                                  |  |  |
|                 |           |           |           |                         |          | High                        | 2135.7                 | 427140        | 1949.94                           | 389988                         | 504                |      | 5340                          | 427230    | 6                                      | 0                                       | 3 (8)                                   | 1024                                 |  |  |
|                 |           |           |           |                         | Uplink   | Low                         | 1715                   | 343000        | 1710.68                           | 342136                         | 0                  | -    | -                             | -         | -                                      | -                                       | -                                       |                                      |  |  |
|                 |           |           |           |                         |          | Mid                         | 1725                   | 345000        | 1539.24                           | 307848                         | 504                |      | -                             | -         | -                                      | -                                       | -                                       |                                      |  |  |

|   |        |    |    |     |          |        |        |         |         |         |        |    |      |        |    |   |       |      |  |  |  |
|---|--------|----|----|-----|----------|--------|--------|---------|---------|---------|--------|----|------|--------|----|---|-------|------|--|--|--|
|   |        |    |    |     | High     | 1735.7 | 347140 | 1729.22 | 345844  | 6       |        | -  | -    | -      | -  | - | -     |      |  |  |  |
| Channel spacing CC1-CC2=24.3 MHz (Note 1) |        |    |    |     |          |        |        |         |         |         |        |    |      |        |    |   |       |      |  |  |  |
| 15+10                                     | CC2    | 40 | 30 | 106 | Downlink | Low    | 2139.3 | 427860  | 2120.22 | 424044  | 0      | 15 | 5310 | 424830 | 22 | 0 | 0 (5) | 10   |  |  |  |
|   |        |    |    |     |          | Mid    | 2149.3 | 429860  | 2093.5  | 418700  | 102    |    | 5335 | 426770 | 2  | 0 | 0 (5) | 214  |  |  |  |
|   |        |    |    |     |          | High   | 2160   | 432000  | 1959.48 | 391896  | 504    |    | 5361 | 428910 | 2  | 0 | 0 (5) | 1018 |  |  |  |
|   | Uplink |    |    |     |          | Low    | 1739.3 | 347860  | 1720.22 | 344044  | 0      | -  | -    | -      | -  | - | -     |      |  |  |  |
|   |        |    |    |     |          | Mid    | 1749.3 | 349860  | 1548.78 | 309756  | 504    |    | -    | -      | -  | - | -     |      |  |  |  |
|   |        |    |    |     |          | High   | 1760   | 352000  | 1738.76 | 347752  | 6      |    | -    | -      | -  | - | -     |      |  |  |  |
|   | CC1    | 15 | 30 | 38  | Downlink | Low    | 2117.5 | 423500  | 2110.66 | 422132  | 0      | 15 | 5287 | 422930 | 2  | 0 | 1 (6) | 12   |  |  |  |
|   |        |    |    |     |          | Mid    | 2140   | 428000  | 2096.44 | 419288  | 102    |    | 5344 | 427490 | 22 | 0 | 1 (6) | 216  |  |  |  |
|   |        |    |    |     |          | High   | 2162.7 | 432540  | 1974.42 | 394884  | 504    |    | 5400 | 432030 | 22 | 0 | 1 (6) | 1020 |  |  |  |
|   |        |    |    |     |          | Uplink | Low    | 1717.5  | 343500  | 1710.66 | 342132 | 0  | -    | -      | -  | - | -     |      |  |  |  |
|   |        |    |    |     |          | Mid    | 1740   | 348000  | 1551.72 | 310344  | 504    | -  | -    | -      | -  | - |       |      |  |  |  |
|   |        |    |    |     |          | High   | 1762.7 | 352540  | 1753.7  | 350740  | 6      | -  | -    | -      | -  | - |       |      |  |  |  |
| Channel spacing CC1-CC2=12.3 MHz (Note 1) |        |    |    |     |          |        |        |         |         |         |        |    |      |        |    |   |       |      |  |  |  |
| 15+15                                     | CC2    | 10 | 30 | 24  | Downlink | Low    | 2129.8 | 425960  | 2125.48 | 425096  | 0      | 15 | 5326 | 426050 | 6  | 0 | 3 (8) | 16   |  |  |  |
|   |        |    |    |     |          | Mid    | 2152.3 | 430460  | 2111.26 | 422252  | 102    |    | 5380 | 430370 | 18 | 0 | 0 (5) | 214  |  |  |  |
|   |        |    |    |     |          | High   | 2175   | 435000  | 1989.24 | 397848  | 504    |    | 5436 | 434910 | 18 | 0 | 0 (5) | 1018 |  |  |  |
|   |        |    |    |     |          | Uplink | Low    | 1729.8  | 345960  | 1725.48 | 345096 | 0  | -    | -      | -  | - | -     | -    |  |  |  |
|   |        |    |    |     |          | Mid    | 1752.3 | 350460  | 1566.54 | 313308  | 504    | -  | -    | -      | -  | - |       |      |  |  |  |
|   |        |    |    |     |          | High   | 1775   | 355000  | 1768.52 | 353704  | 6      | -  | -    | -      | -  | - |       |      |  |  |  |
|   | CC1    | 15 | 30 | 38  | Downlink | Low    | 2117.5 | 423500  | 2110.66 | 422132  | 0      | 15 | 5287 | 422930 | 2  | 0 | 1 (6) | 12   |  |  |  |
|   |        |    |    |     |          | Mid    | 2137.5 | 427500  | 2093.94 | 418788  | 102    |    | 5337 | 426990 | 22 | 0 | 1 (6) | 216  |  |  |  |
|   |        |    |    |     |          | High   | 2157.5 | 431500  | 1969.22 | 393844  | 504    |    | 5387 | 431050 | 18 | 0 | 2 (7) | 1022 |  |  |  |
|   |        |    |    |     |          | Uplink | Low    | 1717.5  | 343500  | 1710.66 | 342132 | 0  | -    | -      | -  | - | -     |      |  |  |  |
|   |        |    |    |     |          | Mid    | 1737.5 | 347500  | 1549.22 | 309844  | 504    | -  | -    | -      | -  | - |       |      |  |  |  |
|   |        |    |    |     |          | High   | 1757.5 | 351500  | 1748.5  | 349700  | 6      | -  | -    | -      | -  | - |       |      |  |  |  |
| Channel spacing CC1-CC2=15 MHz (Note 1)   |        |    |    |     |          |        |        |         |         |         |        |    |      |        |    |   |       |      |  |  |  |
| 15+20                                     | CC2    | 15 | 30 | 38  | Downlink | Low    | 2132.5 | 426500  | 2125.66 | 425132  | 0      | 15 | 5326 | 426050 | 18 | 0 | 2 (7) | 14   |  |  |  |
|   |        |    |    |     |          | Mid    | 2152.5 | 430500  | 2108.94 | 421788  | 102    |    | 5373 | 429870 | 6  | 0 | 0 (5) | 214  |  |  |  |
|   |        |    |    |     |          | High   | 2172.5 | 434500  | 1984.22 | 396844  | 504    |    | 5423 | 433930 | 2  | 0 | 1 (6) | 1020 |  |  |  |
|   |        |    |    |     |          | Uplink | Low    | 1732.5  | 346500  | 1725.66 | 345132 | 0  | -    | -      | -  | - | -     | -    |  |  |  |
|   |        |    |    |     |          | Mid    | 1752.5 | 350500  | 1564.22 | 312844  | 504    | -  | -    | -      | -  | - |       |      |  |  |  |
|   |        |    |    |     |          | High   | 1772.5 | 354500  | 1763.5  | 352700  | 6      | -  | -    | -      | -  | - |       |      |  |  |  |
|   | CC1    | 15 | 30 | 38  | Downlink | Low    | 2117.5 | 423500  | 2110.66 | 422132  | 0      | 15 | 5287 | 422930 | 2  | 0 | 1 (6) | 12   |  |  |  |
|   |        |    |    |     |          | Mid    | 2135   | 427000  | 2091.44 | 418288  | 102    |    | 5330 | 426490 | 22 | 0 | 1 (6) | 216  |  |  |  |
|   |        |    |    |     |          | High   | 2152.9 | 430580  | 1964.62 | 392924  | 504    |    | 5377 | 430130 | 18 | 0 | 2 (7) | 1022 |  |  |  |
|   | Uplink |    |    |     |          | Low    | 1717.5 | 343500  | 1710.66 | 342132  | 0      | -  | -    | -      | -  | - | -     |      |  |  |  |
|   |        |    |    |     |          | Mid    | 1735   | 347000  | 1546.72 | 309344  | 504    |    | -    | -      | -  | - | -     |      |  |  |  |
|   |        |    |    |     |          | High   | 1752.9 | 350580  | 1743.9  | 348780  | 6      |    | -    | -      | -  | - | -     |      |  |  |  |
| Channel spacing CC1-CC2=17.1 MHz (Note 1) |        |    |    |     |          |        |        |         |         |         |        |    |      |        |    |   |       |      |  |  |  |
|   | CC2    | 20 | 30 | 51  | Downlink | Low    | 2134.6 | 426920  | 2125.42 | 425084  | 0      | 15 | 5323 | 425810 | 2  | 0 | 0 (5) | 10   |  |  |  |

|       |     |    |    |     |   |   |        |        |         |          |        |        |        |         |        |    |       |       |        |   |   |       |
|-------|-----|----|----|-----|---|---|--------|--------|---------|----------|--------|--------|--------|---------|--------|----|-------|-------|--------|---|---|-------|
|       |     |    |    |     |   | Mid                                       | 2152.1 | 430420 | 2106.2  | 421240   | 102    |        | 5366   | 429370  | 22     | 0  | 0 (5) | 214   |        |   |   |       |
|       |     |    |    |     |   | High                                      | 2170   | 434000 | 1979.38 | 395876   | 504    |        | 5413   | 433010  | 18     | 0  | 1 (6) | 1020  |        |   |   |       |
| 20+10 | CC1 | 20 | 30 | 51  | Downlink                                  | Uplink                                    | Low    | 1734.6 | 346920  | 1725.42  | 345084 | 0      | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     |   | Mid                                       | 1752.1 | 350420 | 1561.48 | 312296   | 504    |        | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     |   | High                                      | 1770   | 354000 | 1758.66 | 351732   | 6      |        | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     | Uplink                                    | Low                                       | 2120   | 424000 | 2110.82 | 422164   | 0      | 15     | 5285   | 422890  | 2      | 0  | 0 (5) | 10    |        |   |   |       |
|       |     |    |    |     |   | Mid                                       | 2140   | 428000 | 2094.1  | 418820   | 102    |        | 5338   | 427010  | 18     | 0  | 1 (6) | 216   |        |   |   |       |
|       |     |    |    |     |   | High                                      | 2160.6 | 432120 | 1969.98 | 393996   | 504    |        | 5388   | 431070  | 22     | 0  | 0 (5) | 1018  |        |   |   |       |
| 20+15 | CC1 | 20 | 30 | 51  | Downlink                                  | Uplink                                    | Low    | 1720   | 344000  | 1710.82  | 342164 | 0      | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     |   | Mid                                       | 1740   | 348000 | 1549.38 | 309876   | 504    |        | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     |   | High                                      | 1760.6 | 352120 | 1749.26 | 349852   | 6      |        | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     |   | Channel spacing CC1-CC2=14.4 MHz (Note 1) |        |        |         |          |        |        |        |         |        |    |       |       |        |   |   |       |
|       |     |    |    |     |   | CC2                                       | 10     | 30     | 24      | Downlink | Low    | 2134.4 | 426880 | 2130.08 | 426016 | 0  | 15    | 5336  | 426970 | 6 | 0 | 3 (8) |
|       |     |    |    |     | Downlink                                  | Mid                                       | 2154.4 | 430880 | 2113.36 | 422672   | 102    |        | 5386   | 430850  | 14     | 0  | 1 (6) | 216   |        |   |   |       |
|       |     |    |    |     |   | High                                      | 2175   | 435000 | 1989.24 | 397848   | 504    |        | 5436   | 434910  | 18     | 0  | 0 (5) | 1018  |        |   |   |       |
|       |     |    |    |     | Uplink                                    | Low                                       | 1734.4 | 346880 | 1730.08 | 346016   | 0      | -      | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     |   | Mid                                       | 1754.4 | 350880 | 1568.64 | 313728   | 504    |        | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     |   | High                                      | 1775   | 355000 | 1768.52 | 353704   | 6      |        | -      | -       | -      | -  | -     | -     |        |   |   |       |
| 20+15 | CC1 | 20 | 30 | 51  | Downlink                                  | Downlink                                  | Low    | 2120   | 424000  | 2110.82  | 422164 | 0      | 15     | 5285    | 422890 | 2  | 0     | 0 (5) | 10     |   |   |       |
|       |     |    |    |     |   | Mid                                       | 2137.5 | 427500 | 2091.6  | 418320   | 102    |        | 5331   | 426510  | 18     | 0  | 1 (6) | 216   |        |   |   |       |
|       |     |    |    |     |   | High                                      | 2155.4 | 431080 | 1964.78 | 392956   | 504    |        | 5375   | 430090  | 18     | 0  | 1 (6) | 1020  |        |   |   |       |
|       |     |    |    |     | Uplink                                    | Low                                       | 1720   | 344000 | 1710.82 | 342164   | 0      | -      | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     |   | Mid                                       | 1737.5 | 347500 | 1546.88 | 309376   | 504    |        | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     |   | High                                      | 1755.4 | 351080 | 1744.06 | 348812   | 6      |        | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     | Channel spacing CC1-CC2=17.1 MHz (Note 1) |   |        |        |         |          |        |        |        |         |        |    |       |       |        |   |   |       |
|       |     |    |    |     | CC2                                       | Downlink                                  | Low    | 2137.1 | 427420  | 2130.26  | 426052 | 0      | 15     | 5336    | 426970 | 18 | 0     | 2 (7) | 14     |   |   |       |
|       |     |    |    |     |   | Mid                                       | 2154.6 | 430920 | 2111.04 | 422208   | 102    |        | 5379   | 430350  | 2      | 0  | 1 (6) | 216   |        |   |   |       |
|       |     |    |    |     |   | High                                      | 2172.5 | 434500 | 1984.22 | 396844   | 504    |        | 5423   | 433930  | 2      | 0  | 1 (6) | 1020  |        |   |   |       |
|       |     |    |    |     | Uplink                                    | Low                                       | 1737.1 | 347420 | 1730.26 | 346052   | 0      | -      | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     |   | Mid                                       | 1754.6 | 350920 | 1566.32 | 313264   | 504    |        | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     |   | High                                      | 1772.5 | 354500 | 1763.5  | 352700   | 6      |        | -      | -       | -      | -  | -     | -     |        |   |   |       |
| 40+10 | CC1 | 40 | 30 | 106 | Downlink                                  | Downlink                                  | Low    | 2130   | 426000  | 2110.92  | 422184 | 0      | 15     | 5286    | 422910 | 2  | 0     | 0 (5) | 10     |   |   |       |
|       |     |    |    |     |   | Mid                                       | 2140   | 428000 | 2084.2  | 416840   | 102    |        | 5314   | 425090  | 14     | 0  | 2 (7) | 218   |        |   |   |       |
|       |     |    |    |     |   | High                                      | 2150.7 | 430140 | 1950.18 | 390036   | 504    |        | 5340   | 427230  | 14     | 0  | 2 (7) | 1022  |        |   |   |       |
|       |     |    |    |     | Uplink                                    | Low                                       | 1730   | 346000 | 1710.92 | 342184   | 0      | -      | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     |   | Mid                                       | 1740   | 348000 | 1539.48 | 307896   | 504    |        | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     |   | High                                      | 1750.7 | 350140 | 1729.46 | 345892   | 6      |        | -      | -       | -      | -  | -     | -     |        |   |   |       |
|       |     |    |    |     | Channel spacing CC1-CC2=24.3 MHz (Note 1) |   |        |        |         |          |        |        |        |         |        |    |       |       |        |   |   |       |
|       |     |    |    |     | CC2                                       | Downlink                                  | Low    | 2154.3 | 430860  | 2149.98  | 429996 | 0      | 15     | 5385    | 430830 | 14 | 0     | 1 (6) | 12     |   |   |       |
|       |     |    |    |     |   | Mid                                       | 2164.3 | 432860 | 2123.26 | 424652   | 102    |        | 5410   | 432770  | 18     | 0  | 0 (5) | 214   |        |   |   |       |
|       |     |    |    |     |   | High                                      | 2175   | 435000 | 1989.24 | 397848   | 504    |        | 5436   | 434910  | 18     | 0  | 0 (5) | 1018  |        |   |   |       |
|       |     |    |    |     | Uplink                                    | Low                                       | 1754.3 | 350860 | 1749.98 | 349996   | 0      | -      | -      | -       | -      | -  | -     | -     |        |   |   |       |

|   |  |  |  |  |      |        |        |         |        |     |   |   |   |   |   |   |
|---|--|--|--|--|------|--------|--------|---------|--------|-----|---|---|---|---|---|---|
|   |  |  |  |  | Mid  | 1764.3 | 352860 | 1578.54 | 315708 | 504 | - | - | - | - | - | - |
|   |  |  |  |  | High | 1775   | 355000 | 1768.52 | 353704 | 6   | - | - | - | - | - | - |
| Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.   |  |  |  |  |      |        |        |         |        |     |   |   |   |   |   |   |
| Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  |  |  |  |  |      |        |        |         |        |     |   |   |   |   |   |   |
| Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |  |  |  |  |      |        |        |         |        |     |   |   |   |   |   |   |
| Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |  |  |  |  |      |        |        |         |        |     |   |   |   |   |   |   |

#### 4.3.1.1.3.67 – 4.3.1.1.3.77 FFS

4.3.1.1.3.78 NR Intra-band contiguous configurations CA\_n78

4.3.1.1.3.78.1 CA\_n78C

Editor's note: Test frequencies for CA\_n78C with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.3.78.1-1: NR Intra-Band contiguous CA configuration CA\_n78C (PCC=CC1 and SCC=CC2), SCS 30 kHz

| CBW combination | CC Note 2                                  | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | CorESET A (SIB1) [PRBs] Note 4 | offsetToPoint A (SIB1) [PRBs] Note 4 |
|-----------------|--|-----------|-----------|-------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------|--------------------------------------|
| 50+60           | CC1  | 50        | 30        | 133                     | Downlink & Uplink | Low                         | 3325.02                | 621668        | 3301.08                           | 620072                         | 0                  | 30   | 7711                          | 620352    | 16                                     | 0                                      | 1 (1)                          | 2                                    |
|                 |  |           |           |                         |                   | Mid                         | 3519.99                | 634666        | 3459.33                           | 630622                         | 102                |      | 7846                          | 633312    | 2                                      | 0                                      | 0 (0)                          | 204                                  |
|                 |  |           |           |                         |                   | High                        | 3715.02                | 647668        | 3509.64                           | 633976                         | 504                |      | 7982                          | 646368    | 8                                      | 0                                      | 2 (2)                          | 1012                                 |
|                 | Channel spacing CC1-CC2=54.96 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                |                                      |
|                 | CC2  | 60        | 30        | 162                     | Downlink & Uplink | Low                         | 3379.98                | 625332        | 3350.82                           | 623388                         | 0                  | 30   | 7746                          | 623712    | 12                                     | 0                                      | 3 (3)                          | 6                                    |
|                 |  |           |           |                         |                   | Mid                         | 3574.95                | 638330        | 3509.07                           | 633938                         | 102                |      | 7881                          | 636672    | 22                                     | 0                                      | 1 (1)                          | 206                                  |
|                 |  |           |           |                         |                   | High                        | 3769.98                | 651332        | 3559.38                           | 637292                         | 504                |      | 8016                          | 649632    | 4                                      | 0                                      | 0 (0)                          | 1008                                 |
|                 | CC1  | 50        | 30        | 133                     | Downlink & Uplink | Low                         | 3325.02                | 621668        | 3301.08                           | 620072                         | 0                  | 30   | 7711                          | 620352    | 16                                     | 0                                      | 1 (1)                          | 2                                    |
|                 |  |           |           |                         |                   | Mid                         | 3510                   | 634000        | 3449.34                           | 629956                         | 102                |      | 7840                          | 632736    | 20                                     | 0                                      | 3 (3)                          | 210                                  |
|                 |  |           |           |                         |                   | High                        | 3695.13                | 646342        | 3489.75                           | 632650                         | 504                |      | 7968                          | 645024    | 14                                     | 0                                      | 1 (1)                          | 1010                                 |
| 50+80           | Channel spacing CC1-CC2=64.86 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                |                                      |
|                 | CC2  | 80        | 30        | 217                     | Downlink & Uplink | Low                         | 3389.88                | 625992        | 3350.82                           | 623388                         | 0                  | 30   | 7746                          | 623712    | 12                                     | 0                                      | 3 (3)                          | 6                                    |
|                 |  |           |           |                         |                   | Mid                         | 3574.86                | 638324        | 3499.08                           | 633272                         | 102                |      | 7874                          | 636000    | 16                                     | 0                                      | 1 (1)                          | 206                                  |
|                 |  |           |           |                         |                   | High                        | 3759.99                | 650666        | 3539.49                           | 635966                         | 504                |      | 8003                          | 648384    | 10                                     | 0                                      | 3 (3)                          | 1014                                 |
|                 | CC1  | 50        | 30        | 133                     | Downlink & Uplink | Low                         | 3325.02                | 621668        | 3301.08                           | 620072                         | 0                  | 30   | 7711                          | 620352    | 16                                     | 0                                      | 1 (1)                          | 2                                    |
|                 |  |           |           |                         |                   | Mid                         | 3500.01                | 633334        | 3439.35                           | 629290                         | 102                |      | 7833                          | 632064    | 14                                     | 0                                      | 3 (3)                          | 210                                  |
|                 |  |           |           |                         |                   | High                        | 3675.24                | 645016        | 3469.86                           | 631324                         | 504                |      | 7954                          | 643680    | 20                                     | 0                                      | 0 (0)                          | 1008                                 |
|                 | Channel spacing CC1-CC2=74.76 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                |                                      |
|                 | CC2  | 100       | 30        | 273                     | Downlink & Uplink | Low                         | 3399.78                | 626652        | 3350.64                           | 623376                         | 0                  | 30   | 7745                          | 623616    | 0                                      | 0                                      | 0 (0)                          | 0                                    |
|                 |  |           |           |                         |                   | Mid                         | 3574.77                | 638318        | 3488.91                           | 632594                         | 102                |      | 7867                          | 635328    | 22                                     | 0                                      | 1 (1)                          | 206                                  |
|                 |  |           |           |                         |                   | High                        | 3750                   | 650000        | 3519.42                           | 634628                         | 504                |      | 7989                          | 647040    | 4                                      | 0                                      | 3 (3)                          | 1014                                 |
| 60+50           | CC1  | 60        | 30        | 162                     | Downlink & Uplink | Low                         | 3330                   | 622000        | 3300.84                           | 620056                         | 0                  | 30   | 7711                          | 620352    | 8                                      | 0                                      | 2 (2)                          | 4                                    |
|                 |  |           |           |                         |                   | Mid                         | 3525                   | 635000        | 3459.12                           | 630608                         | 102                |      | 7846                          | 633312    | 16                                     | 0                                      | 0 (0)                          | 204                                  |
|                 |  |           |           |                         |                   | High                        | 3720.03                | 648002        | 3509.43                           | 633962                         | 504                |      | 7982                          | 646368    | 22                                     | 0                                      | 2 (2)                          | 1012                                 |
|                 | Channel spacing CC1-CC2=54.96 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                |                                      |
|                 | CC2  | 50        | 30        | 133                     | Downlink & Uplink | Low                         | 3384.96                | 625664        | 3361.02                           | 624068                         | 0                  | 30   | 7753                          | 624384    | 4                                      | 0                                      | 3 (3)                          | 6                                    |
|                 |  |           |           |                         |                   | Mid                         | 3579.96                | 638664        | 3519.3                            | 634620                         | 102                |      | 7888                          | 637344    | 12                                     | 0                                      | 1 (1)                          | 206                                  |
|                 |  |           |           |                         |                   | High                        | 3774.99                | 651666        | 3569.61                           | 637974                         | 504                |      | 8024                          | 650400    | 18                                     | 0                                      | 3 (3)                          | 1014                                 |
|                 | CC1  | 60        | 30        | 162                     | Downlink & Uplink | Low                         | 3330                   | 622000        | 3300.84                           | 620056                         | 0                  | 30   | 7711                          | 620352    | 8                                      | 0                                      | 2 (2)                          | 4                                    |
|                 |  |           |           |                         |                   | Mid                         | 3519.99                | 634666        | 3454.11                           | 630274                         | 102                |      | 7843                          | 633024    | 14                                     | 0                                      | 2 (2)                          | 208                                  |
|                 |  |           |           |                         |                   | High                        | 3709.98                | 647332        | 3499.38                           | 633292                         | 504                |      | 7975                          | 645696    | 20                                     | 0                                      | 2 (2)                          | 1012                                 |

| Channel spacing CC1-CC2=60 MHz (Note 1)    |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|--|-----|-----|----|-----|-------------------|------|---------|--------|---------|--------|-----|----|------|--------|----|---|-------|------|
|  | CC2 | 60  | 30 | 162 | Downlink & Uplink | Low  | 3390    | 626000 | 3360.84 | 624056 | 0   | 30 | 7753 | 624384 | 16 | 0 | 3 (3) | 6    |
|  |     |     |    |     |                   | Mid  | 3579.99 | 638666 | 3514.11 | 634274 | 102 |    | 7885 | 637056 | 22 | 0 | 3 (3) | 210  |
|  |     |     |    |     |                   | High | 3769.98 | 651332 | 3559.38 | 637292 | 504 |    | 8016 | 649632 | 4  | 0 | 0 (0) | 1008 |
| 60+80                                      | CC1 | 60  | 30 | 162 | Downlink & Uplink | Low  | 3330    | 622000 | 3300.84 | 620056 | 0   | 30 | 7711 | 620352 | 8  | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 3510    | 634000 | 3444.12 | 629608 | 102 |    | 7836 | 632352 | 8  | 0 | 2 (2) | 208  |
|  |     |     |    |     |                   | High | 3690.09 | 646006 | 3479.49 | 631966 | 504 |    | 7961 | 644352 | 2  | 0 | 2 (2) | 1012 |
| Channel spacing CC1-CC2=69.9 MHz (Note 1)  |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 80  | 30 | 217 | Downlink & Uplink | Low  | 3399.9  | 626660 | 3360.84 | 624056 | 0   | 30 | 7753 | 624384 | 16 | 0 | 3 (3) | 6    |
|  |     |     |    |     |                   | Mid  | 3579.9  | 638660 | 3504.12 | 633608 | 102 |    | 7878 | 636384 | 16 | 0 | 3 (3) | 210  |
|  |     |     |    |     |                   | High | 3759.99 | 650666 | 3539.49 | 635966 | 504 |    | 8003 | 648384 | 10 | 0 | 3 (3) | 1014 |
| 60+100                                     | CC1 | 60  | 30 | 162 | Downlink & Uplink | Low  | 3330    | 622000 | 3300.84 | 620056 | 0   | 30 | 7711 | 620352 | 8  | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 3500.01 | 633334 | 3434.13 | 628942 | 102 |    | 7829 | 631680 | 2  | 0 | 2 (2) | 208  |
|  |     |     |    |     |                   | High | 3670.2  | 644680 | 3459.6  | 630640 | 504 |    | 7947 | 643008 | 8  | 0 | 1 (1) | 1010 |
| Channel spacing CC1-CC2=79.8 MHz (Note 1)  |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 100 | 30 | 273 | Downlink & Uplink | Low  | 3409.8  | 627320 | 3360.66 | 624044 | 0   | 30 | 7752 | 624288 | 4  | 0 | 0 (0) | 0    |
|  |     |     |    |     |                   | Mid  | 3579.81 | 638654 | 3493.95 | 632930 | 102 |    | 7871 | 635712 | 22 | 0 | 3 (3) | 210  |
|  |     |     |    |     |                   | High | 3750    | 650000 | 3519.42 | 634628 | 504 |    | 7989 | 647040 | 4  | 0 | 3 (3) | 1014 |
| 80+50                                      | CC1 | 80  | 30 | 217 | Downlink & Uplink | Low  | 3340.02 | 622668 | 3300.96 | 620064 | 0   | 30 | 7711 | 620352 | 0  | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 3525    | 635000 | 3449.22 | 629948 | 102 |    | 7839 | 632640 | 4  | 0 | 0 (0) | 204  |
|  |     |     |    |     |                   | High | 3710.13 | 647342 | 3489.63 | 632642 | 504 |    | 7968 | 645024 | 22 | 0 | 1 (1) | 1010 |
| Channel spacing CC1-CC2=64.86 MHz (Note 1) |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 50  | 30 | 133 | Downlink & Uplink | Low  | 3404.88 | 626992 | 3380.94 | 625396 | 0   | 30 | 7767 | 625728 | 20 | 0 | 3 (3) | 6    |
|  |     |     |    |     |                   | Mid  | 3589.86 | 639324 | 3529.2  | 635280 | 102 |    | 7895 | 638016 | 0  | 0 | 2 (2) | 208  |
|  |     |     |    |     |                   | High | 3774.99 | 651666 | 3569.61 | 637974 | 504 |    | 8024 | 650400 | 18 | 0 | 3 (3) | 1014 |
| 80+60                                      | CC1 | 80  | 30 | 217 | Downlink & Uplink | Low  | 3340.02 | 622668 | 3300.96 | 620064 | 0   | 30 | 7711 | 620352 | 0  | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 3519.99 | 634666 | 3444.21 | 629614 | 102 |    | 7836 | 632352 | 2  | 0 | 2 (2) | 208  |
|  |     |     |    |     |                   | High | 3700.08 | 646672 | 3479.58 | 631972 | 504 |    | 7961 | 644352 | 20 | 0 | 1 (1) | 1010 |
| Channel spacing CC1-CC2=69.9 MHz (Note 1)  |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 60  | 30 | 162 | Downlink & Uplink | Low  | 3409.92 | 627328 | 3380.76 | 625384 | 0   | 30 | 7766 | 625632 | 8  | 0 | 0 (0) | 0    |
|  |     |     |    |     |                   | Mid  | 3589.89 | 639326 | 3524.01 | 634934 | 102 |    | 7891 | 637632 | 10 | 0 | 0 (0) | 204  |
|  |     |     |    |     |                   | High | 3769.98 | 651332 | 3559.38 | 637292 | 504 |    | 8016 | 649632 | 4  | 0 | 0 (0) | 1008 |
| 80+80                                      | CC1 | 80  | 30 | 217 | Downlink & Uplink | Low  | 3340.02 | 622668 | 3300.96 | 620064 | 0   | 30 | 7711 | 620352 | 0  | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 3510    | 634000 | 3434.22 | 628948 | 102 |    | 7829 | 631680 | 20 | 0 | 1 (1) | 206  |
|  |     |     |    |     |                   | High | 3680.01 | 645334 | 3459.51 | 630634 | 504 |    | 7947 | 643008 | 14 | 0 | 1 (1) | 1010 |
| Channel spacing CC1-CC2=79.98 MHz (Note 1) |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|  | CC2 | 80  | 30 | 217 | Downlink & Uplink | Low  | 3420    | 628000 | 3380.94 | 625396 | 0   | 30 | 7767 | 625728 | 20 | 0 | 3 (3) | 6    |
|  |     |     |    |     |                   | Mid  | 3589.98 | 639332 | 3514.2  | 634280 | 102 |    | 7885 | 637056 | 16 | 0 | 3 (3) | 210  |
|  |     |     |    |     |                   | High | 3759.99 | 650666 | 3539.49 | 635966 | 504 |    | 8003 | 648384 | 10 | 0 | 3 (3) | 1014 |
| 80+100                                     | CC1 | 80  | 30 | 217 | Downlink & Uplink | Low  | 3340.02 | 622668 | 3300.96 | 620064 | 0   | 30 | 7711 | 620352 | 0  | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 3500.01 | 633334 | 3424.23 | 628282 | 102 |    | 7822 | 631008 | 14 | 0 | 1 (1) | 206  |
|  |     |     |    |     |                   | High | 3660.12 | 644008 | 3439.62 | 629308 | 504 |    | 7933 | 641664 | 20 | 0 | 0 (0) | 1008 |

| Channel spacing CC1-CC2=89.88 MHz (Note 1) |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
|--|-----|-----|----|-----|-------------------|------|---------|--------|---------|--------|-----|----|------|--------|----|---|-------|------|
| 100+50                                     | CC2 | 100 | 30 | 273 | Downlink & Uplink | Low  | 3429.9  | 628660 | 3380.76 | 625384 | 0   | 30 | 7766 | 625632 | 8  | 0 | 0 (0) | 0    |
|  |     |     |    |     |                   | Mid  | 3589.89 | 639326 | 3504.03 | 633602 | 102 |    | 7878 | 636384 | 22 | 0 | 3 (3) | 210  |
|  |     |     |    |     |                   | High | 3750    | 650000 | 3519.42 | 634628 | 504 |    | 7989 | 647040 | 4  | 0 | 3 (3) | 1014 |
| 100+50                                     | CC1 | 100 | 30 | 273 | Downlink & Uplink | Low  | 3350.01 | 623334 | 3300.87 | 620058 | 0   | 30 | 7711 | 620352 | 6  | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 3525    | 635000 | 3439.14 | 629276 | 102 |    | 7832 | 631968 | 4  | 0 | 0 (0) | 204  |
|  |     |     |    |     |                   | High | 3700.23 | 646682 | 3469.65 | 631310 | 504 |    | 7954 | 643680 | 10 | 0 | 1 (1) | 1010 |
| Channel spacing CC1-CC2=74.76 MHz (Note 1) |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
| 100+60                                     | CC2 | 50  | 30 | 133 | Downlink & Uplink | Low  | 3424.77 | 628318 | 3400.83 | 626722 | 0   | 30 | 7780 | 626976 | 14 | 0 | 0 (0) | 0    |
|  |     |     |    |     |                   | Mid  | 3599.76 | 639984 | 3539.1  | 635940 | 102 |    | 7902 | 638688 | 12 | 0 | 2 (2) | 208  |
|  |     |     |    |     |                   | High | 3774.99 | 651666 | 3569.61 | 637974 | 504 |    | 8024 | 650400 | 18 | 0 | 3 (3) | 1014 |
| 100+60                                     | CC1 | 100 | 30 | 273 | Downlink & Uplink | Low  | 3350.01 | 623334 | 3300.87 | 620058 | 0   | 30 | 7711 | 620352 | 6  | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 3519.99 | 634666 | 3434.13 | 628942 | 102 |    | 7829 | 631680 | 2  | 0 | 2 (2) | 208  |
|  |     |     |    |     |                   | High | 3690.18 | 646012 | 3459.6  | 630640 | 504 |    | 7947 | 643008 | 8  | 0 | 1 (1) | 1010 |
| Channel spacing CC1-CC2=79.8 MHz (Note 1)  |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
| 100+80                                     | CC2 | 60  | 30 | 162 | Downlink & Uplink | Low  | 3429.81 | 628654 | 3400.65 | 626710 | 0   | 30 | 7780 | 626976 | 2  | 0 | 1 (1) | 2    |
|  |     |     |    |     |                   | Mid  | 3599.79 | 639986 | 3533.91 | 635594 | 102 |    | 7898 | 638304 | 22 | 0 | 0 (0) | 204  |
|  |     |     |    |     |                   | High | 3769.98 | 651332 | 3559.38 | 637292 | 504 |    | 8016 | 649632 | 4  | 0 | 0 (0) | 1008 |
| 100+80                                     | CC1 | 100 | 30 | 273 | Downlink & Uplink | Low  | 3350.01 | 623334 | 3300.87 | 620058 | 0   | 30 | 7711 | 620352 | 6  | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 3510    | 634000 | 3424.14 | 628276 | 102 |    | 7822 | 631008 | 20 | 0 | 1 (1) | 206  |
|  |     |     |    |     |                   | High | 3670.11 | 644674 | 3439.53 | 629302 | 504 |    | 7933 | 641664 | 2  | 0 | 1 (1) | 1010 |
| Channel spacing CC1-CC2=89.88 MHz (Note 1) |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
| 100+80                                     | CC2 | 80  | 30 | 217 | Downlink & Uplink | Low  | 3439.89 | 629326 | 3400.83 | 626722 | 0   | 30 | 7780 | 626976 | 14 | 0 | 0 (0) | 0    |
|  |     |     |    |     |                   | Mid  | 3599.88 | 639992 | 3524.1  | 634940 | 102 |    | 7891 | 637632 | 4  | 0 | 0 (0) | 204  |
|  |     |     |    |     |                   | High | 3759.99 | 650666 | 3539.49 | 635966 | 504 |    | 8003 | 648384 | 10 | 0 | 3 (3) | 1014 |
| 100+100                                    | CC1 | 100 | 30 | 273 | Downlink & Uplink | Low  | 3350.01 | 623334 | 3300.87 | 620058 | 0   | 30 | 7711 | 620352 | 6  | 0 | 2 (2) | 4    |
|  |     |     |    |     |                   | Mid  | 3500.01 | 633334 | 3414.15 | 627610 | 102 |    | 7815 | 630336 | 14 | 0 | 1 (1) | 206  |
|  |     |     |    |     |                   | High | 3650.04 | 643336 | 3419.46 | 627964 | 504 |    | 7919 | 640320 | 20 | 0 | 0 (0) | 1008 |
| Channel spacing CC1-CC2=99.96 MHz (Note 1) |     |     |    |     |                   |      |         |        |         |        |     |    |      |        |    |   |       |      |
| 100+100                                    | CC2 | 100 | 30 | 273 | Downlink & Uplink | Low  | 3449.97 | 629998 | 3400.83 | 626722 | 0   | 30 | 7780 | 626976 | 14 | 0 | 0 (0) | 0    |
|  |     |     |    |     |                   | Mid  | 3599.97 | 639998 | 3514.11 | 634274 | 102 |    | 7885 | 637056 | 22 | 0 | 3 (3) | 210  |
|  |     |     |    |     |                   | High | 3750    | 650000 | 3519.42 | 634628 | 504 |    | 7989 | 647040 | 4  | 0 | 3 (3) | 1014 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.1.3.78.2 CA\_n78B

Editor's note: Test frequencies for CA\_n78B with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

Table 4.3.1.1.3.78.2-1: NR Intra-Band contiguous CA configuration CA\_n78B (PCC=CC1 and SCC=CC2), SCS 15 kHz and  $\Delta F_{\text{Raster}} = 15 \text{ kHz}$ 

| CBW combination | CC Note 2                                  | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2                | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | CorESET#0Index (Offs et [RBs]) Note 3 | offsetToPointA (SIB1) [PRBs] Note 4 |
|-----------------|--|-----------|-----------|-------------------------|-------------------|--|------------------------|---------------|----------------------------------|--------------------------------|--------------------|------|------------------------------|------------------|---------------------------------------|---------------------------------------|---------------------------------------|-------------------------------------|
| 20+50           | CC1  | 20        | 15        | 106                     | Downlink & Uplink | Low  | 3310.005               | 620667        | 3300.465                         | 620031                         | 0                  | 30   | 7711                         | 620352           | 9                                     | 0                                     | 1 (6)                                 | 6                                   |
|                 |  |           |           |                         |                   | Mid  | 3525                   | 635000        | 3497.1                           | 633140                         | 102                |      | 7860                         | 634656           | 4                                     | 2                                     | 0 (2)                                 | 106                                 |
|                 |  |           |           |                         |                   | High                                       | 3740.25                | 649350        | 3639.99                          | 642666                         | 504                |      | 8010                         | 649056           | 6                                     | 2                                     | 1 (6)                                 | 512                                 |
|                 | CC2  | 50        | 15        | 270                     | Downlink & Uplink | Channel spacing CC1-CC2=34.74 MHz (Note 1) |                        |               |                                  |                                |                    |      |                              |                  |                                       |                                       |                                       |                                     |
|                 |  |           |           |                         |                   | Low  | 3344.745               | 622983        | 3320.445                         | 621363                         | 0                  | 30   | 7725                         | 621696           | 9                                     | 1                                     | 1 (6)                                 | 7                                   |
|                 |  |           |           |                         |                   | Mid  | 3559.74                | 637316        | 3517.08                          | 634472                         | 102                |      | 7874                         | 636000           | 4                                     | 3                                     | 0 (2)                                 | 107                                 |
|                 |  |           |           |                         |                   | High                                       | 3774.99                | 651666        | 3659.97                          | 643998                         | 504                |      | 8024                         | 650400           | 6                                     | 3                                     | 1 (6)                                 | 513                                 |
|                 | CC1  | 50        | 15        | 270                     | Downlink & Uplink | Low  | 3325.005               | 621667        | 3300.705                         | 620047                         | 0                  | 30   | 7711                         | 620352           | 5                                     | 3                                     | 0 (2)                                 | 5                                   |
|                 |  |           |           |                         |                   | Mid  | 3540                   | 636000        | 3497.34                          | 633156                         | 102                |      | 7860                         | 634656           | 0                                     | 1                                     | 0 (2)                                 | 105                                 |
|                 |  |           |           |                         |                   | High                                       | 3755.25                | 650350        | 3640.23                          | 642682                         | 504                |      | 8010                         | 649056           | 2                                     | 1                                     | 1 (6)                                 | 511                                 |
| 50+20           | Channel spacing CC1-CC2=34.74 MHz (Note 1) |           |           |                         |                   |  |                        |               |                                  |                                |                    |      |                              |                  |                                       |                                       |                                       |                                     |
|                 | CC2  | 20        | 15        | 106                     | Downlink & Uplink | Low  | 3359.745               | 623983        | 3350.205                         | 623347                         | 0                  | 30   | 7745                         | 623616           | 5                                     | 0                                     | 0 (2)                                 | 2                                   |
|                 |  |           |           |                         |                   | Mid  | 3574.74                | 638316        | 3546.84                          | 636456                         | 102                |      | 7895                         | 638016           | 0                                     | 2                                     | 1 (6)                                 | 110                                 |
|                 |  |           |           |                         |                   | High                                       | 3789.99                | 652666        | 3689.73                          | 645982                         | 504                |      | 8044                         | 652320           | 2                                     | 2                                     | 0 (2)                                 | 508                                 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.1.3.78.2-2: NR Intra-Band contiguous CA configuration CA\_n78B (PCC=CC1 and SCC=CC2), SCS 30 kHz and  $\Delta F_{\text{Raster}}$  30 kHz

| CBW combination                            | CC Note 2                                  | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | CorESET#0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |
|--|--|-----------|-----------|-------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|------------------|---------------------------------------|---------------------------------------|---------------------------------------|-------------------------------------|
| 20+50                                      | CC1  | 20        | 30        | 51                      | Downlink & Uplink | Low                         | 3310.02                | 620668        | 3300.84                           | 620056                         | 0                  | 30   | 7711                          | 620352           | 8                                     | 0                                     | 2 (2)                                 | 4                                   |
|  |  |           |           |                         |                   | Mid                         | 3525                   | 635000        | 3479.1                            | 631940                         | 102                |      | 7860                          | 634656           | 4                                     | 0                                     | 1 (1)                                 | 206                                 |
|  |  |           |           |                         |                   | High                        | 3740.25                | 649350        | 3549.63                           | 636642                         | 504                |      | 8010                          | 649056           | 6                                     | 0                                     | 3 (3)                                 | 1014                                |
|  | Channel spacing CC1-CC2=34.74 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                   |                                |                    |      |                               |                  |                                       |                                       |                                       |                                     |
|  | CC2  | 50        | 30        | 133                     | Downlink & Uplink | Low                         | 3344.76                | 622984        | 3320.82                           | 621388                         | 0                  | 30   | 7725                          | 621696           | 20                                    | 0                                     | 2 (2)                                 | 4                                   |
|  |  |           |           |                         |                   | Mid                         | 3559.74                | 637316        | 3499.08                           | 633272                         | 102                |      | 7874                          | 636000           | 16                                    | 0                                     | 1 (1)                                 | 206                                 |
|  |  |           |           |                         |                   | High                        | 3774.99                | 651666        | 3569.61                           | 637974                         | 504                |      | 8024                          | 650400           | 18                                    | 0                                     | 3 (3)                                 | 1014                                |
|  | CC1  | 50        | 30        | 133                     | Downlink & Uplink | Low                         | 3325.02                | 621668        | 3301.08                           | 620072                         | 0                  | 30   | 7711                          | 620352           | 16                                    | 0                                     | 1 (1)                                 | 2                                   |
|  |  |           |           |                         |                   | Mid                         | 3540                   | 636000        | 3479.34                           | 631956                         | 102                |      | 7860                          | 634656           | 12                                    | 0                                     | 0 (0)                                 | 204                                 |
|  |  |           |           |                         |                   | High                        | 3755.25                | 650350        | 3549.87                           | 636658                         | 504                |      | 8010                          | 649056           | 14                                    | 0                                     | 2 (2)                                 | 1012                                |
| Channel spacing CC1-CC2=34.74 MHz (Note 1) |  |           |           |                         |                   |                             |                        |               |                                   |                                |                    |      |                               |                  |                                       |                                       |                                       |                                     |
|  | CC2  | 20        | 30        | 51                      | Downlink & Uplink | Low                         | 3359.76                | 623984        | 3350.58                           | 623372                         | 0                  | 30   | 7745                          | 623616           | 4                                     | 0                                     | 0 (0)                                 | 0                                   |
|  |  |           |           |                         |                   | Mid                         | 3574.74                | 638316        | 3528.84                           | 635256                         | 102                |      | 7895                          | 638016           | 0                                     | 0                                     | 3 (3)                                 | 210                                 |
|  |  |           |           |                         |                   | High                        | 3789.99                | 652666        | 3599.37                           | 639958                         | 504                |      | 8044                          | 652320           | 2                                     | 0                                     | 1 (1)                                 | 1010                                |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-1 [7], clause 5.4.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.1.4      Void

4.3.1.1.5      NR intra-band non-contiguous CA configurations in FR1

4.3.1.1.5.1 – 4.3.1.1.5.65 FFS

4.3.1.1.5.66      CA\_n66(2A)

Editor's note: Test frequencies for CA\_n66(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

**Table 4.3.1.1.5.66-1: NR Intra-Band non-contiguous CA configuration CA\_n66(2A), SCS=15 kHz, Max Wgap**

| CBW<br>combi<br>nation                    | CC  | Band<br>width<br>[MHz] | carrier<br>Bandw<br>idth<br>[PRBs] | Range             | Gap         | Test frequencies and signalling parameters                               |
|---|-----|------------------------|------------------------------------|-------------------|-------------|--|
| <b>CA_n66(2A); A (5MHz) - A(5-40MHz)</b>  |     |                        |                                    |                   |             |  |
| 5-5                                       | CC1 | 5                      | 25                                 | Downlink & Uplink | Max<br>Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/5    |
|   | CC2 | 5                      | 25                                 | Downlink          |             | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/5   |
| 5-10                                      | CC1 | 5                      | 25                                 | Downlink & Uplink | Max<br>Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/5    |
|   | CC2 | 10                     | 52                                 | Downlink          |             | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/5   |
| 5-15                                      | CC1 | 5                      | 25                                 | Downlink & Uplink | Max<br>Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/5    |
|   | CC2 | 15                     | 79                                 | Downlink          |             | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/5   |
| 5-20                                      | CC1 | 5                      | 25                                 | Downlink & Uplink | Max<br>Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/5    |
|   | CC2 | 20                     | 106                                | Downlink          |             | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/5   |
| 5-40                                      | CC1 | 5                      | 25                                 | Downlink & Uplink | Max<br>Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/5    |
|   | CC2 | 40                     | 216                                | Downlink          |             | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 5/5   |
| <b>CA_n66(2A); A (10MHz) - A(5-40MHz)</b> |     |                        |                                    |                   |             |  |
| 10-5                                      | CC1 | 10                     | 52                                 | Downlink & Uplink | Max<br>Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 10/10  |
|   | CC2 | 5                      | 25                                 | Downlink          |             | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 10/10 |
| 10-10                                     | CC1 | 10                     | 52                                 | Downlink & Uplink | Max<br>Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 10/10  |
|   | CC2 | 10                     | 52                                 | Downlink          |             | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 10/10 |
| 10-15                                     | CC1 | 10                     | 52                                 | Downlink & Uplink | Max<br>Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 10/10  |
|   | CC2 | 15                     | 79                                 | Downlink          |             | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 10/10 |
| 10-20                                     | CC1 | 10                     | 52                                 | Downlink & Uplink | Max<br>Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 10/10  |
|   | CC2 | 20                     | 106                                | Downlink          |             | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 10/10 |
| 10-40                                     | CC1 | 10                     | 52                                 | Downlink & Uplink | Max<br>Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 10/10  |
|   | CC2 | 40                     | 216                                | Downlink          |             | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 10/10 |

| CA_n66(2A); A (15MHz) - A(5-40MHz) |     |    |     |                   |          |  |
|------------------------------------|-----|----|-----|-------------------|----------|--|
| 15-5                               | CC1 | 15 | 79  | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 15/15  |
|                                    | CC2 | 5  | 25  | Downlink          |          | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 15/15   |
| 15-10                              | CC1 | 15 | 79  | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 15/15  |
|                                    | CC2 | 10 | 52  | Downlink          |          | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 15/15   |
| 15-15                              | CC1 | 15 | 79  | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 15/15  |
|                                    | CC2 | 15 | 79  | Downlink          |          | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 15/15   |
| 15-20                              | CC1 | 15 | 79  | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 15/15  |
|                                    | CC2 | 20 | 106 | Downlink          |          | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 15/15   |
| 15-40                              | CC1 | 15 | 79  | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 15/15  |
|                                    | CC2 | 40 | 216 | Downlink          |          | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 15/15   |
| CA_n66(2A); A (20MHz) - A(5-40MHz) |     |    |     |                   |          |  |
| 20-5                               | CC1 | 20 | 106 | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth        |
|                                    | CC2 | 5  | 25  | Downlink          |          | Table 4.3.1.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1   |
| 20-10                              | CC1 | 20 | 106 | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth        |
|                                    | CC2 | 10 | 52  | Downlink          |          | Table 4.3.1.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1   |
| 20-15                              | CC1 | 20 | 106 | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth        |
|                                    | CC2 | 15 | 79  | Downlink          |          | Table 4.3.1.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1   |
| 20-20                              | CC1 | 20 | 106 | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth        |
|                                    | CC2 | 20 | 106 | Downlink          |          | Table 4.3.1.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1   |
| 20-40                              | CC1 | 20 | 106 | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/20, 10/20 or 20/20 depending on required UL bandwidth        |
|                                    | CC2 | 40 | 216 | Downlink          |          | Table 4.3.1.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1   |
| CA_n66(2A); A (40MHz) - A(5-20MHz) |     |    |     |                   |          |  |
| 40-5                               | CC1 | 20 | 106 | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth |
|                                    | CC2 | 5  | 25  | Downlink          |          | Table 4.3.1.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1   |
| 40-10                              | CC1 | 20 | 106 | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth |
|                                    | CC2 | 10 | 52  | Downlink          |          | Table 4.3.1.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1   |
| 40-15                              | CC1 | 20 | 106 | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth |
|                                    | CC2 | 15 | 79  | Downlink          |          | Table 4.3.1.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1   |
| 40-20                              | CC1 | 20 | 106 | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-1: Low range for UL/DL Bandwidth combination = 5/40, 10/40, 20/40 or 40/40 depending on required UL bandwidth |
|                                    | CC2 | 20 | 106 | Downlink          |          | Table 4.3.1.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1   |

**Table 4.3.1.1.5.66-2: NR Intra-Band non-contiguous CA configuration CA\_n66(2A), SCS=30 kHz, Max Wgap**

| CBW combination                            | CC  | Band width [MHz] | carrier Bandwidth [PRBs] | Range             | Gap      | Test frequencies and signalling parameters  |
|--|-----|------------------|--------------------------|-------------------|----------|---|
| <b>CA_n66(2A); A (10MHz) - A(10-40MHz)</b> |     |                  |                          |                   |          |   |
| 10-10                                      | CC1 | 10               | 52                       | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/10   |
|  | CC2 | 10               | 52                       | Downlink          |          | Table 4.3.1.1.1.66-2: High range for UL/DL Bandwidth combination = 10/10  |
| 10-15                                      | CC1 | 10               | 52                       | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/10   |
|  | CC2 | 15               | 79                       | Downlink          |          | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 10/10  |
| 10-20                                      | CC1 | 10               | 52                       | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/10   |
|  | CC2 | 20               | 106                      | Downlink          |          | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 10/10  |
| 10-40                                      | CC1 | 10               | 52                       | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/10   |
|  | CC2 | 40               | 216                      | Downlink          |          | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 10/10  |
| <b>CA_n66(2A); A (15MHz) - A(10-40MHz)</b> |     |                  |                          |                   |          |   |
| 15-10                                      | CC1 | 15               | 79                       | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 15/15   |
|  | CC2 | 10               | 52                       | Downlink          |          | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 15/15  |
| 15-15                                      | CC1 | 15               | 79                       | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 15/15   |
|  | CC2 | 15               | 79                       | Downlink          |          | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 15/15  |
| 15-20                                      | CC1 | 15               | 79                       | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 15/15   |
|  | CC2 | 20               | 106                      | Downlink          |          | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 15/15  |
| 15-40                                      | CC1 | 15               | 79                       | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 15/15   |
|  | CC2 | 40               | 216                      | Downlink          |          | Table 4.3.1.1.1.66-1: High range for UL/DL Bandwidth combination = 15/15  |
| <b>CA_n66(2A); A (20MHz) - A(10-40MHz)</b> |     |                  |                          |                   |          |   |
| 20-10                                      | CC1 | 20               | 106                      | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/20 or 20/20 depending on required UL bandwidth |
|  | CC2 | 10               | 52                       | Downlink & Uplink |          | Table 4.3.1.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1                                    |
| 20-15                                      | CC1 | 20               | 106                      | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/20 or 20/20 depending on required UL bandwidth |
|  | CC2 | 15               | 79                       | Downlink & Uplink |          | Table 4.3.1.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1                                    |
| 20-20                                      | CC1 | 20               | 106                      | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/20 or 20/20 depending on required UL bandwidth |
|  | CC2 | 20               | 106                      | Downlink & Uplink |          | Table 4.3.1.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1                                    |
| 20-40                                      | CC1 | 20               | 106                      | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/20 or 20/20 depending on required UL bandwidth |
|  | CC2 | 40               | 216                      | Downlink & Uplink |          | Table 4.3.1.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1                                    |
| <b>CA_n66(2A); A (40MHz) - A(10-20MHz)</b> |     |                  |                          |                   |          |   |
| 40-10                                      | CC1 | 20               | 106                      | Downlink & Uplink | Max Wgap | Table 4.3.1.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/40 or 20/40 depending on required UL bandwidth |
|  | CC2 | 10               | 52                       | Downlink & Uplink |          | Table 4.3.1.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1                                    |

|       |     |    |     |                   |          |   |
|-------|-----|----|-----|-------------------|----------|---|
| 40-15 | CC1 | 20 | 106 | Downlink & Uplink | Max Wgap | Table 4.3.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/40 or 20/40 depending on required UL bandwidth |
|       | CC2 | 15 | 79  | Downlink & Uplink |          | Table 4.3.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1                                    |
| 40-20 | CC1 | 20 | 106 | Downlink & Uplink | Max Wgap | Table 4.3.1.1.66-2: Low range for UL/DL Bandwidth combination = 10/40 or 20/40 depending on required UL bandwidth |
|       | CC2 | 20 | 106 | Downlink & Uplink |          | Table 4.3.1.1.66-1: High range for same UL/DL Bandwidth combination as for CC1                                    |

## 4.3.1.1.5.67 – 4.3.1.1.5.76 FFS

## 4.3.1.1.5.77 CA\_n77(2A)

Editor's note: Test frequencies for CA\_n77(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

**Table 4.3.1.1.5.77-1: NR Intra-Band non-contiguous CA configuration CA\_n77(2A), SCS=15 kHz, Max Wgap**

| CBW combination                              | CC  | Bandwidth [MHz] | Range             | Gap      | Test frequencies and signalling parameters            |
|--|-----|-----------------|-------------------|----------|---|
| <b>CA_n77(2A); A(20-40MHz) - A(20-40MHz)</b> |     |                 |                   |          |   |
| CBW1+CBW2                                    | CC1 | CBW1            | Downlink & Uplink | Max Wgap | Table 4.3.1.1.77-1: Low range for CBW = 20 OR 40 MHz  |
|  | CC2 | CBW2            | Downlink          |          | Table 4.3.1.1.77-1: High range for CBW = 20 OR 40 MHz |

**Table 4.3.1.1.5.77-2: NR Intra-Band non-contiguous CA configuration CA\_n77(2A), SCS=30 kHz, Max Wgap**

| CBW combination                                | CC  | Bandwidth [MHz] | Range             | Gap      | Test frequencies and signalling parameters                     |
|--|-----|-----------------|-------------------|----------|--|
| <b>CA_n77(2A); A(20-100MHz) - A(20-100MHz)</b> |     |                 |                   |          |  |
| CBW1+CBW2                                      | CC1 | CBW1            | Downlink & Uplink | Max Wgap | Table 4.3.1.1.77-2: Low range for CBW = 20, 40, 80 OR 100 MHz  |
|  | CC2 | CBW2            | Downlink          |          | Table 4.3.1.1.77-2: High range for CBW = 20, 40, 80 OR 100 MHz |

## 4.3.1.1.5.78 CA\_n78(2A)

Editor's note: Test frequencies for CA\_n78(2A) with mixed numerology with SCS CC1=15kHz and SCS CC2=30 kHz or 60kHz; and SCS CC1=30kHz and SCS CC2=15 kHz or 60 kHz is FFS.

**Table 4.3.1.1.5.78-1: NR Intra-Band non-contiguous CA configuration CA\_n78(2A), SCS=15 kHz, Max Wgap**

| CBW combination                              | CC  | Bandwidth [MHz] | Range             | Gap      | Test frequencies and signalling parameters                            |
|--|-----|-----------------|-------------------|----------|---|
| <b>CA_n78(2A); A(10-50MHz) - A(10-50MHz)</b> |     |                 |                   |          |   |
| CBW1+CBW2                                    | CC1 | CBW1            | Downlink & Uplink | Max Wgap | Table 4.3.1.1.78-1: Low range for CBW = 10, 20, 25, 30, 40 OR 50 MHz  |
|  | CC2 | CBW2            | Downlink          |          | Table 4.3.1.1.78-1: High range for CBW = 10, 20, 25, 30, 40 OR 50 MHz |

**Table 4.3.1.1.5.78-2: NR Intra-Band non-contiguous CA configuration CA\_n78(2A), SCS=30 kHz, Max Wgap**

| CBW combination                                | CC  | Bandwidth [MHz] | Range             | Gap      | Test frequencies and signalling parameters   |
|--|-----|-----------------|-------------------|----------|--|
| <b>CA_n78(2A); A(10-100MHz) - A(10-100MHz)</b> |     |                 |                   |          |  |
| CBW1+CBW2                                      | CC1 | CBW1            | Downlink & Uplink | Max Wgap | Table 4.3.1.1.78-2: Low range for CBW = 10, 20, 25, 30, 40, 50, 60, 70, 80, 90 OR 100 MHz  |
|  | CC2 | CBW2            | Downlink          |          | Table 4.3.1.1.78-2: High range for CBW = 10, 20, 25, 30, 40, 50, 60, 70, 80, 90 OR 100 MHz |

#### 4.3.1.1.6 NR Operating SUL band combinations in FR1

### 4.3.1.2 Test frequencies for NR operating bands in FR2

#### 4.3.1.2.1 NR operating bands in FR2

##### 4.3.1.2.1.1 Reference test frequencies for NR operating band n257

**Table 4.3.1.2.1.1-1: Test frequencies for NR operating band n257, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  60 kHz**

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|--|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|------------------|--|--|-------------------------------------|
| 50   | 66                       | Downlink & Uplink | Low  | 26525.04             | 2054583                | 26501.28      | 2054187                           | 0                               | 120                | 22388 | 2054683                       | 4                | 13                                     | 1 (8)                                  | 21                                  |
|  |                          |                   | Mid  | 27999.96             | 2079165                | 27902.76      | 2077545                           | 102                             |                    | 22473 | 2079163                       | 10               | 4                                      | 1 (8)                                  | 114                                 |
|  |                          |                   | High | 29475                | 2103749                | 29088.36      | 2097305                           | 504                             |                    | 22558 | 2103643                       | 2                | 4                                      | 0 (0)                                  | 508                                 |
| 100  | 132                      | Downlink & Uplink | Low  | 26550                | 2054999                | 26502.48      | 2054207                           | 0                               | 120                | 22388 | 2054683                       | 8                | 11                                     | 1 (8)                                  | 19                                  |
|  |                          |                   | Mid  | 27999.96             | 2079165                | 27879         | 2077149                           | 102                             |                    | 22472 | 2078875                       | 10               | 13                                     | 1 (8)                                  | 123                                 |
|  |                          |                   | High | 29449.92             | 2103331                | 29039.52      | 2096491                           | 504                             |                    | 22555 | 2102779                       | 0                | 0                                      | 0 (0)                                  | 504                                 |
| 200  | 264                      | Downlink & Uplink | Low  | 26600.04             | 2055833                | 26505         | 2054249                           | 0                               | 120                | 22388 | 2054683                       | 2                | 8                                      | 1 (8)                                  | 16                                  |
|  |                          |                   | Mid  | 27999.96             | 2079165                | 27831.48      | 2076357                           | 102                             |                    | 22469 | 2078011                       | 10               | 7                                      | 1 (8)                                  | 117                                 |
|  |                          |                   | High | 29400                | 2102499                | 28942.08      | 2094867                           | 504                             |                    | 22550 | 2101339                       | 4                | 7                                      | 1 (8)                                  | 519                                 |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled controlResourceSetZero (pdcc-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |                   |      |                      |                        |               |                                   |                                 |                    |       |                               |                  |  |  |                                     |

Table 4.3.1.2.1.1-2: Test frequencies for NR operating band n257, SCS 120kHz and  $\Delta F_{\text{Raster}}$  120 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 Index [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|------------------|--|--|-------------------------------------|
| 50        | 32                       | Downlink & Uplink | Low  | 26525.04             | 2054583                | 26502         | 2054199                           | 0                               | 120                | 22388 | 2054683                       | 2                | 6  | 1 (4)                                  | 20                                  |
|           |                          |                   | Mid  | 27999.96             | 2079165                | 27830.04      | 2076333                           | 102                             |                    | 22473 | 2079163                       | 11               | 1  | 1 (4)                                  | 214                                 |
|           |                          |                   | High | 29475                | 2103749                | 28726.2       | 2091269                           | 504                             |                    | 22558 | 2103643                       | 7                | 1  | 0 (0)                                  | 1010                                |
| 100       | 66                       | Downlink & Uplink | Low  | 26550                | 2054999                | 26502.48      | 2054207                           | 0                               | 120                | 22388 | 2054683                       | 10               | 5  | 1 (4)                                  | 18                                  |
|           |                          |                   | Mid  | 27999.96             | 2079165                | 27805.56      | 2075925                           | 102                             |                    | 22472 | 2078875                       | 11               | 6  | 1 (4)                                  | 224                                 |
|           |                          |                   | High | 29449.92             | 2103331                | 28676.64      | 2090443                           | 504                             |                    | 22555 | 2102779                       | 0                | 0  | 0 (0)                                  | 1008                                |
| 200       | 132                      | Downlink & Uplink | Low  | 26600.04             | 2055833                | 26505         | 2054249                           | 0                               | 120                | 22388 | 2054683                       | 1                | 4  | 1 (4)                                  | 16                                  |
|           |                          |                   | Mid  | 27999.96             | 2079165                | 27758.04      | 2075133                           | 102                             |                    | 22469 | 2078011                       | 11               | 3  | 1 (4)                                  | 218                                 |
|           |                          |                   | High | 29400                | 2102499                | 28579.2       | 2088819                           | 504                             |                    | 22550 | 2101339                       | 8                | 3  | 1 (4)                                  | 1022                                |
| 400       | 264                      | Downlink & Uplink | Low  | 26700                | 2057499                | 26509.92      | 2054331                           | 0                               | 120                | 22388 | 2054683                       | 8                | 0  | 1 (4)                                  | 8                                   |
|           |                          |                   | Mid  | 27999.96             | 2079165                | 27663         | 2073549                           | 102                             |                    | 22463 | 2076283                       | 11               | 1  | 0 (0)                                  | 206                                 |
|           |                          |                   | High | 29299.92             | 2100831                | 28384.08      | 2085567                           | 504                             |                    | 22539 | 2098171                       | 2                | 7  | 1 (4)                                  | 1030                                |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

## 4.3.1.2.1.2

Reference test frequencies for NR operating band n258

**Table 4.3.1.2.1.2-1: Test frequencies for NR operating band n258, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  60 kHz**

| <b>CBW [MHz]</b>  | <b>carrier Bandwidth [PRBs]</b> | <b>Range</b>      |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absolute FrequencyPoint A [ARFCN]</b> | <b>offsetTo Carrier [Carrier PRBs]</b> | <b>SS block SCS [kHz]</b> | <b>GSCN</b> | <b>absolute FrequencySSB [ARFCN]</b> | <b><math>k_{\text{SSB}}</math></b> | <b>Offset Carrier CORE SET#0 Index [RBs] Note 2</b> | <b>CORE SET#0 Index (Offset [RBs]) Note 1</b> | <b>offsetToPointA (SIB1) [PRBs] Note 1</b> |
|---|---------------------------------|-------------------|------|-----------------------------|-------------------------------|----------------------|--|--|---------------------------|-------------|--------------------------------------|------------------------------------|---|---|--|
| 50  | 66                              | Downlink & Uplink | Low  | 24275.04                    | 2017083                       | 24251.28             | 2016687                                  | 0                                      | 120                       | 22257       | 2016955                              | 4                                  | 2   | 0 (0)   | 2  |
|   |                                 |                   | Mid  | 25875                       | 2043749                       | 25777.8              | 2042129                                  | 102                                    |                           | 22350       | 2043739                              | 2                                  | 4   | 1 (8)   | 114  |
|   |                                 |                   | High | 27474.96                    | 2070415                       | 27088.32             | 2063971                                  | 504                                    |                           | 22443       | 2070523                              | 0                                  | 14  | 1 (8)   | 526  |
| 100   | 132                             | Downlink & Uplink | Low  | 24300                       | 2017499                       | 24252.48             | 2016707                                  | 0                                      | 120                       | 22257       | 2016955                              | 8                                  | 0   | 0 (0)   | 0  |
|   |                                 |                   | Mid  | 25875                       | 2043749                       | 25754.04             | 2041733                                  | 102                                    |                           | 22349       | 2043451                              | 2                                  | 13  | 1 (8)   | 123  |
|   |                                 |                   | High | 27450                       | 2069999                       | 27039.6              | 2063159                                  | 504                                    |                           | 22440       | 2069659                              | 8                                  | 9   | 1 (8)   | 521  |
| 200   | 264                             | Downlink & Uplink | Low  | 24350.04                    | 2018333                       | 24255                | 2016749                                  | 0                                      | 120                       | 22258       | 2017243                              | 2                                  | 13  | 1 (8)   | 21   |
|   |                                 |                   | Mid  | 25875                       | 2043749                       | 25706.52             | 2040941                                  | 102                                    |                           | 22346       | 2042587                              | 2                                  | 7   | 1 (8)   | 117  |
|   |                                 |                   | High | 27399.96                    | 2069165                       | 26942.04             | 2061533                                  | 504                                    |                           | 22434       | 2067931                              | 2                                  | 1   | 1 (8)   | 513  |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                                 |                   |      |                             |                               |                      |  |  |                           |             |                                      |                                    |   |   |  |

Table 4.3.1.2.1.2: Test frequencies for NR operating band n258, SCS 120kHz and  $\Delta F_{\text{Raster}}$  120 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 Index [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|------------------|--|--|-------------------------------------|
| 50        | 32                       | Downlink & Uplink | Low  | 24275.04             | 2017083                | 24252         | 2016699                           | 0                               | 120                | 22257 | 2016955                       | 8                | 0  | 0 (0)                                  | 0                                   |
|           |                          |                   | Mid  | 25875                | 2043749                | 25705.08      | 2040917                           | 102                             |                    | 22350 | 2043739                       | 7                | 1  | 1 (4)                                  | 214                                 |
|           |                          |                   | High | 27474.96             | 2070415                | 26726.16      | 2057935                           | 504                             |                    | 22443 | 2070523                       | 6                | 6  | 1 (4)                                  | 1028                                |
| 100       | 66                       | Downlink & Uplink | Low  | 24300                | 2017499                | 24252.48      | 2016707                           | 0                               | 120                | 22257 | 2016955                       | 4                | 0  | 0 (0)                                  | 0                                   |
|           |                          |                   | Mid  | 25875                | 2043749                | 25680.6       | 2040509                           | 102                             |                    | 22349 | 2043451                       | 7                | 6  | 1 (4)                                  | 224                                 |
|           |                          |                   | High | 27450                | 2069999                | 26676.72      | 2057111                           | 504                             |                    | 22440 | 2069659                       | 10               | 4  | 1 (4)                                  | 1024                                |
| 200       | 132                      | Downlink & Uplink | Low  | 24350.04             | 2018333                | 24255         | 2016749                           | 0                               | 120                | 22258 | 2017243                       | 7                | 6  | 1 (4)                                  | 20                                  |
|           |                          |                   | Mid  | 25875                | 2043749                | 25633.08      | 2039717                           | 102                             |                    | 22346 | 2042587                       | 7                | 3  | 1 (4)                                  | 218                                 |
|           |                          |                   | High | 27399.96             | 2069165                | 26579.16      | 2055485                           | 504                             |                    | 22434 | 2067931                       | 7                | 0  | 1 (4)                                  | 1016                                |
| 400       | 264                      | Downlink & Uplink | Low  | 24450                | 2019999                | 24259.92      | 2016831                           | 0                               | 120                | 22258 | 2017243                       | 2                | 3  | 1 (4)                                  | 14                                  |
|           |                          |                   | Mid  | 25875                | 2043749                | 25538.04      | 2038133                           | 102                             |                    | 22340 | 2040859                       | 7                | 1  | 0 (0)                                  | 206                                 |
|           |                          |                   | High | 27300                | 2067499                | 26384.16      | 2052235                           | 504                             |                    | 22423 | 2064763                       | 0                | 4  | 1 (4)                                  | 1024                                |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

## 4.3.1.2.1.3

Reference test frequencies for NR operating band n259

**Table 4.3.1.2.1.3-1: Test frequencies for NR operating band n259, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  60 kHz**

| <b>CBW [MHz]</b>   | <b>carrier Bandwidth [PRBs]</b> | <b>Range</b>      |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absolute FrequencyPoint A [ARFCN]</b> | <b>offsetTo Carrier [Carrier PRBs]</b> | <b>SS block SCS [kHz]</b> | <b>GSCN</b> | <b>absolute FrequencySSB [ARFCN]</b> | <b><math>k_{\text{SSB}}</math></b> | <b>Offset Carrier CORE SET#0 [RBs]</b> | <b>CORE SET#0 Index (Offset [RBs]) Note 2</b> | <b>offsetToPointA (SIB1) [PRBs] Note 1</b> |
|--|---------------------------------|-------------------|------|-----------------------------|-------------------------------|----------------------|--|--|---------------------------|-------------|--------------------------------------|------------------------------------|--|---|--|
| 50   | 66                              | Downlink & Uplink | Low  | 39525                       | 2271249                       | 39501.24             | 2270853                                  | 0                                      | 120                       | 23140       | 2271259                              | 10                                 | 5                                      | 1 (8)   | 13   |
|  |                                 |                   | Mid  | 41499.96                    | 2304165                       | 41402.76             | 2302545                                  | 102                                    |                           | 23254       | 2304091                              | 10                                 | 6                                      | 0 (0)   | 108  |
|  |                                 |                   | High | 43474.92                    | 2337081                       | 43088.28             | 2330637                                  | 504                                    |                           | 23369       | 2337211                              | 10                                 | 15                                     | 1 (8)   | 527  |
| 100  | 132                             | Downlink & Uplink | Low  | 39550.08                    | 2271667                       | 39502.56             | 2270875                                  | 0                                      | 120                       | 23140       | 2271259                              | 0                                  | 4                                      | 1 (8)   | 12   |
|  |                                 |                   | Mid  | 41499.96                    | 2304165                       | 41379                | 2302149                                  | 102                                    |                           | 23253       | 2303803                              | 10                                 | 7                                      | 1 (8)   | 117  |
|  |                                 |                   | High | 43449.96                    | 2336665                       | 43039.56             | 2329825                                  | 504                                    |                           | 23366       | 2336347                              | 6                                  | 11                                     | 1 (8)   | 523  |
| 200  | 264                             | Downlink & Uplink | Low  | 39600                       | 2272499                       | 39504.96             | 2270915                                  | 0                                      | 120                       | 23140       | 2271259                              | 8                                  | 0                                      | 1 (8)   | 8  |
|  |                                 |                   | Mid  | 41499.96                    | 2304165                       | 41331.48             | 2301357                                  | 102                                    |                           | 23250       | 2302939                              | 10                                 | 1                                      | 1 (8)   | 111  |
|  |                                 |                   | High | 43399.92                    | 2335831                       | 42942                | 2328199                                  | 504                                    |                           | 23360       | 2334619                              | 0                                  | 3                                      | 1 (8)   | 515  |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                                 |                   |      |                             |                               |                      |  |  |                           |             |                                      |                                    |  |   |  |

Table 4.3.1.2.1.3-2: Test frequencies for NR operating band n259, SCS 120kHz and  $\Delta F_{\text{Raster}}$  120 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|------------------|--|--|-------------------------------------|
| 50        | 32                       | Downlink & Uplink | Low  | 39525                | 2271249                | 39501.96      | 2270865                           | 0                               | 120                | 23140 | 2271259                       | 5                | 2                                      | 1 (4)                                  | 12                                  |
|           |                          |                   | Mid  | 41499.96             | 2304165                | 41330.04      | 2301333                           | 102                             |                    | 23254 | 2304091                       | 11               | 2                                      | 0 (0)                                  | 208                                 |
|           |                          |                   | High | 43474.92             | 2337081                | 42726.12      | 2324601                           | 504                             |                    | 23369 | 2337211                       | 5                | 7                                      | 1 (4)                                  | 1030                                |
| 100       | 66                       | Downlink & Uplink | Low  | 39550.08             | 2271667                | 39502.56      | 2270875                           | 0                               | 120                | 23140 | 2271259                       | 0                | 2                                      | 1 (4)                                  | 12                                  |
|           |                          |                   | Mid  | 41499.96             | 2304165                | 41305.56      | 2300925                           | 102                             |                    | 23253 | 2303803                       | 11               | 3                                      | 1 (4)                                  | 218                                 |
|           |                          |                   | High | 43449.96             | 2336665                | 42676.68      | 2323777                           | 504                             |                    | 23366 | 2336347                       | 9                | 5                                      | 1 (4)                                  | 1026                                |
| 200       | 132                      | Downlink & Uplink | Low  | 39600                | 2272499                | 39504.96      | 2270915                           | 0                               | 120                | 23140 | 2271259                       | 4                | 0                                      | 1 (4)                                  | 8                                   |
|           |                          |                   | Mid  | 41499.96             | 2304165                | 41258.04      | 2300133                           | 102                             |                    | 23250 | 2302939                       | 11               | 0                                      | 1 (4)                                  | 212                                 |
|           |                          |                   | High | 43399.92             | 2335831                | 42579.12      | 2322151                           | 504                             |                    | 23360 | 2334619                       | 6                | 1                                      | 1 (4)                                  | 1018                                |
| 400       | 264                      | Downlink & Uplink | Low  | 39700.08             | 2274167                | 39510         | 2270999                           | 0                               | 120                | 23140 | 2271259                       | 10               | 0                                      | 0 (0)                                  | 0                                   |
|           |                          |                   | Mid  | 41499.96             | 2304165                | 41163         | 2298549                           | 102                             |                    | 23245 | 2301499                       | 11               | 6                                      | 1 (4)                                  | 224                                 |
|           |                          |                   | High | 43299.96             | 2334165                | 42384.12      | 2318901                           | 504                             |                    | 23349 | 2331451                       | 11               | 4                                      | 1 (4)                                  | 1024                                |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

## 4.3.1.2.1.4

Reference test frequencies for NR operating band n260

**Table 4.3.1.2.1.4-1: Test frequencies for NR operating band n260, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  60 kHz**

| <b>CBW [MHz]</b>   | <b>carrier Bandwidth [PRBs]</b> | <b>Range</b>      |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absolute FrequencyPoint A [ARFCN]</b> | <b>offsetTo Carrier [Carrier PRBs]</b> | <b>SS block SCS [kHz]</b> | <b>GSCN</b> | <b>absolute FrequencySSB [ARFCN]</b> | <b><math>k_{\text{SSB}}</math></b> | <b>Offset Carrier CORE SET#0 [RBs] Note 2</b> | <b>CORE SET#0 Index (Offset [RBs]) Note 1</b> | <b>offsetToPointA (SIB1) [PRBs] Note 1</b> |
|--|---------------------------------|-------------------|------|-----------------------------|-------------------------------|----------------------|--|--|---------------------------|-------------|--------------------------------------|------------------------------------|---|---|--|
| 50   | 66                              | Downlink & Uplink | Low  | 37025.04                    | 2229583                       | 37001.28             | 2229187                                  | 0                                      | 120                       | 22995       | 2229499                              | 0                                  | 6   | 0 (0)   | 6  |
|  |                                 |                   | Mid  | 38499.96                    | 2254165                       | 38402.76             | 2252545                                  | 102                                    |                           | 23081       | 2254267                              | 6                                  | 13  | 1 (8)   | 123  |
|  |                                 |                   | High | 39975                       | 2278749                       | 39588.36             | 2272305                                  | 504                                    |                           | 23166       | 2278747                              | 10                                 | 4   | 1 (8)   | 516  |
| 100  | 132                             | Downlink & Uplink | Low  | 37050                       | 2229999                       | 37002.48             | 2229207                                  | 0                                      | 120                       | 22995       | 2229499                              | 4                                  | 4   | 0 (0)   | 4  |
|  |                                 |                   | Mid  | 38499.96                    | 2254165                       | 38379                | 2252149                                  | 102                                    |                           | 23079       | 2253691                              | 6                                  | 6   | 0 (0)   | 108  |
|  |                                 |                   | High | 39949.92                    | 2278331                       | 39539.52             | 2271491                                  | 504                                    |                           | 23163       | 2277883                              | 8                                  | 0   | 1 (8)   | 512  |
| 200  | 264                             | Downlink & Uplink | Low  | 37100.04                    | 2230833                       | 37005                | 2229249                                  | 0                                      | 120                       | 22995       | 2229499                              | 10                                 | 0   | 0 (0)   | 0  |
|  |                                 |                   | Mid  | 38499.96                    | 2254165                       | 38331.48             | 2251357                                  | 102                                    |                           | 23076       | 2252827                              | 6                                  | 0   | 0 (0)   | 102  |
|  |                                 |                   | High | 39900                       | 2277499                       | 39442.08             | 2269867                                  | 504                                    |                           | 23157       | 2276155                              | 0                                  | 0   | 0 (0)   | 504  |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                                 |                   |      |                             |                               |                      |  |  |                           |             |                                      |                                    |   |   |  |

Table 4.3.1.2.1.4-2: Test frequencies for NR operating band n260, SCS 120kHz and  $\Delta F_{\text{Raster}}$  120 kHz

| CBW [MHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 Index [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|-----------|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|------------------|--|--|-------------------------------------|
| 50        | 32                       | Downlink & Uplink | Low  | 37025.04             | 2229583                | 37002         | 2229199                           | 0                               | 120                | 22995 | 2229499                       | 6                | 2  | 0 (0)                                  | 4                                   |
|           |                          |                   | Mid  | 38499.96             | 2254165                | 38330.04      | 2251333                           | 102                             |                    | 23081 | 2254267                       | 3                | 6  | 1 (4)                                  | 224                                 |
|           |                          |                   | High | 39975                | 2278749                | 39226.2       | 2266269                           | 504                             |                    | 23166 | 2278747                       | 11               | 1  | 1 (4)                                  | 1018                                |
| 100       | 66                       | Downlink & Uplink | Low  | 37050                | 2229999                | 37002.48      | 2229207                           | 0                               | 120                | 22995 | 2229499                       | 2                | 2  | 0 (0)                                  | 4                                   |
|           |                          |                   | Mid  | 38499.96             | 2254165                | 38305.56      | 2250925                           | 102                             |                    | 23079 | 2253691                       | 3                | 3  | 0 (0)                                  | 210                                 |
|           |                          |                   | High | 39949.92             | 2278331                | 39176.64      | 2265443                           | 504                             |                    | 23163 | 2277883                       | 4                | 0  | 1 (4)                                  | 1016                                |
| 200       | 132                      | Downlink & Uplink | Low  | 37100.04             | 2230833                | 37005         | 2229249                           | 0                               | 120                | 22995 | 2229499                       | 5                | 0  | 0 (0)                                  | 0                                   |
|           |                          |                   | Mid  | 38499.96             | 2254165                | 38258.04      | 2250133                           | 102                             |                    | 23076 | 2252827                       | 3                | 0  | 0 (0)                                  | 204                                 |
|           |                          |                   | High | 39900                | 2277499                | 39079.2       | 2263819                           | 504                             |                    | 23157 | 2276155                       | 0                | 0  | 0 (0)                                  | 1008                                |
| 400       | 264                      | Downlink & Uplink | Low  | 37200                | 2232499                | 37009.92      | 2229331                           | 0                               | 120                | 22996 | 2229787                       | 0                | 5  | 1 (4)                                  | 18                                  |
|           |                          |                   | Mid  | 38499.96             | 2254165                | 38163         | 2248549                           | 102                             |                    | 23071 | 2251387                       | 3                | 2  | 1 (4)                                  | 216                                 |
|           |                          |                   | High | 39799.92             | 2275831                | 38884.08      | 2260567                           | 504                             |                    | 23146 | 2272987                       | 6                | 3  | 0 (0)                                  | 1014                                |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

## 4.3.1.2.1.5

Reference test frequencies for NR operating band n261

**Table 4.3.1.2.1.5-1: Test frequencies for NR operating band n261, SCS 60 kHz and  $\Delta F_{\text{Raster}}$  60 kHz**

| <b>CBW [MHz]</b>   | <b>carrier Bandwidth [PRBs]</b> | <b>Range</b>      |      | <b>Carrier centre [MHz]</b> | <b>Carrier centre [ARFCN]</b> | <b>point A [MHz]</b> | <b>absolute FrequencyPoint A [ARFCN]</b> | <b>offsetTo Carrier [Carrier PRBs]</b> | <b>SS block SCS [kHz]</b> | <b>GSCN</b> | <b>absolute FrequencySSB [ARFCN]</b> | <b><math>k_{\text{SSB}}</math></b> | <b>Offset Carrier CORE SET#0 Index [RBs] Note 2</b> | <b>CORE SET#0 Index (Offset [RBs]) Note 1</b> | <b>offsetToPointA (SIB1) [PRBs] Note 1</b> |
|--|---------------------------------|-------------------|------|-----------------------------|-------------------------------|----------------------|--|--|---------------------------|-------------|--------------------------------------|------------------------------------|---|---|--|
| 50   | 66                              | Downlink & Uplink | Low  | 27525                       | 2071249                       | 27501.24             | 2070853                                  | 0                                      | 120                       | 22446       | 2071387                              | 6                                  | 16  | 1 (8)   | 24   |
|  |                                 |                   | Mid  | 27924.96                    | 2077915                       | 27827.76             | 2076295                                  | 102                                    |                           | 22469       | 2078011                              | 0                                  | 13  | 1 (8)   | 123  |
|  |                                 |                   | High | 28324.92                    | 2084581                       | 27938.28             | 2078137                                  | 504                                    |                           | 22492       | 2084635                              | 6                                  | 9   | 1 (8)   | 521  |
| 100  | 132                             | Downlink & Uplink | Low  | 27550.08                    | 2071667                       | 27502.56             | 2070875                                  | 0                                      | 120                       | 22446       | 2071387                              | 8                                  | 14  | 1 (8)   | 22   |
|  |                                 |                   | Mid  | 27924.96                    | 2077915                       | 27804                | 2075899                                  | 102                                    |                           | 22467       | 2077435                              | 0                                  | 6   | 0 (0)   | 108  |
|  |                                 |                   | High | 28299.96                    | 2084165                       | 27889.56             | 2077325                                  | 504                                    |                           | 22489       | 2083771                              | 2                                  | 5   | 1 (8)   | 517  |
| 200  | 264                             | Downlink & Uplink | Low  | 27600                       | 2072499                       | 27504.96             | 2070915                                  | 0                                      | 120                       | 22446       | 2071387                              | 4                                  | 11  | 1 (8)   | 19   |
|  |                                 |                   | Mid  | 27924.96                    | 2077915                       | 27756.48             | 2075107                                  | 102                                    |                           | 22464       | 2076571                              | 0                                  | 0   | 0 (0)   | 102  |
|  |                                 |                   | High | 28249.92                    | 2083331                       | 27792                | 2075699                                  | 504                                    |                           | 22483       | 2082043                              | 8                                  | 4   | 0 (0)   | 508  |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                                 |                   |      |                             |                               |                      |  |  |                           |             |                                      |                                    |   |   |  |

**Table 4.3.1.2.1.5-2: Test frequencies for NR operating band n261, SCS 120kHz and  $\Delta F_{\text{Raster}}$  120 kHz**

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 Index [RBs] Note 2 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |
|---|--------------------------|-------------------|------|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|------------------|--|--|-------------------------------------|
| 50  | 32                       | Downlink & Uplink | Low  | 27525                | 2071249                | 27501.96      | 2070865                           | 0                               | 120                | 22446 | 2071387                       | 9                | 7  | 1 (4)                                  | 22                                  |
|   |                          |                   | Mid  | 27924.96             | 2077915                | 27755.04      | 2075083                           | 102                             |                    | 22469 | 2078011                       | 0                | 6  | 1 (4)                                  | 224                                 |
|   |                          |                   | High | 28324.92             | 2084581                | 27576.12      | 2072101                           | 504                             |                    | 22492 | 2084635                       | 3                | 4  | 1 (4)                                  | 1024                                |
| 100   | 66                       | Downlink & Uplink | Low  | 27550.08             | 2071667                | 27502.56      | 2070875                           | 0                               | 120                | 22446 | 2071387                       | 4                | 7  | 1 (4)                                  | 22                                  |
|   |                          |                   | Mid  | 27924.96             | 2077915                | 27730.56      | 2074675                           | 102                             |                    | 22467 | 2077435                       | 0                | 3  | 0 (0)                                  | 210                                 |
|   |                          |                   | High | 28299.96             | 2084165                | 27526.68      | 2071277                           | 504                             |                    | 22489 | 2083771                       | 7                | 2  | 1 (4)                                  | 1020                                |
| 200   | 132                      | Downlink & Uplink | Low  | 27600                | 2072499                | 27504.96      | 2070915                           | 0                               | 120                | 22446 | 2071387                       | 8                | 5  | 1 (4)                                  | 18                                  |
|   |                          |                   | Mid  | 27924.96             | 2077915                | 27683.04      | 2073883                           | 102                             |                    | 22464 | 2076571                       | 0                | 0  | 0 (0)                                  | 204                                 |
|   |                          |                   | High | 28249.92             | 2083331                | 27429.12      | 2069651                           | 504                             |                    | 22483 | 2082043                       | 4                | 2  | 0 (0)                                  | 1012                                |
| 400   | 264                      | Downlink & Uplink | Low  | 27700.08             | 2074167                | 27510         | 2070999                           | 0                               | 120                | 22446 | 2071387                       | 2                | 2  | 1 (4)                                  | 12                                  |
|   |                          |                   | Mid  | 27924.96             | 2077915                | 27588         | 2072299                           | 102                             |                    | 22459 | 2075131                       | 0                | 2  | 1 (4)                                  | 216                                 |
|   |                          |                   | High | 28149.96             | 2081665                | 27234.12      | 2066401                           | 504                             |                    | 22472 | 2078875                       | 9                | 1  | 1 (4)                                  | 1018                                |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                          |                   |      |                      |                        |               |                                   |                                 |                    |       |                               |                  |  |  |                                     |

#### 4.3.1.2.2 NR inter-band CA configurations in FR2

#### 4.3.1.2.3 NR intra-band contiguous CA configurations in FR2

##### 4.3.1.2.3.1 NR Intra-band contiguous CA configurations for CA\_n257

###### 4.3.1.2.3.1.1 CA\_n257B

Editor's note: CBW=400 MHz for NR band n257 is only supported by for SCS 120kHz. Test frequencies for CA\_n257B are currently limited to SCS 120kHz for all CCs.  
Test frequencies for mixed numerologies between CCs is FFS.

Table 4.3.1.2.3.1.1-1: NR Intra-Band contiguous CA configuration CA\_n257B, SCS=120 kHz,  $\Delta F_{\text{Raster}} = 120 \text{ kHz}$ 

| CBW combination                             | CC Note 2                                   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range                                       | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | Offset ToPoint A (SIB1) [PRBs] Note 4 | offsetToPoint A (SIB1) [PRBs] Note 4 |  |  |  |  |  |
|---|---|-----------|-----------|--------------------------|---|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|---------------------------------------|--|---------------------------------------|--------------------------------------|--|--|--|--|--|
| 50+400                                      | CC1   | 50        | 120       | 32                       | Downlink & Uplink                           | Low                         | 26525.04               | 2054583       | 26502                             | 2054199                        | 0                  | 120   | 22388                         | 2054683          | 2                                     | 6                                      | 1 (4)                                 | 20                                   |  |  |  |  |  |
|   |   |           |           |                          |   | Mid                         | 27800.04               | 2075833       | 27630.12                          | 2073001                        | 102                |       | 22461                         | 2075707          | 9                                     | 0                                      | 0 (0)                                 | 204                                  |  |  |  |  |  |
|   |   |           |           |                          |   | High                        | 29082.96               | 2097215       | 28334.16                          | 2084735                        | 504                |       | 22536                         | 2097307          | 10                                    | 5                                      | 1 (4)                                 | 1026                                 |  |  |  |  |  |
|   | Channel spacing CC1-CC2=216.96 MHz (Note 1) |           |           |                          |   |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |                                       |                                      |  |  |  |  |  |
|   | CC2   | 400       | 120       | 264                      | Downlink & Uplink                           | Low                         | 26742                  | 2058199       | 26551.92                          | 2055031                        | 0                  | 120   | 22391                         | 2055547          | 6                                     | 7                                      | 1 (4)                                 | 22                                   |  |  |  |  |  |
|   |   |           |           |                          |   | Mid                         | 28017                  | 2079449       | 27680.04                          | 2073833                        | 102                |       | 22464                         | 2076571          | 1                                     | 2                                      | 0 (0)                                 | 208                                  |  |  |  |  |  |
|   |   |           |           |                          |   | High                        | 29299.92               | 2100831       | 28384.08                          | 2085567                        | 504                |       | 22539                         | 2098171          | 2                                     | 7                                      | 1 (4)                                 | 1030                                 |  |  |  |  |  |
|   | CC1   | 100       | 120       | 66                       | Downlink & Uplink                           | Low                         | 26550                  | 2054999       | 26502.48                          | 2054207                        | 0                  | 120   | 22388                         | 2054683          | 10                                    | 5                                      | 1 (4)                                 | 18                                   |  |  |  |  |  |
|   |   |           |           |                          |   | Mid                         | 27800.04               | 2075833       | 27605.64                          | 2072593                        | 102                |       | 22460                         | 2075419          | 9                                     | 1                                      | 1 (4)                                 | 214                                  |  |  |  |  |  |
|   |   |           |           |                          |   | High                        | 29057.4                | 2096789       | 28284.12                          | 2083901                        | 504                |       | 22533                         | 2096443          | 7                                     | 4                                      | 1 (4)                                 | 1024                                 |  |  |  |  |  |
| Channel spacing CC1-CC2=242.52 MHz (Note 1) |   |           |           |                          |   |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |                                       |                                      |  |  |  |  |  |
| 100+400                                     | CC2   | 400       | 120       | 264                      | Downlink & Uplink                           | Low                         | 26792.52               | 2059041       | 26602.44                          | 2055873                        | 0                  | 120   | 22393                         | 2056123          | 5                                     | 0                                      | 0 (0)                                 | 0                                    |  |  |  |  |  |
|   |   |           |           |                          |   | Mid                         | 28042.56               | 2079875       | 27705.6                           | 2074259                        | 102                |       | 22466                         | 2077147          | 4                                     | 4                                      | 1 (4)                                 | 220                                  |  |  |  |  |  |
|   |   |           |           |                          |   | High                        | 29299.92               | 2100831       | 28384.08                          | 2085567                        | 504                |       | 22539                         | 2098171          | 2                                     | 7                                      | 1 (4)                                 | 1030                                 |  |  |  |  |  |
| 200+400                                     | CC1   | 200       | 120       | 132                      | Downlink & Uplink                           | Low                         | 26600.04               | 2055833       | 26505                             | 2054249                        | 0                  | 120   | 22388                         | 2054683          | 1                                     | 4                                      | 1 (4)                                 | 16                                   |  |  |  |  |  |
|   |   |           |           |                          |   | Mid                         | 27800.04               | 2075833       | 27558.12                          | 2071801                        | 102                |       | 22457                         | 2074555          | 9                                     | 2                                      | 0 (0)                                 | 208                                  |  |  |  |  |  |
|   |   |           |           |                          |   | High                        | 29004.96               | 2095915       | 28184.16                          | 2082235                        | 504                |       | 22527                         | 2094715          | 0                                     | 2                                      | 1 (4)                                 | 1020                                 |  |  |  |  |  |
|   | Channel spacing CC1-CC2=294.96 MHz (Note 1) |           |           |                          |   |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |                                       |                                      |  |  |  |  |  |
|   | CC2   | 400       | 120       | 264                      | Downlink & Uplink                           | Low                         | 26895                  | 2060749       | 26704.92                          | 2057581                        | 0                  | 120   | 22399                         | 2057851          | 3                                     | 1                                      | 0 (0)                                 | 2                                    |  |  |  |  |  |
| 400+400                                     |   |           |           |                          |   | Mid                         | 28095                  | 2080749       | 27758.04                          | 2075133                        | 102                |       | 22469                         | 2078011          | 11                                    | 3                                      | 1 (4)                                 | 218                                  |  |  |  |  |  |
|   |   |           |           |                          |   | High                        | 29299.92               | 2100831       | 28384.08                          | 2085567                        | 504                |       | 22539                         | 2098171          | 2                                     | 7                                      | 1 (4)                                 | 1030                                 |  |  |  |  |  |
| CC1   | 400   | 120       | 264       | Downlink & Uplink        | Low   | 26700                       | 2057499                | 26509.92      | 2054331                           | 0                              | 120                | 22388 | 2054683                       | 8                | 0                                     | 1 (4)                                  | 8                                     |                                      |  |  |  |  |  |
|   |   |           |           |                          | Mid   | 27800.04                    | 2075833                | 27463.08      | 2070217                           | 102                            |                    | 22452 | 2073115                       | 9                | 4                                     | 1 (4)                                  | 220                                   |                                      |  |  |  |  |  |
|   |   |           |           |                          | High  | 28899.96                    | 2094165                | 27984.12      | 2078901                           | 504                            |                    | 22515 | 2091259                       | 11               | 0                                     | 0 (0)                                  | 1008                                  |                                      |  |  |  |  |  |
|   |   |           |           |                          | Channel spacing CC1-CC2=399.96 MHz (Note 1) |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |                                       |                                      |  |  |  |  |  |
| CC2   | 400   | 120       | 264       | Downlink & Uplink        | Low   | 27099.96                    | 2064165                | 26909.88      | 2060997                           | 0                              | 120                | 22411 | 2061307                       | 11               | 2                                     | 0 (0)                                  | 4                                     |                                      |  |  |  |  |  |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4.A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter

$\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

#### 4.3.1.2.3.1.2 CA\_n257C

Editor's note: CBW=400 MHz for NR band n257 is only supported by for SCS 120kHz. Test frequencies for CA\_n257C are currently limited to SCS 120kHz for all CCs.

Test frequencies for mixed numerologies between CCs is FFS.

Table 4.3.1.2.3.1.2-1: NR Intra-Band contiguous CA configuration CA\_n257C, SCS=120 kHz,  $\Delta F_{\text{Raster}} = 120 \text{ kHz}$ 

| CBW combination | CC Note 2                                   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | COR ESET #0 Index (Offset [RBs]) Note 4 | offsetToPoint A (SIB1) [PRBs] Note 4 |
|-----------------|---|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|------------------|--|--|---|--------------------------------------|
| 50+400<br>+400  | CC1   | 50        | 120       | 32                       | Downlink & Uplink | Low                         | 26525.04               | 2054583       | 26502                             | 2054199                        | 0                  | 120  | 22388                         | 2054683          | 2                                      | 6                                      | 1 (4)                                   | 20                                   |
|                 |   |           |           |                          |                   | Mid                         | 27600                  | 2072499       | 27430.08                          | 2069667                        | 102                |      | 22450                         | 2072539          | 8                                      | 3                                      | 1 (4)                                   | 218                                  |
|                 |   |           |           |                          |                   | High                        | 28683                  | 2090549       | 27934.2                           | 2078069                        | 504                |      | 22513                         | 2090683          | 7                                      | 7                                      | 1 (4)                                   | 1030                                 |
|                 | Channel spacing CC1-CC2=216.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                                      |
|                 | CC2   | 400       | 120       | 264                      | Downlink & Uplink | Low                         | 26742                  | 2058199       | 26551.92                          | 2055031                        | 0                  | 120  | 22391                         | 2055547          | 6                                      | 7                                      | 1 (4)                                   | 22                                   |
|                 |   |           |           |                          |                   | Mid                         | 27816.96               | 2076115       | 27480                             | 2070499                        | 102                |      | 22453                         | 2073403          | 0                                      | 5                                      | 1 (4)                                   | 222                                  |
|                 |   |           |           |                          |                   | High                        | 28899.96               | 2094165       | 27984.12                          | 2078901                        | 504                |      | 22515                         | 2091259          | 11                                     | 0                                      | 0 (0)                                   | 1008                                 |
|                 | Channel spacing CC2-CC3=399.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                                      |
|                 | CC3   | 400       | 120       | 264                      | Downlink & Uplink | Low                         | 27141.96               | 2064865       | 26951.88                          | 2061697                        | 0                  | 120  | 22414                         | 2062171          | 9                                      | 5                                      | 1 (4)                                   | 18                                   |
|                 |   |           |           |                          |                   | Mid                         | 28216.92               | 2082781       | 27879.96                          | 2077165                        | 102                |      | 22476                         | 2080027          | 3                                      | 3                                      | 1 (4)                                   | 218                                  |
|                 |   |           |           |                          |                   | High                        | 29299.92               | 2100831       | 28384.08                          | 2085567                        | 504                |      | 22539                         | 2098171          | 2                                      | 7                                      | 1 (4)                                   | 1030                                 |
| 100+400<br>+400 | CC1   | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 26550                  | 2054999       | 26502.48                          | 2054207                        | 0                  | 120  | 22388                         | 2054683          | 10                                     | 5                                      | 1 (4)                                   | 18                                   |
|                 |   |           |           |                          |                   | Mid                         | 27600                  | 2072499       | 27405.6                           | 2069259                        | 102                |      | 22448                         | 2071963          | 8                                      | 0                                      | 0 (0)                                   | 204                                  |
|                 |   |           |           |                          |                   | High                        | 28657.44               | 2090123       | 27884.16                          | 2077235                        | 504                |      | 22510                         | 2089819          | 4                                      | 6                                      | 1 (4)                                   | 1028                                 |
|                 | Channel spacing CC1-CC2=242.52 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                                      |
|                 | CC2   | 400       | 120       | 264                      | Downlink & Uplink | Low                         | 26792.52               | 2059041       | 26602.44                          | 2055873                        | 0                  | 120  | 22393                         | 2056123          | 5                                      | 0                                      | 0 (0)                                   | 0                                    |
|                 |   |           |           |                          |                   | Mid                         | 27842.52               | 2076541       | 27505.56                          | 2070925                        | 102                |      | 22454                         | 2073691          | 3                                      | 3                                      | 0 (0)                                   | 210                                  |
|                 |   |           |           |                          |                   | High                        | 28899.96               | 2094165       | 27984.12                          | 2078901                        | 504                |      | 22515                         | 2091259          | 11                                     | 0                                      | 0 (0)                                   | 1008                                 |
|                 | Channel spacing CC2-CC3=399.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                                      |
|                 | CC3   | 400       | 120       | 264                      | Downlink & Uplink | Low                         | 27192.48               | 2065707       | 27002.4                           | 2062539                        | 0                  | 120  | 22417                         | 2063035          | 8                                      | 6                                      | 1 (4)                                   | 20                                   |
|                 |   |           |           |                          |                   | Mid                         | 28242.48               | 2083207       | 27905.52                          | 2077591                        | 102                |      | 22477                         | 2080315          | 6                                      | 1                                      | 0 (0)                                   | 206                                  |
|                 |   |           |           |                          |                   | High                        | 29299.92               | 2100831       | 28384.08                          | 2085567                        | 504                |      | 22539                         | 2098171          | 2                                      | 7                                      | 1 (4)                                   | 1030                                 |
| 200+400<br>+400 | CC1   | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 26600.04               | 2055833       | 26505                             | 2054249                        | 0                  | 120  | 22388                         | 2054683          | 1                                      | 4                                      | 1 (4)                                   | 16                                   |
|                 |   |           |           |                          |                   | Mid                         | 27600                  | 2072499       | 27358.08                          | 2068467                        | 102                |      | 22446                         | 2071387          | 8                                      | 5                                      | 1 (4)                                   | 222                                  |
|                 |   |           |           |                          |                   | High                        | 28605                  | 2089249       | 27784.2                           | 2075569                        | 504                |      | 22504                         | 2088091          | 9                                      | 3                                      | 1 (4)                                   | 1022                                 |
|                 | Channel spacing CC1-CC2=294.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                                      |
|                 | CC2   | 400       | 120       | 264                      | Downlink & Uplink | Low                         | 26895                  | 2060749       | 26704.92                          | 2057581                        | 0                  | 120  | 22399                         | 2057851          | 3                                      | 1                                      | 0 (0)                                   | 2                                    |
|                 |   |           |           |                          |                   | Mid                         | 27894.96               | 2077415       | 27558                             | 2071799                        | 102                |      | 22457                         | 2074555          | 10                                     | 2                                      | 0 (0)                                   | 208                                  |
|                 |   |           |           |                          |                   | High                        | 28899.96               | 2094165       | 27984.12                          | 2078901                        | 504                |      | 22515                         | 2091259          | 11                                     | 0                                      | 0 (0)                                   | 1008                                 |
|                 | CC3   | 400       | 120       | 264                      | Downlink          | Low                         | 27294.96               | 2067415       | 27104.88                          | 2064247                        | 0                  | 120  | 22423                         | 2064763          | 6                                      | 7                                      | 1 (4)                                   | 22                                   |
|                 |   |           |           |                          |                   | Mid                         | 28294.96               | 2100831       | 28104.88                          | 2085567                        | 504                |      | 22539                         | 2098171          | 2                                      | 7                                      | 1 (4)                                   | 1030                                 |

|   |     |     |     |     |                         |          |          |          |          |         |     |  |       |         |         |    |       |       |   |
|---|-----|-----|-----|-----|-------------------------|----------|----------|----------|----------|---------|-----|--|-------|---------|---------|----|-------|-------|---|
|   |     |     |     |     | &<br>Uplink             | Mid      | 28294.92 | 2084081  | 27957.96 | 2078465 | 102 |  | 22480 | 2081179 | 1       | 1  | 0 (0) | 206   |   |
|   |     |     |     |     | High                    | 29299.92 | 2100831  | 28384.08 | 2085567  |         | 504 |  | 22539 | 2098171 | 2       | 7  | 1 (4) | 1030  |   |
| 400+400<br>+400                             | CC1 | 400 | 120 | 264 | Downlink<br>&<br>Uplink | Low      | 26700    | 2057499  | 26509.92 | 2054331 | 0   |  | 120   | 22388   | 2054683 | 8  | 0     | 1 (4) | 8 |
|   |     |     |     |     | Mid                     | 27600    | 2072499  | 27263.04 | 2066883  |         | 102 |  | 22440 | 2069659 | 8       | 3  | 0 (0) | 210   |   |
|   |     |     |     |     | High                    | 28500    | 2087499  | 27584.16 | 2072235  |         | 504 |  | 22492 | 2084635 | 8       | 2  | 0 (0) | 1012  |   |
| Channel spacing CC1-CC2=399.96 MHz (Note 1) |     |     |     |     |                         |          |          |          |          |         |     |  |       |         |         |    |       |       |   |
|   | CC2 | 400 | 120 | 264 | Downlink<br>&<br>Uplink | Low      | 27099.96 | 2064165  | 26909.88 | 2060997 | 0   |  | 120   | 22411   | 2061307 | 11 | 2     | 0 (0) | 4 |
|   |     |     |     |     | Mid                     | 27999.96 | 2079165  | 27663    | 2073549  |         | 102 |  | 22463 | 2076283 | 11      | 1  | 0 (0) | 206   |   |
|   |     |     |     |     | High                    | 28899.96 | 2094165  | 27984.12 | 2078901  |         | 504 |  | 22515 | 2091259 | 11      | 0  | 0 (0) | 1008  |   |
| Channel spacing CC2-CC3=399.96 MHz (Note 1) |     |     |     |     |                         |          |          |          |          |         |     |  |       |         |         |    |       |       |   |
|   | CC3 | 400 | 120 | 264 | Downlink<br>&<br>Uplink | Low      | 27499.92 | 2070831  | 27309.84 | 2067663 | 0   |  | 120   | 22434   | 2067931 | 2  | 1     | 0 (0) | 2 |
|   |     |     |     |     | Mid                     | 28399.92 | 2085831  | 28062.96 | 2080215  |         | 102 |  | 22486 | 2082907 | 2       | 0  | 0 (0) | 204   |   |
|   |     |     |     |     | High                    | 29299.92 | 2100831  | 28384.08 | 2085567  |         | 504 |  | 22539 | 2098171 | 2       | 7  | 1 (4) | 1030  |   |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the CC1-CC2 and CC2-CC3 channel bandwidth combinations.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.1.3

## CA\_n257D

Table 4.3.1.2.3.1.3-1: NR Intra-Band contiguous CA configuration CA\_n257D, SCS=60 kHz,  $\Delta F_{\text{Raster}} = 60 \text{ kHz}$ 

| CBW combination | CC Note 2                                   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | COR ESET #0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |
|-----------------|---|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|------------------|--|--|---|-------------------------------------|
| 50+200          | CC1   | 50        | 60        | 66                       | Downlink & Uplink | Low                         | 26525.04               | 2054583       | 26501.28                          | 2054187                        | 0                  | 120  | 22388                         | 2054683          | 4                                      | 13                                     | 1 (8)                                   | 21                                  |
|                 |   |           |           |                          |                   | Mid                         | 27900                  | 2077499       | 27802.8                           | 2075879                        | 102                |      | 22467                         | 2077435          | 8                                      | 7                                      | 0 (0)                                   | 109                                 |
|                 |   |           |           |                          |                   | High                        | 29278.8                | 2100479       | 28892.16                          | 2094035                        | 504                |      | 22547                         | 2100475          | 8                                      | 4                                      | 1 (8)                                   | 516                                 |
|                 | Channel spacing CC1-CC2=121.2 MHz (Note 1)  |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                                     |
|                 | CC2   | 200       | 60        | 264                      | Downlink & Uplink | Low                         | 26646.24               | 2056603       | 26551.2                           | 2055019                        | 0                  | 120  | 22390                         | 2055259          | 0                                      | 0                                      | 0 (0)                                   | 0                                   |
|                 |   |           |           |                          |                   | Mid                         | 28021.2                | 2079519       | 27852.72                          | 2076711                        | 102                |      | 22470                         | 2078299          | 4                                      | 2                                      | 1 (8)                                   | 112                                 |
|                 |   |           |           |                          |                   | High                        | 29400                  | 2102499       | 28942.08                          | 2094867                        | 504                |      | 22550                         | 2101339          | 4                                      | 7                                      | 1 (8)                                   | 519                                 |
| 100+200         | CC1   | 100       | 60        | 132                      | Downlink & Uplink | Low                         | 26550                  | 2054999       | 26502.48                          | 2054207                        | 0                  | 120  | 22388                         | 2054683          | 8                                      | 11                                     | 1 (8)                                   | 19                                  |
|                 |   |           |           |                          |                   | Mid                         | 27900                  | 2077499       | 27779.04                          | 2075483                        | 102                |      | 22466                         | 2077147          | 8                                      | 8                                      | 1 (8)                                   | 118                                 |
|                 |   |           |           |                          |                   | High                        | 29252.52               | 2100041       | 28842.12                          | 2093201                        | 504                |      | 22544                         | 2099611          | 2                                      | 2                                      | 1 (8)                                   | 514                                 |
|                 | Channel spacing CC1-CC2=147.48 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                                     |
|                 | CC2   | 200       | 60        | 264                      | Downlink & Uplink | Low                         | 26697.48               | 2057457       | 26602.44                          | 2055873                        | 0                  | 120  | 22393                         | 2056123          | 10                                     | 0                                      | 0 (0)                                   | 0                                   |
|                 |   |           |           |                          |                   | Mid                         | 28047.48               | 2079957       | 27879                             | 2077149                        | 102                |      | 22472                         | 2078875          | 10                                     | 13                                     | 1 (8)                                   | 123                                 |
|                 |   |           |           |                          |                   | High                        | 29400                  | 2102499       | 28942.08                          | 2094867                        | 504                |      | 22550                         | 2101339          | 4                                      | 7                                      | 1 (8)                                   | 519                                 |
| 200+200         | CC1   | 200       | 60        | 264                      | Downlink & Uplink | Low                         | 26600.04               | 2055833       | 26505                             | 2054249                        | 0                  | 120  | 22388                         | 2054683          | 2                                      | 8                                      | 1 (8)                                   | 16                                  |
|                 |   |           |           |                          |                   | Mid                         | 27900                  | 2077499       | 27731.52                          | 2074691                        | 102                |      | 22463                         | 2076283          | 8                                      | 2                                      | 1 (8)                                   | 112                                 |
|                 |   |           |           |                          |                   | High                        | 29200.08               | 2099167       | 28742.16                          | 2091535                        | 504                |      | 22538                         | 2097883          | 0                                      | 5                                      | 0 (0)                                   | 509                                 |
|                 | Channel spacing CC1-CC2=199.92 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                                     |
|                 | CC2   | 200       | 60        | 264                      | Downlink & Uplink | Low                         | 26799.96               | 2059165       | 26704.92                          | 2057581                        | 0                  | 120  | 22399                         | 2057851          | 6                                      | 2                                      | 0 (0)                                   | 2                                   |
|                 |   |           |           |                          |                   | Mid                         | 28099.92               | 2080831       | 27931.44                          | 2078023                        | 102                |      | 22475                         | 2079739          | 0                                      | 13                                     | 1 (8)                                   | 123                                 |
|                 |   |           |           |                          |                   | High                        | 29400                  | 2102499       | 28942.08                          | 2094867                        | 504                |      | 22550                         | 2101339          | 4                                      | 7                                      | 1 (8)                                   | 519                                 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4.A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.1.3-2: NR Intra-Band contiguous CA configuration CA\_n257D, SCS=120 kHz,  $\Delta F_{\text{Raster}} = 120 \text{ kHz}$ 

| CBW combination | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 Index (Offset [RBs]) Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |      |
|-----------------|-----------|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|------------------|--|---------------------------------------|-------------------------------------|------|
| 50+200          | CC1       | 50        | 120       | 32                       | Downlink & Uplink | Low                         | 26525.04               | 2054583       | 26502                             | 2054199                        | 0                  | 120  | 22388                         | 2054683          | 2  | 6                                     | 1 (4)                               | 20   |
|                 |           |           |           |                          |                   | Mid                         | 27900                  | 2077499       | 27730.08                          | 2074667                        | 102                |      | 22467                         | 2077435          | 4  | 3                                     | 0 (0)                               | 210  |
|                 |           |           |           |                          |                   | High                        | 29278.08               | 2100467       | 28529.28                          | 2087987                        | 504                |      | 22547                         | 2100475          | 4  | 2                                     | 1 (4)                               | 1020 |
|                 | CC2       | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 26646.96               | 2056615       | 26551.92                          | 2055031                        | 0                  | 120  | 22391                         | 2055547          | 6  | 7                                     | 1 (4)                               | 22   |
|                 |           |           |           |                          |                   | Mid                         | 28021.92               | 2079531       | 27780                             | 2075499                        | 102                |      | 22470                         | 2078299          | 8  | 0                                     | 1 (4)                               | 212  |
|                 |           |           |           |                          |                   | High                        | 29400                  | 2102499       | 28579.2                           | 2088819                        | 504                |      | 22550                         | 2101339          | 8  | 3                                     | 1 (4)                               | 1022 |
|                 | CC1       | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 26550                  | 2054999       | 26502.48                          | 2054207                        | 0                  | 120  | 22388                         | 2054683          | 10   | 5                                     | 1 (4)                               | 18   |
|                 |           |           |           |                          |                   | Mid                         | 27900                  | 2077499       | 27705.6                           | 2074259                        | 102                |      | 22466                         | 2077147          | 4  | 4                                     | 1 (4)                               | 220  |
|                 |           |           |           |                          |                   | High                        | 29252.52               | 2100041       | 28479.24                          | 2087153                        | 504                |      | 22544                         | 2099611          | 1  | 1                                     | 1 (4)                               | 1018 |
| 100+200         | CC2       | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 26697.48               | 2057457       | 26602.44                          | 2055873                        | 0                  | 120  | 22393                         | 2056123          | 5  | 0                                     | 0 (0)                               | 0    |
|                 |           |           |           |                          |                   | Mid                         | 28047.48               | 2079957       | 27805.56                          | 2075925                        | 102                |      | 22472                         | 2078875          | 11   | 6                                     | 1 (4)                               | 224  |
|                 |           |           |           |                          |                   | High                        | 29400                  | 2102499       | 28579.2                           | 2088819                        | 504                |      | 22550                         | 2101339          | 8  | 3                                     | 1 (4)                               | 1022 |
|                 | CC1       | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 26600.04               | 2055833       | 26505                             | 2054249                        | 0                  | 120  | 22388                         | 2054683          | 1  | 4                                     | 1 (4)                               | 16   |
|                 |           |           |           |                          |                   | Mid                         | 27900                  | 2077499       | 27658.08                          | 2073467                        | 102                |      | 22463                         | 2076283          | 4  | 1                                     | 1 (4)                               | 214  |
|                 |           |           |           |                          |                   | High                        | 29200.08               | 2099167       | 28379.28                          | 2085487                        | 504                |      | 22538                         | 2097883          | 6  | 2                                     | 0 (0)                               | 1012 |
|                 | CC2       | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 26799.96               | 2059165       | 26704.92                          | 2057581                        | 0                  | 120  | 22399                         | 2057851          | 3  | 1                                     | 0 (0)                               | 2    |
|                 |           |           |           |                          |                   | Mid                         | 28099.92               | 2080831       | 27858                             | 2076799                        | 102                |      | 22475                         | 2079739          | 6  | 6                                     | 1 (4)                               | 224  |
|                 |           |           |           |                          |                   | High                        | 29400                  | 2102499       | 28579.2                           | 2088819                        | 504                |      | 22550                         | 2101339          | 8  | 3                                     | 1 (4)                               | 1022 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the CC1 and CC2 channel bandwidth combination.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.1.4

CA\_n257E

**Table 4.3.1.2.3.1.4-1: NR Intra-Band contiguous CA configuration CA\_n257E, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz.**

FFS

**Table 4.3.1.2.3.1.4-2: NR Intra-Band contiguous CA configuration CA\_n257E, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz.**

FFS

4.3.1.2.3.1.5

CA\_n257F

**Table 4.3.1.2.3.1.5-1: NR Intra-Band contiguous CA configuration CA\_n257F, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz.**

FFS

**Table 4.3.1.2.3.1.5-2: NR Intra-Band contiguous CA configuration CA\_n257F, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz.**

FFS

4.3.1.2.3.1.6

CA\_n257G

**Table 4.3.1.2.3.1.6-1: NR Intra-Band contiguous CA configuration CA\_n257G, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, adjusted channel spacing (default)**

| CBW combination | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |  | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs]) Note 4 | Offset oPoint A (SIB1) [PRBs] Note 4 | offset oPoint A (SIB1) [PRBs] Note 4 |
|-----------------|-----------|-----------|-----------|--------------------------|-------------------|--|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|--|--|--------------------------------------|--------------------------------------|
| 100+100         | CC1       | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26550                       | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 8                | 11                                     | 1 (8)                                    | 19                                   |                                      |
|                 |           |           |           |                          |                   | Mid  | 27949.92                    | 2078331                | 27828.96      | 2076315                           | 102                            |                    | 22469 | 2078011                       | 4                | 11                                     | 1 (8)                                    | 121                                  |                                      |
|                 |           |           |           |                          |                   | High                                       | 29350.56                    | 2101675                | 28940.16      | 2094835                           | 504                            |                    | 22550 | 2101339                       | 0                | 10                                     | 1 (8)                                    | 522                                  |                                      |
|                 | CC2       | 100       | 60        | 132                      | Downlink &        | Channel spacing CC1-CC2=99.36 MHz (Note 1) |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |                                      |
|                 |           |           |           |                          |                   | Low  | 26649.36                    | 2056655                | 26601.84      | 2055863                           | 0                              | 120                | 22393 | 2056123                       | 8                | 1                                      | 0 (0)                                    | 1                                    |                                      |
|                 |           |           |           |                          |                   | Mid  | 28049.28                    | 2079987                | 27928.32      | 2077971                           | 102                            |                    | 22474 | 2079451                       | 4                | 1                                      | 0 (0)                                    | 103                                  |                                      |

|   |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
|---|--|--|--|--|--------|------|----------|---------|----------|---------|-----|--|-------|---------|---|---|-------|-----|
|   |  |  |  |  | Uplink | High | 29449.92 | 2103331 | 29039.52 | 2096491 | 504 |  | 22555 | 2102779 | 0 | 0 | 0 (0) | 504 |
| Note 1: The adjusted channel spacing is a multiple of subcarrier spacing applicable for both scs=60 kHz and scs=120 kHz and less than the nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.   |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
| Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
| Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
| Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |

**Table 4.3.1.2.3.1.6-2: NR Intra-Band contiguous CA configuration CA\_n257G, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, nominal channel spacing (for ACLR, ACS, IBB Testing)**

| CBW combination | CC Note 2                                  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 Index (Offset [RBs]) Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |     |
|-----------------|--|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|------------------|--|--|-------------------------------------|-----|
| 100+100         | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low                         | 26550                  | 2054999       | 26502.48                          | 2054207                        | 0                  | 120  | 22388                         | 2054683          | 8  | 11                                     | 1 (8)                               | 19  |
|                 |  |           |           |                          |                   | Mid                         | 27949.92               | 2078331       | 27828.96                          | 2076315                        | 102                |      | 22469                         | 2078011          | 4  | 11                                     | 1 (8)                               | 121 |
|                 |  |           |           |                          |                   | High                        | 29349.96               | 2101665       | 28939.56                          | 2094825                        | 504                |      | 22550                         | 2101339          | 10   | 10                                     | 1 (8)                               | 522 |
|                 | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |                  |  |  |                                     |     |
|                 | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low                         | 26649.96               | 2056665       | 26602.44                          | 2055873                        | 0                  | 120  | 22393                         | 2056123          | 10   | 0                                      | 0 (0)                               | 0   |
|                 |  |           |           |                          |                   | Mid                         | 28049.88               | 2079997       | 27928.92                          | 2077981                        | 102                |      | 22474                         | 2079451          | 6  | 0                                      | 0 (0)                               | 102 |
|                 |  |           |           |                          |                   | High                        | 29449.92               | 2103331       | 29039.52                          | 2096491                        | 504                |      | 22555                         | 2102779          | 0  | 0                                      | 0 (0)                               | 504 |

- Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.
- Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.
- Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.
- Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.1.6-3: NR Intra-Band contiguous CA configuration CA\_n257G, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, adjusted channel spacing (default)

| CBW combination | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2                | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |      |
|-----------------|-----------|-----------|-----------|--------------------------|-------------------|--|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|------------------|--|--|-------------------------------------|------|
| 100+100         | CC1       | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26550                  | 2054999       | 26502.48                          | 2054207                        | 0                  | 120  | 22388                         | 2054683          | 10                                     | 5                                      | 1 (4)                               | 18   |
|                 |           |           |           |                          |                   | Mid  | 27950.04               | 2078333       | 27755.64                          | 2075093                        | 102                |      | 22469                         | 2078011          | 7                                      | 5                                      | 1 (4)                               | 222  |
|                 |           |           |           |                          |                   | High                                       | 29350.56               | 2101675       | 28577.28                          | 2088787                        | 504                |      | 22550                         | 2101339          | 0                                      | 5                                      | 1 (4)                               | 1026 |
|                 | CC2       | 100       | 120       | 66                       | Downlink & Uplink | Channel spacing CC1-CC2=99.36 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |                  |  |  |                                     |      |
|                 |           |           |           |                          |                   | Low  | 26649.36               | 2056655       | 26601.84                          | 2055863                        | 0                  | 120  | 22393                         | 2056123          | 10                                     | 0                                      | 0 (0)                               | 0    |
|                 |           |           |           |                          |                   | Mid  | 28049.4                | 2079989       | 27855                             | 2076749                        | 102                |      | 22474                         | 2079451          | 7                                      | 0                                      | 0 (0)                               | 204  |
|                 |           |           |           |                          |                   | High                                       | 29449.92               | 2103331       | 28676.64                          | 2090443                        | 504                |      | 22555                         | 2102779          | 0                                      | 0                                      | 0 (0)                               | 1008 |

Note 1: The adjusted channel spacing is a multiple of subcarrier spacing applicable for both scs=60 kHz and scs=120 kHz and less than the nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.6-4: NR Intra-Band contiguous CA configuration CA\_n257G, SCS=120 kHz,  $\Delta F_{\text{Raster}} = 120$  kHz, nominal channel spacing (for ACLR, ACS, IBB Testing)**

| CBW combination | CC Note 2  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | CORESET #0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |  |  |  |
|-----------------|--|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|---------------------------------------|--|--|-------------------------------------|--|--|--|
| 100+100         | CC1  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26550                       | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 10               | 5                                     | 1 (4)                                  | 18                                     |                                     |  |  |  |
|                 |  |           |           |                          |                   | Mid  | 27950.04                    | 2078333                | 27755.64      | 2075093                           | 102                            |                    | 22469 | 2078011                       | 7                | 5                                     | 1 (4)                                  | 222                                    |                                     |  |  |  |
|                 |  |           |           |                          |                   | High | 29349.96                    | 2101665                | 28576.68      | 2088777                           | 504                            |                    | 22550 | 2101339                       | 5                | 5                                     | 1 (4)                                  | 1026                                   |                                     |  |  |  |
|                 | Channel spacing CC1-CC2=99.96 MHz (Note 1)   |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |  |                                     |  |  |  |
|                 | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26649.96                    | 2056665                | 26602.44      | 2055873                           | 0                              | 120                | 22393 | 2056123                       | 5                | 0                                     | 0 (0)                                  | 0                                      |                                     |  |  |  |
|                 |  |           |           |                          |                   | Mid  | 28050                       | 2079999                | 27855.6       | 2076759                           | 102                            |                    | 22474 | 2079451                       | 2                | 0                                     | 0 (0)                                  | 204                                    |                                     |  |  |  |
|                 |  |           |           |                          |                   | High | 29449.92                    | 2103331                | 28676.64      | 2090443                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                     | 0 (0)                                  | 1008                                   |                                     |  |  |  |
| Note 1:         | Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.   |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |  |                                     |  |  |  |
| Note 2:         | CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.   |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |  |                                     |  |  |  |
| Note 3:         | The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.  |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |  |                                     |  |  |  |
| Note 4:         | The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |  |                                     |  |  |  |

## 4.3.1.2.3.1.7

## CA\_n257H

Table 4.3.1.2.3.1.7-1: NR Intra-Band contiguous CA configuration CA\_n257H, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, adjusted channel spacing (default)

| CBW combination | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2                | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |     |
|-----------------|-----------|-----------|-----------|--------------------------|-------------------|--|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|------------------|---------------------------------------|---------------------------------------|-------------------------------------|-----|
| 100+100 +100    | CC1       | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26550                  | 2054999       | 26502.48                          | 2054207                        | 0                  | 120  | 22388                         | 2054683          | 8                                     | 11                                    | 1 (8)                               | 19  |
|                 |           |           |           |                          |                   | Mid  | 27900                  | 2077499       | 27779.04                          | 2075483                        | 102                |      | 22466                         | 2077147          | 8                                     | 8                                     | 1 (8)                               | 118 |
|                 |           |           |           |                          |                   | High                                       | 29251.2                | 2100019       | 28840.8                           | 2093179                        | 504                |      | 22544                         | 2099611          | 0                                     | 4                                     | 1 (8)                               | 516 |
|                 | CC2       | 100       | 60        | 132                      | Downlink & Uplink | Channel spacing CC1-CC2=99.36 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |                  |                                       | 1 (8)                                 | 19                                  |     |
|                 |           |           |           |                          |                   | Low  | 26649.36               | 2056655       | 26601.84                          | 2055863                        | 0                  | 120  | 22393                         | 2056123          | 8                                     | 1                                     | 0 (0)                               | 1   |
|                 |           |           |           |                          |                   | Mid  | 27999.36               | 2079155       | 27878.4                           | 2077139                        | 102                |      | 22472                         | 2078875          | 8                                     | 14                                    | 1 (8)                               | 124 |
|                 |           |           |           |                          |                   | High                                       | 29350.56               | 2101675       | 28940.16                          | 2094835                        | 504                |      | 22550                         | 2101339          | 0                                     | 10                                    | 1 (8)                               | 522 |
|                 | CC3       | 100       | 60        | 132                      | Downlink & Uplink | Channel spacing CC2-CC3=99.36 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |                  |                                       | 1 (8)                                 | 19                                  |     |
|                 |           |           |           |                          |                   | Low  | 26748.72               | 2058311       | 26701.2                           | 2057519                        | 0                  | 120  | 22399                         | 2057851          | 8                                     | 7                                     | 0 (0)                               | 7   |
|                 |           |           |           |                          |                   | Mid  | 28098.72               | 2080811       | 27977.76                          | 2078795                        | 102                |      | 22477                         | 2080315          | 8                                     | 4                                     | 0 (0)                               | 106 |
|                 |           |           |           |                          |                   | High                                       | 29449.92               | 2103331       | 29039.52                          | 2096491                        | 504                |      | 22555                         | 2102779          | 0                                     | 0                                     | 0 (0)                               | 504 |

Note 1: The adjusted channel spacing is a multiple of subcarrier spacing applicable for both scs=60 kHz and scs=120 kHz and less than the nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.7-2: NR Intra-Band contiguous CA configuration CA\_n257H, SCS=60 kHz,  $\Delta F_{\text{Raster}} = 60 \text{ kHz}$ , nominal channel spacing (for ACLR, ACS, IBB Testing)**

| CBW combination | CC Note 2                                  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | CORESET #0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |
|-----------------|--|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|---------------------------------------|--|--|-------------------------------------|
| 100+100 +100    | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26550                       | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 8                | 11                                    | 1 (8)                                  | 19                                     |                                     |
|                 |  |           |           |                          |                   | Mid  | 27900                       | 2077499                | 27779.04      | 2075483                           | 102                            |                    | 22466 | 2077147                       | 8                | 8                                     | 1 (8)                                  | 118                                    |                                     |
|                 |  |           |           |                          |                   | High | 29250                       | 2099999                | 28839.6       | 2093159                           | 504                            |                    | 22544 | 2099611                       | 8                | 5                                     | 1 (8)                                  | 517                                    |                                     |
|                 | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |  |                                     |
|                 | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26649.96                    | 2056665                | 26602.44      | 2055873                           | 0                              | 120                | 22393 | 2056123                       | 10               | 0                                     | 0 (0)                                  | 0                                      |                                     |
|                 |  |           |           |                          |                   | Mid  | 27999.96                    | 2079165                | 27879         | 2077149                           | 102                            |                    | 22472 | 2078875                       | 10               | 13                                    | 1 (8)                                  | 123                                    |                                     |
|                 |  |           |           |                          |                   | High | 29349.96                    | 2101665                | 28939.56      | 2094825                           | 504                            |                    | 22550 | 2101339                       | 10               | 10                                    | 1 (8)                                  | 522                                    |                                     |
|                 | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |  |                                     |
|                 | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26749.92                    | 2058331                | 26702.4       | 2057539                           | 0                              | 120                | 22399 | 2057851                       | 0                | 6                                     | 0 (0)                                  | 6                                      |                                     |
|                 |  |           |           |                          |                   | Mid  | 28099.92                    | 2080831                | 27978.96      | 2078815                           | 102                            |                    | 22477 | 2080315                       | 0                | 3                                     | 0 (0)                                  | 105                                    |                                     |
|                 |  |           |           |                          |                   | High | 29449.92                    | 2103331                | 29039.52      | 2096491                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                     | 0 (0)                                  | 504                                    |                                     |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.1.7-3: NR Intra-Band contiguous CA configuration CA\_n257H, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, adjusted channel spacing (default)

| CBW combination | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2                | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |      |
|-----------------|-----------|-----------|-----------|--------------------------|-------------------|--|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|------------------|--|--|-------------------------------------|------|
| 100+100 +100    | CC1       | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26550                  | 2054999       | 26502.48                          | 2054207                        | 0                  | 120  | 22388                         | 2054683          | 10                                     | 5                                      | 1 (4)                               | 18   |
|                 |           |           |           |                          |                   | Mid  | 27900                  | 2077499       | 27705.6                           | 2074259                        | 102                |      | 22466                         | 2077147          | 4                                      | 4                                      | 1 (4)                               | 220  |
|                 |           |           |           |                          |                   | High                                       | 29251.2                | 2100019       | 28477.92                          | 2087131                        | 504                |      | 22544                         | 2099611          | 0                                      | 2                                      | 1 (4)                               | 1020 |
|                 | CC2       | 100       | 120       | 66                       | Downlink & Uplink | Channel spacing CC1-CC2=99.36 MHz (Note 1) |                        |               |                                   |                                |                    | 120  | 22393                         | 2056123          | 10                                     | 0                                      | 0 (0)                               | 0    |
|                 |           |           |           |                          |                   | Low  | 26649.36               | 2056655       | 26601.84                          | 2055863                        | 0                  |      | 22472                         | 2078875          | 4                                      | 7                                      | 1 (4)                               | 226  |
|                 |           |           |           |                          |                   | Mid  | 27999.36               | 2079155       | 27804.96                          | 2075915                        | 102                |      | 22550                         | 2101339          | 0                                      | 5                                      | 1 (4)                               | 1026 |
|                 | CC3       | 100       | 120       | 66                       | Downlink & Uplink | Channel spacing CC2-CC3=99.36 MHz (Note 1) |                        |               |                                   |                                |                    | 120  | 22399                         | 2057851          | 10                                     | 3                                      | 0 (0)                               | 6    |
|                 |           |           |           |                          |                   | Low  | 26748.72               | 2058311       | 26701.2                           | 2057519                        | 0                  |      | 22477                         | 2080315          | 4                                      | 2                                      | 0 (0)                               | 208  |
|                 |           |           |           |                          |                   | Mid  | 28098.72               | 2080811       | 27904.32                          | 2077571                        | 102                |      | 22555                         | 2102779          | 0                                      | 0                                      | 0 (0)                               | 1008 |

Note 1: The adjusted channel spacing is a multiple of subcarrier spacing applicable for both scs=60 kHz and scs=120 kHz and less than the nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.7-4: NR Intra-Band contiguous CA configuration CA\_n257H, SCS=120 kHz,  $\Delta F_{\text{Raster}} = 120$  kHz, nominal channel spacing (for ACLR, ACS, IBB Testing)**

| CBW combination | CC Note 2                                  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | CORESET #0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |
|-----------------|--|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|---------------------------------------|--|--|-------------------------------------|
| 100+100 +100    | CC1  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26550                       | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 10               | 5                                     | 1 (4)                                  | 18                                     |                                     |
|                 |  |           |           |                          |                   | Mid  | 27900                       | 2077499                | 27705.6       | 2074259                           | 102                            |                    | 22466 | 2077147                       | 4                | 4                                     | 1 (4)                                  | 220                                    |                                     |
|                 |  |           |           |                          |                   | High | 29250                       | 2099999                | 28476.72      | 2087111                           | 504                            |                    | 22544 | 2099611                       | 10               | 2                                     | 1 (4)                                  | 1020                                   |                                     |
|                 | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |  |                                     |
|                 | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26649.96                    | 2056665                | 26602.44      | 2055873                           | 0                              | 120                | 22393 | 2056123                       | 5                | 0                                     | 0 (0)                                  | 0                                      |                                     |
|                 |  |           |           |                          |                   | Mid  | 27999.96                    | 2079165                | 27805.56      | 2075925                           | 102                            |                    | 22472 | 2078875                       | 11               | 6                                     | 1 (4)                                  | 224                                    |                                     |
|                 |  |           |           |                          |                   | High | 29349.96                    | 2101665                | 28576.68      | 2088777                           | 504                            |                    | 22550 | 2101339                       | 5                | 5                                     | 1 (4)                                  | 1026                                   |                                     |
|                 | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |  |                                     |
|                 | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26749.92                    | 2058331                | 26702.4       | 2057539                           | 0                              | 120                | 22399 | 2057851                       | 0                | 3                                     | 0 (0)                                  | 6                                      |                                     |
|                 |  |           |           |                          |                   | Mid  | 28099.92                    | 2080831                | 27905.52      | 2077591                           | 102                            |                    | 22477 | 2080315                       | 6                | 1                                     | 0 (0)                                  | 206                                    |                                     |
|                 |  |           |           |                          |                   | High | 29449.92                    | 2103331                | 28676.64      | 2090443                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                     | 0 (0)                                  | 1008                                   |                                     |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.1.8

## CA\_n257I

Table 4.3.1.2.3.1.8-1: NR Intra-Band contiguous CA configuration CA\_n257I, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, adjusted channel spacing (default)

| CBW combination  | CC Note 2                                  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |
|------------------|--|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|--|---------------------------------------|-------------------------------------|
| 100+100 +100+100 | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26550                       | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 8                | 11                                     | 1 (8)                                 | 19                                  |
|                  |  |           |           |                          |                   | Mid  | 27849.96                    | 2076665                | 27729         | 2074649                           | 102                            |                    | 22463 | 2076283                       | 2                | 6                                      | 1 (8)                                 | 116                                 |
|                  |  |           |           |                          |                   | High | 29151.84                    | 2098363                | 28741.44      | 2091523                           | 504                            |                    | 22538 | 2097883                       | 0                | 6                                      | 0 (0)                                 | 510                                 |
|                  | Channel spacing CC1-CC2=99.36 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |  |                                       |                                     |
|                  | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26649.36                    | 2056655                | 26601.84      | 2055863                           | 0                              | 120                | 22393 | 2056123                       | 8                | 1                                      | 0 (0)                                 | 1                                   |
|                  |  |           |           |                          |                   | Mid  | 27949.32                    | 2078321                | 27828.36      | 2076305                           | 102                            |                    | 22469 | 2078011                       | 2                | 12                                     | 1 (8)                                 | 122                                 |
|                  |  |           |           |                          |                   | High | 29251.2                     | 2100019                | 28840.8       | 2093179                           | 504                            |                    | 22544 | 2099611                       | 0                | 4                                      | 1 (8)                                 | 516                                 |
|                  | Channel spacing CC2-CC3=99.36 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |  |                                       |                                     |
|                  | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26748.72                    | 2058311                | 26701.2       | 2057519                           | 0                              | 120                | 22399 | 2057851                       | 8                | 7                                      | 0 (0)                                 | 7                                   |
|                  |  |           |           |                          |                   | Mid  | 28048.68                    | 2079977                | 27927.72      | 2077961                           | 102                            |                    | 22474 | 2079451                       | 2                | 2                                      | 0 (0)                                 | 104                                 |
|                  |  |           |           |                          |                   | High | 29350.56                    | 2101675                | 28940.16      | 2094835                           | 504                            |                    | 22550 | 2101339                       | 0                | 10                                     | 1 (8)                                 | 522                                 |
|                  | Channel spacing CC3-CC4=99.36 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |  |                                       |                                     |
|                  | CC4  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26848.08                    | 2059967                | 26800.56      | 2059175                           | 0                              | 120                | 22405 | 2059579                       | 8                | 5                                      | 1 (8)                                 | 13                                  |
|                  |  |           |           |                          |                   | Mid  | 28148.04                    | 2081633                | 28027.08      | 2079617                           | 102                            |                    | 22480 | 2081179                       | 2                | 0                                      | 1 (8)                                 | 110                                 |
|                  |  |           |           |                          |                   | High | 29449.92                    | 2103331                | 29039.52      | 2096491                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                      | 0 (0)                                 | 504                                 |

Note 1: The adjusted channel spacing is a multiple of subcarrier spacing applicable for both scs=60 kHz and scs=120 kHz and less than the nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.8-2: NR Intra-Band contiguous CA configuration CA\_n257I, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, nominal channel spacing (for ACLR, ACS, IBB Testing)**

| CBW combination  | CC Note 2                                  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |
|------------------|--|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|---------------------------------------|---------------------------------------|-------------------------------------|
| 100+100 +100+100 | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26550                       | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 8                | 11                                    | 1 (8)                                 | 19                                  |
|                  |  |           |           |                          |                   | Mid  | 27849.96                    | 2076665                | 27729         | 2074649                           | 102                            |                    | 22463 | 2076283                       | 2                | 6                                     | 1 (8)                                 | 116                                 |
|                  |  |           |           |                          |                   | High | 29150.04                    | 2098333                | 28739.64      | 2091493                           | 504                            |                    | 22538 | 2097883                       | 6                | 0                                     | 1 (8)                                 | 512                                 |
|                  | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                     |
|                  | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26649.96                    | 2056665                | 26602.44      | 2055873                           | 0                              | 120                | 22393 | 2056123                       | 10               | 0                                     | 0 (0)                                 | 0                                   |
|                  |  |           |           |                          |                   | Mid  | 27949.92                    | 2078331                | 27828.96      | 2076315                           | 102                            |                    | 22469 | 2078011                       | 4                | 11                                    | 1 (8)                                 | 121                                 |
|                  |  |           |           |                          |                   | High | 29250                       | 2099999                | 28839.6       | 2093159                           | 504                            |                    | 22544 | 2099611                       | 8                | 5                                     | 1 (8)                                 | 517                                 |
|                  | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                     |
|                  | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26749.92                    | 2058331                | 26702.4       | 2057539                           | 0                              | 120                | 22399 | 2057851                       | 0                | 6                                     | 0 (0)                                 | 6                                   |
|                  |  |           |           |                          |                   | Mid  | 28049.88                    | 2079997                | 27928.92      | 2077981                           | 102                            |                    | 22474 | 2079451                       | 6                | 0                                     | 0 (0)                                 | 102                                 |
|                  |  |           |           |                          |                   | High | 29349.96                    | 2101665                | 28939.56      | 2094825                           | 504                            |                    | 22550 | 2101339                       | 10               | 10                                    | 1 (8)                                 | 522                                 |
|                  | Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                     |
|                  | CC4  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26849.88                    | 2059997                | 26802.36      | 2059205                           | 0                              | 120                | 22405 | 2059579                       | 2                | 3                                     | 1 (8)                                 | 11                                  |
|                  |  |           |           |                          |                   | Mid  | 28149.84                    | 2081663                | 28028.88      | 2079647                           | 102                            |                    | 22480 | 2081179                       | 8                | 5                                     | 0 (0)                                 | 107                                 |
|                  |  |           |           |                          |                   | High | 29449.92                    | 2103331                | 29039.52      | 2096491                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                     | 0 (0)                                 | 504                                 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.1.8-3: NR Intra-Band contiguous CA configuration CA\_n257I, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, adjusted channel spacing (default)

| CBW combination     | CC Note 2                                  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |      |
|---------------------|--|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|------------------|---------------------------------------|--|-------------------------------------|------|
| 100+100<br>+100+100 | CC1  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 26550                  | 2054999       | 26502.48                          | 2054207                        | 0                  | 120  | 22388                         | 2054683          | 10                                    | 5                                      | 1 (4)                               | 18   |
|                     |  |           |           |                          |                   | Mid                         | 27849.96               | 2076665       | 27655.56                          | 2073425                        | 102                |      | 22463                         | 2076283          | 1                                     | 3                                      | 1 (4)                               | 218  |
|                     |  |           |           |                          |                   | High                        | 29151.84               | 2098363       | 28378.56                          | 2085475                        | 504                |      | 22538                         | 2097883          | 0                                     | 3                                      | 0 (0)                               | 1014 |
|                     | Channel spacing CC1-CC2=99.36 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |                  |                                       |  |                                     |      |
|                     | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 26649.36               | 2056655       | 26601.84                          | 2055863                        | 0                  | 120  | 22393                         | 2056123          | 10                                    | 0                                      | 0 (0)                               | 0    |
|                     |  |           |           |                          |                   | Mid                         | 27949.32               | 2078321       | 27754.92                          | 2075081                        | 102                |      | 22469                         | 2078011          | 1                                     | 6                                      | 1 (4)                               | 224  |
|                     |  |           |           |                          |                   | High                        | 29251.2                | 2100019       | 28477.92                          | 2087131                        | 504                |      | 22544                         | 2099611          | 0                                     | 2                                      | 1 (4)                               | 1020 |
|                     | Channel spacing CC2-CC3=99.36 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |                  |                                       |  |                                     |      |
|                     | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 26748.72               | 2058311       | 26701.2                           | 2057519                        | 0                  | 120  | 22399                         | 2057851          | 10                                    | 3                                      | 0 (0)                               | 6    |
|                     |  |           |           |                          |                   | Mid                         | 28048.68               | 2079977       | 27854.28                          | 2076737                        | 102                |      | 22474                         | 2079451          | 1                                     | 1                                      | 0 (0)                               | 206  |
|                     |  |           |           |                          |                   | High                        | 29350.56               | 2101675       | 28577.28                          | 2088787                        | 504                |      | 22550                         | 2101339          | 0                                     | 5                                      | 1 (4)                               | 1026 |
|                     | Channel spacing CC3-CC4=99.36 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |                  |                                       |  |                                     |      |
|                     | CC4  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 26848.08               | 2059967       | 26800.56                          | 2059175                        | 0                  | 120  | 22405                         | 2059579          | 10                                    | 2                                      | 1 (4)                               | 12   |
|                     |  |           |           |                          |                   | Mid                         | 28148.04               | 2081633       | 27953.64                          | 2078393                        | 102                |      | 22480                         | 2081179          | 1                                     | 0                                      | 1 (4)                               | 212  |
|                     |  |           |           |                          |                   | High                        | 29449.92               | 2103331       | 28676.64                          | 2090443                        | 504                |      | 22555                         | 2102779          | 0                                     | 0                                      | 0 (0)                               | 1008 |

Note 1: The adjusted channel spacing is a multiple of subcarrier spacing applicable for both scs=60 kHz and scs=120 kHz and less than the nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.8-4: NR Intra-Band contiguous CA configuration CA\_n257I, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz nominal channel spacing (for ACLR, ACS, IBB Testing)**

| CBW combination  | CC Note 2                                  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |
|------------------|--|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|---------------------------------------|---------------------------------------|-------------------------------------|
| 100+100 +100+100 | CC1  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26550                       | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 10               | 5                                     | 1 (4)                                 | 18                                  |
|                  |  |           |           |                          |                   | Mid  | 27849.96                    | 2076665                | 27655.56      | 2073425                           | 102                            |                    | 22463 | 2076283                       | 1                | 3                                     | 1 (4)                                 | 218                                 |
|                  |  |           |           |                          |                   | High | 29150.04                    | 2098333                | 28376.76      | 2085445                           | 504                            |                    | 22538 | 2097883                       | 3                | 0                                     | 1 (4)                                 | 1016                                |
|                  | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                     |
|                  | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26649.96                    | 2056665                | 26602.44      | 2055873                           | 0                              | 120                | 22393 | 2056123                       | 5                | 0                                     | 0 (0)                                 | 0                                   |
|                  |  |           |           |                          |                   | Mid  | 27949.92                    | 2078331                | 27755.52      | 2075091                           | 102                            |                    | 22469 | 2078011                       | 8                | 5                                     | 1 (4)                                 | 222                                 |
|                  |  |           |           |                          |                   | High | 29250                       | 2099999                | 28476.72      | 2087111                           | 504                            |                    | 22544 | 2099611                       | 10               | 2                                     | 1 (4)                                 | 1020                                |
|                  | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                     |
|                  | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26749.92                    | 2058331                | 26702.4       | 2057539                           | 0                              | 120                | 22399 | 2057851                       | 0                | 3                                     | 0 (0)                                 | 6                                   |
|                  |  |           |           |                          |                   | Mid  | 28049.88                    | 2079997                | 27855.48      | 2076757                           | 102                            |                    | 22474 | 2079451                       | 3                | 0                                     | 0 (0)                                 | 204                                 |
|                  |  |           |           |                          |                   | High | 29349.96                    | 2101665                | 28576.68      | 2088777                           | 504                            |                    | 22550 | 2101339                       | 5                | 5                                     | 1 (4)                                 | 1026                                |
|                  | Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                     |
|                  | CC4  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26849.88                    | 2059997                | 26802.36      | 2059205                           | 0                              | 120                | 22405 | 2059579                       | 7                | 1                                     | 1 (4)                                 | 10                                  |
|                  |  |           |           |                          |                   | Mid  | 28149.84                    | 2081663                | 27955.44      | 2078423                           | 102                            |                    | 22480 | 2081179                       | 10               | 2                                     | 0 (0)                                 | 208                                 |
|                  |  |           |           |                          |                   | High | 29449.92                    | 2103331                | 28676.64      | 2090443                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                     | 0 (0)                                 | 1008                                |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.1.9

## CA\_n257J

Table 4.3.1.2.3.1.9-1: NR Intra-Band contiguous CA configuration CA\_n257J, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, adjusted channel spacing (default)

| CBW combination             | CC Note 2                                  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |
|-----------------------------|--|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|--|---------------------------------------|-------------------------------------|
| 100+100<br>+100+100<br>+100 | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26550                       | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 8                | 11                                     | 1 (8)                                 | 19                                  |
|                             |  |           |           |                          |                   | Mid  | 27799.92                    | 2075831                | 27678.96      | 2073815                           | 102                            |                    | 22460 | 2075419                       | 8                | 3                                      | 1 (8)                                 | 113                                 |
|                             |  |           |           |                          |                   | High | 29052.48                    | 2096707                | 28642.08      | 2089867                           | 504                            |                    | 22532 | 2096155                       | 0                | 0                                      | 0 (0)                                 | 504                                 |
|                             | Channel spacing CC1-CC2=99.36 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |  |                                       |                                     |
|                             | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26649.36                    | 2056655                | 26601.84      | 2055863                           | 0                              | 120                | 22393 | 2056123                       | 8                | 1                                      | 0 (0)                                 | 1                                   |
|                             |  |           |           |                          |                   | Mid  | 27899.28                    | 2077487                | 27778.32      | 2075471                           | 102                            |                    | 22466 | 2077147                       | 8                | 9                                      | 1 (8)                                 | 119                                 |
|                             |  |           |           |                          |                   | High | 29151.84                    | 2098363                | 28741.44      | 2091523                           | 504                            |                    | 22538 | 2097883                       | 0                | 6                                      | 0 (0)                                 | 510                                 |
|                             | Channel spacing CC2-CC3=99.36 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |  |                                       |                                     |
|                             | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26748.72                    | 2058311                | 26701.2       | 2057519                           | 0                              | 120                | 22399 | 2057851                       | 8                | 7                                      | 0 (0)                                 | 7                                   |
|                             |  |           |           |                          |                   | Mid  | 27998.64                    | 2079143                | 27877.68      | 2077127                           | 102                            |                    | 22472 | 2078875                       | 8                | 15                                     | 1 (8)                                 | 125                                 |
|                             |  |           |           |                          |                   | High | 29251.2                     | 2100019                | 28840.8       | 2093179                           | 504                            |                    | 22544 | 2099611                       | 0                | 4                                      | 1 (8)                                 | 516                                 |
|                             | Channel spacing CC3-CC4=99.36 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |  |                                       |                                     |
|                             | CC4  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26848.08                    | 2059967                | 26800.56      | 2059175                           | 0                              | 120                | 22405 | 2059579                       | 8                | 5                                      | 1 (8)                                 | 13                                  |
|                             |  |           |           |                          |                   | Mid  | 28098                       | 2080799                | 27977.04      | 2078783                           | 102                            |                    | 22477 | 2080315                       | 8                | 5                                      | 0 (0)                                 | 107                                 |
|                             |  |           |           |                          |                   | High | 29350.56                    | 2101675                | 28940.16      | 2094835                           | 504                            |                    | 22550 | 2101339                       | 0                | 10                                     | 1 (8)                                 | 522                                 |
|                             | Channel spacing CC4-CC5=99.36 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |  |                                       |                                     |
|                             | CC5  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26947.44                    | 2061623                | 26899.92      | 2060831                           | 0                              | 120                | 22411 | 2061307                       | 8                | 11                                     | 1 (8)                                 | 19                                  |
|                             |  |           |           |                          |                   | Mid  | 28197.36                    | 2082455                | 28076.4       | 2080439                           | 102                            |                    | 22483 | 2082043                       | 8                | 3                                      | 1 (8)                                 | 113                                 |
|                             |  |           |           |                          |                   | High | 29449.92                    | 2103331                | 29039.52      | 2096491                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                      | 0 (0)                                 | 504                                 |

Note 1: The adjusted channel spacing is a multiple of subcarrier spacing applicable for both scs=60 kHz and scs=120 kHz and less than the nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.9-2: NR Intra-Band contiguous CA configuration CA\_n257J, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, nominal channel spacing (for ACLR, ACS, IBB Testing)**

| CBW combination             | CC Note 2                                  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |
|-----------------------------|--|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|---------------------------------------|---------------------------------------|-------------------------------------|
| 100+100<br>+100+100<br>+100 | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26550                       | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 8                | 11                                    | 1 (8)                                 | 19                                  |
|                             |  |           |           |                          |                   | Mid  | 27799.92                    | 2075831                | 27678.96      | 2073815                           | 102                            |                    | 22460 | 2075419                       | 8                | 3                                     | 1 (8)                                 | 113                                 |
|                             |  |           |           |                          |                   | High | 29050.08                    | 2096667                | 28639.68      | 2089827                           | 504                            |                    | 22532 | 2096155                       | 4                | 3                                     | 0 (0)                                 | 507                                 |
|                             | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                     |
|                             | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26649.96                    | 2056665                | 26602.44      | 2055873                           | 0                              | 120                | 22393 | 2056123                       | 10               | 0                                     | 0 (0)                                 | 0                                   |
|                             |  |           |           |                          |                   | Mid  | 27899.88                    | 2077497                | 27778.92      | 2075481                           | 102                            |                    | 22466 | 2077147                       | 10               | 8                                     | 1 (8)                                 | 118                                 |
|                             |  |           |           |                          |                   | High | 29150.04                    | 2098333                | 28739.64      | 2091493                           | 504                            |                    | 22538 | 2097883                       | 6                | 0                                     | 1 (8)                                 | 512                                 |
|                             | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                     |
|                             | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26749.92                    | 2058331                | 26702.4       | 2057539                           | 0                              | 120                | 22399 | 2057851                       | 0                | 6                                     | 0 (0)                                 | 6                                   |
|                             |  |           |           |                          |                   | Mid  | 27999.84                    | 2079163                | 27878.88      | 2077147                           | 102                            |                    | 22472 | 2078875                       | 0                | 14                                    | 1 (8)                                 | 124                                 |
|                             |  |           |           |                          |                   | High | 29250                       | 2099999                | 28839.6       | 2093159                           | 504                            |                    | 22544 | 2099611                       | 8                | 5                                     | 1 (8)                                 | 517                                 |
|                             | Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                     |
|                             | CC4  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26849.88                    | 2059997                | 26802.36      | 2059205                           | 0                              | 120                | 22405 | 2059579                       | 2                | 3                                     | 1 (8)                                 | 11                                  |
|                             |  |           |           |                          |                   | Mid  | 28099.8                     | 2080829                | 27978.84      | 2078813                           | 102                            |                    | 22477 | 2080315                       | 2                | 3                                     | 0 (0)                                 | 105                                 |
|                             |  |           |           |                          |                   | High | 29349.96                    | 2101665                | 28939.56      | 2094825                           | 504                            |                    | 22550 | 2101339                       | 10               | 10                                    | 1 (8)                                 | 522                                 |
|                             | Channel spacing CC4-CC5=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                     |
|                             | CC5  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26949.84                    | 2061663                | 26902.32      | 2060871                           | 0                              | 120                | 22411 | 2061307                       | 4                | 8                                     | 1 (8)                                 | 16                                  |
|                             |  |           |           |                          |                   | Mid  | 28199.76                    | 2082495                | 28078.8       | 2080479                           | 102                            |                    | 22483 | 2082043                       | 4                | 0                                     | 1 (8)                                 | 110                                 |
|                             |  |           |           |                          |                   | High | 29449.92                    | 2103331                | 29039.52      | 2096491                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                     | 0 (0)                                 | 504                                 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.1.9-3: NR Intra-Band contiguous CA configuration CA\_n257J, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, adjusted channel spacing (default)

| CBW combination                            | CC Note 2   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN]        | point A [MHz]                 | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$              | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |                   |
|--|---|-----------|-----------|--------------------------|-------------------|-----------------------------|-------------------------------|-------------------------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-------------------------------|--|--|-------------------------------------|-------------------|
| 100+100 +100+100 +100                      | CC1   | 100       | 120       | 66                       | Downlink & Uplink | Low<br>Mid<br>High          | 26550<br>27800.04<br>29052.48 | 2054999<br>2075833<br>2096707 | 26502.48<br>27605.64<br>28279.2   | 2054207<br>2072593<br>2083819  | 0<br>102<br>504    | 120  | 22388<br>22460<br>22532       | 2054683<br>2075419<br>2096155 | 10<br>9<br>0                           | 5<br>1<br>0                            | 1 (4)<br>1 (4)<br>0 (0)             | 18<br>214<br>1008 |
| Channel spacing CC1-CC2=99.36 MHz (Note 1) |   |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |  |                                     |                   |
| Channel spacing CC2-CC3=99.36 MHz (Note 1) |   |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |  |                                     |                   |
| Channel spacing CC3-CC4=99.36 MHz (Note 1) |   |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |  |                                     |                   |
| Channel spacing CC4-CC5=99.36 MHz (Note 1) |   |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |  |                                     |                   |
| Channel spacing CC5-CC6=99.36 MHz (Note 1) |   |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |  |                                     |                   |
| Note 1:                                    | The adjusted channel spacing is a multiple of subcarrier spacing applicable for both scs=60 kHz and scs=120 kHz and less than the nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.   |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |  |                                     |                   |
| Note 2:                                    | CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |  |                                     |                   |
| Note 3:                                    | The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |  |                                     |                   |
| Note 4:                                    | The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |  |                                     |                   |

**Table 4.3.1.2.3.1.9-4: NR Intra-Band contiguous CA configuration CA\_n257J, SCS=120 kHz,  $\Delta F_{\text{Raster}} = 120$  kHz, nominal channel spacing (for ACLR, ACS, IBB Testing)**

| CBW combination                            | CC Note 2   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN]        | point A [MHz]                 | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$              | Offset Carrier CORESET#0 Index (Offset [RBs]) Note 4 | CORESET#0 Index (Offset [RBs]) Note 3 | offsetToPointA (SIB1) [PRBs] Note 4 |                   |
|--|---|-----------|-----------|--------------------------|-------------------|-----------------------------|-------------------------------|-------------------------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-------------------------------|--|---------------------------------------|-------------------------------------|-------------------|
| 100+100 +100+100 +100                      | CC1   | 100       | 120       | 66                       | Downlink & Uplink | Low<br>Mid<br>High          | 26550<br>27800.04<br>29050.08 | 2054999<br>2075833<br>2096667 | 26502.48<br>27605.64<br>28276.8   | 2054207<br>2072593<br>2083779  | 0<br>102<br>504    | 120  | 22388<br>22460<br>22532       | 2054683<br>2075419<br>2096155 | 10<br>9<br>8   | 5<br>1<br>1                           | 1 (4)<br>1 (4)<br>0 (0)             | 18<br>214<br>1010 |
| Channel spacing CC1-CC2=99.96 MHz (Note 1) |   |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |                                       |                                     |                   |
| Channel spacing CC2-CC3=99.96 MHz (Note 1) |   |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |                                       |                                     |                   |
| Channel spacing CC3-CC4=99.96 MHz (Note 1) |   |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |                                       |                                     |                   |
| Channel spacing CC4-CC5=99.96 MHz (Note 1) |   |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |                                       |                                     |                   |
| Channel spacing CC5-CC6=99.96 MHz (Note 1) |   |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |                                       |                                     |                   |
| Note 1:                                    | Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |                                       |                                     |                   |
| Note 2:                                    | CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |                                       |                                     |                   |
| Note 3:                                    | The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |                                       |                                     |                   |
| Note 4:                                    | The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |           |           |                          |                   |                             |                               |                               |                                   |                                |                    |      |                               |                               |  |                                       |                                     |                   |

## 4.3.1.2.3.1.10 CA\_n257K

Table 4.3.1.2.3.1.10-1: NR Intra-Band contiguous CA configuration CA\_n257K, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, adjusted channel spacing (default)

| CBW combination                            | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | Offset Carrier CORESET#0 [RBs] Note 3 | offset Carrier CORESET#0 [RBs] Note 4 |
|--|-----------|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| 100+100<br>+100+100<br>+100+100            | CC1       | 100       | 60        | 132                      | Downlink & Uplink | Low 26550                   | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 8                | 11                                    | 1 (8)                                 | 19                                    |                                       |
|  |           |           |           |                          |                   | Mid 27750                   | 2074999                | 27629.04      | 2072983                           | 102                            |                    | 22457 | 2074555                       | 0                | 1                                     | 1 (8)                                 | 111                                   |                                       |
|  |           |           |           |                          |                   | High 28953.12               | 2095051                | 28542.72      | 2088211                           | 504                            |                    | 22527 | 2094715                       | 0                | 10                                    | 1 (8)                                 | 522                                   |                                       |
| Channel spacing CC1-CC2=99.36 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                       |                                       |
|  | CC2       | 100       | 60        | 132                      | Downlink & Uplink | Low 26649.36                | 2056655                | 26601.84      | 2055863                           | 0                              | 120                | 22393 | 2056123                       | 8                | 1                                     | 0 (0)                                 | 1                                     |                                       |
|  |           |           |           |                          |                   | Mid 27849.36                | 2076655                | 27728.4       | 2074639                           | 102                            |                    | 22463 | 2076283                       | 0                | 7                                     | 1 (8)                                 | 117                                   |                                       |
|  |           |           |           |                          |                   | High 29052.48               | 2096707                | 28642.08      | 2089867                           | 504                            |                    | 22532 | 2096155                       | 0                | 0                                     | 0 (0)                                 | 504                                   |                                       |
| Channel spacing CC2-CC3=99.36 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                       |                                       |
|  | CC3       | 100       | 60        | 132                      | Downlink & Uplink | Low 26748.72                | 2058311                | 26701.2       | 2057519                           | 0                              | 120                | 22399 | 2057851                       | 8                | 7                                     | 0 (0)                                 | 7                                     |                                       |
|  |           |           |           |                          |                   | Mid 27948.72                | 2078311                | 27827.76      | 2076295                           | 102                            |                    | 22469 | 2078011                       | 0                | 13                                    | 1 (8)                                 | 123                                   |                                       |
|  |           |           |           |                          |                   | High 29151.84               | 2098363                | 28741.44      | 2091523                           | 504                            |                    | 22538 | 2097883                       | 0                | 6                                     | 0 (0)                                 | 510                                   |                                       |
| Channel spacing CC3-CC4=99.36 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                       |                                       |
|  | CC4       | 100       | 60        | 132                      | Downlink & Uplink | Low 26848.08                | 2059967                | 26800.56      | 2059175                           | 0                              | 120                | 22405 | 2059579                       | 8                | 5                                     | 1 (8)                                 | 13                                    |                                       |
|  |           |           |           |                          |                   | Mid 28048.08                | 2079967                | 27927.12      | 2077951                           | 102                            |                    | 22474 | 2079451                       | 0                | 3                                     | 0 (0)                                 | 105                                   |                                       |
|  |           |           |           |                          |                   | High 29251.2                | 2100019                | 28840.8       | 2093179                           | 504                            |                    | 22544 | 2099611                       | 0                | 4                                     | 1 (8)                                 | 516                                   |                                       |
| Channel spacing CC4-CC5=99.36 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                       |                                       |
|  | CC5       | 100       | 60        | 132                      | Downlink & Uplink | Low 26947.44                | 2061623                | 26899.92      | 2060831                           | 0                              | 120                | 22411 | 2061307                       | 8                | 11                                    | 1 (8)                                 | 19                                    |                                       |
|  |           |           |           |                          |                   | Mid 28147.44                | 2081623                | 28026.48      | 2079607                           | 102                            |                    | 22480 | 2081179                       | 0                | 1                                     | 1 (8)                                 | 111                                   |                                       |
|  |           |           |           |                          |                   | High 29350.56               | 2101675                | 28940.16      | 2094835                           | 504                            |                    | 22550 | 2101339                       | 0                | 10                                    | 1 (8)                                 | 522                                   |                                       |
| Channel spacing CC5-CC6=99.36 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                       |                                       |
|  | CC6       | 100       | 60        | 132                      | Downlink & Uplink | Low 27046.8                 | 2063279                | 26999.28      | 2062487                           | 0                              | 120                | 22416 | 2062747                       | 8                | 1                                     | 0 (0)                                 | 1                                     |                                       |
|  |           |           |           |                          |                   | Mid 28246.8                 | 2083279                | 28125.84      | 2081263                           | 102                            |                    | 22486 | 2082907                       | 0                | 7                                     | 1 (8)                                 | 117                                   |                                       |
|  |           |           |           |                          |                   | High 29449.92               | 2103331                | 29039.52      | 2096491                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                     | 0 (0)                                 | 504                                   |                                       |

Note 1: The adjusted channel spacing is a multiple of subcarrier spacing applicable for both scs=60 kHz and scs=120 kHz and less than the nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-

ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.10-2: NR Intra-Band contiguous CA configuration CA\_n257K, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, nominal channel spacing (for ACLR, ACS, IBB Testing)**

| CBW combination                            | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | Correlation ESET #0 | offsetToPointA (SIB1) [PRBs] Note 4 |
|--|-----------|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|---------------------------------------|--|---------------------|-------------------------------------|
| 100+100<br>+100+100<br>+100+100            | CC1       | 100       | 60        | 132                      | Downlink & Uplink | Low 26550                   | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 8                | 11                                    | 1 (8)                                  | 19                  |                                     |
|  |           |           |           |                          |                   | Mid 27750                   | 2074999                | 27629.04      | 2072983                           | 102                            |                    | 22457 | 2074555                       | 0                | 1                                     | 1 (8)                                  | 111                 |                                     |
|  |           |           |           |                          |                   | High 28950.12               | 2095001                | 28539.72      | 2088161                           | 504                            |                    | 22527 | 2094715                       | 2                | 14                                    | 1 (8)                                  | 526                 |                                     |
| Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |                     |                                     |
|  | CC2       | 100       | 60        | 132                      | Downlink & Uplink | Low 26649.96                | 2056665                | 26602.44      | 2055873                           | 0                              | 120                | 22393 | 2056123                       | 10               | 0                                     | 0 (0)                                  | 0                   |                                     |
|  |           |           |           |                          |                   | Mid 27849.96                | 2076665                | 27729         | 2074649                           | 102                            |                    | 22463 | 2076283                       | 2                | 6                                     | 1 (8)                                  | 116                 |                                     |
|  |           |           |           |                          |                   | High 29050.08               | 2096667                | 28639.68      | 2089827                           | 504                            |                    | 22532 | 2096155                       | 4                | 3                                     | 0 (0)                                  | 507                 |                                     |
| Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |                     |                                     |
|  | CC3       | 100       | 60        | 132                      | Downlink & Uplink | Low 26749.92                | 2058331                | 26702.4       | 2057539                           | 0                              | 120                | 22399 | 2057851                       | 0                | 6                                     | 0 (0)                                  | 6                   |                                     |
|  |           |           |           |                          |                   | Mid 27949.92                | 2078331                | 27828.96      | 2076315                           | 102                            |                    | 22469 | 2078011                       | 4                | 11                                    | 1 (8)                                  | 121                 |                                     |
|  |           |           |           |                          |                   | High 29150.04               | 2098333                | 28739.64      | 2091493                           | 504                            |                    | 22538 | 2097883                       | 6                | 0                                     | 1 (8)                                  | 512                 |                                     |
| Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |                     |                                     |
|  | CC4       | 100       | 60        | 132                      | Downlink & Uplink | Low 26849.88                | 2059997                | 26802.36      | 2059205                           | 0                              | 120                | 22405 | 2059579                       | 2                | 3                                     | 1 (8)                                  | 11                  |                                     |
|  |           |           |           |                          |                   | Mid 28049.88                | 2079997                | 27928.92      | 2077981                           | 102                            |                    | 22474 | 2079451                       | 6                | 0                                     | 0 (0)                                  | 102                 |                                     |
|  |           |           |           |                          |                   | High 29250                  | 2099999                | 28839.6       | 2093159                           | 504                            |                    | 22544 | 2099611                       | 8                | 5                                     | 1 (8)                                  | 517                 |                                     |
| Channel spacing CC4-CC5=99.96 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |                     |                                     |
|  | CC5       | 100       | 60        | 132                      | Downlink & Uplink | Low 26949.84                | 2061663                | 26902.32      | 2060871                           | 0                              | 120                | 22411 | 2061307                       | 4                | 8                                     | 1 (8)                                  | 16                  |                                     |
|  |           |           |           |                          |                   | Mid 28149.84                | 2081663                | 28028.88      | 2079647                           | 102                            |                    | 22480 | 2081179                       | 8                | 5                                     | 0 (0)                                  | 107                 |                                     |
|  |           |           |           |                          |                   | High 29349.96               | 2101665                | 28939.56      | 2094825                           | 504                            |                    | 22550 | 2101339                       | 10               | 10                                    | 1 (8)                                  | 522                 |                                     |
| Channel spacing CC5-CC6=99.96 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |  |                     |                                     |
|  | CC6       | 100       | 60        | 132                      | Downlink & Uplink | Low 27049.8                 | 2063329                | 27002.28      | 2062537                           | 0                              | 120                | 22417 | 2063035                       | 6                | 13                                    | 1 (8)                                  | 21                  |                                     |
|  |           |           |           |                          |                   | Mid 28249.8                 | 2083329                | 28128.84      | 2081313                           | 102                            |                    | 22486 | 2082907                       | 10               | 2                                     | 1 (8)                                  | 112                 |                                     |
|  |           |           |           |                          |                   | High 29449.92               | 2103331                | 29039.52      | 2096491                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                     | 0 (0)                                  | 504                 |                                     |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.1.10-3: NR Intra-Band contiguous CA configuration CA\_n257K, SCS=120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, adjusted channel spacing (default)

| CBW combination                 | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2                | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |
|---------------------------------|-----------|-----------|-----------|--------------------------|-------------------|--|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|--|--|-------------------------------------|
| 100+100<br>+100+100<br>+100+100 | CC1       | 100       | 120       | 66                       | Downlink & Uplink | Low 26550                                  | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 10               | 5                                      | 1 (4)                                  | 18                                  |
|                                 |           |           |           |                          |                   | Mid 27750                                  | 2074999                | 27555.6       | 2071759                           | 102                            |                    | 22457 | 2074555                       | 6                | 0                                      | 1 (4)                                  | 212                                 |
|                                 |           |           |           |                          |                   | High 28953.12                              | 2095051                | 28179.84      | 2082163                           | 504                            |                    | 22527 | 2094715                       | 0                | 5                                      | 1 (4)                                  | 1026                                |
|                                 |           |           |           |                          |                   | Channel spacing CC1-CC2=99.36 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                     |
|                                 | CC2       | 100       | 120       | 66                       | Downlink & Uplink | Low 26649.36                               | 2056655                | 26601.84      | 2055863                           | 0                              | 120                | 22393 | 2056123                       | 10               | 0                                      | 0 (0)                                  | 0                                   |
|                                 |           |           |           |                          |                   | Mid 27849.36                               | 2076655                | 27654.96      | 2073415                           | 102                            |                    | 22463 | 2076283                       | 6                | 3                                      | 1 (4)                                  | 218                                 |
|                                 |           |           |           |                          |                   | High 29052.48                              | 2096707                | 28279.2       | 2083819                           | 504                            |                    | 22532 | 2096155                       | 0                | 0                                      | 0 (0)                                  | 1008                                |
|                                 |           |           |           |                          |                   | Channel spacing CC2-CC3=99.36 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                     |
|                                 | CC3       | 100       | 120       | 66                       | Downlink & Uplink | Low 26748.72                               | 2058311                | 26701.2       | 2057519                           | 0                              | 120                | 22399 | 2057851                       | 10               | 3                                      | 0 (0)                                  | 6                                   |
|                                 |           |           |           |                          |                   | Mid 27948.72                               | 2078311                | 27754.32      | 2075071                           | 102                            |                    | 22469 | 2078011                       | 6                | 6                                      | 1 (4)                                  | 224                                 |
|                                 |           |           |           |                          |                   | High 29151.84                              | 2098363                | 28378.56      | 2085475                           | 504                            |                    | 22538 | 2097883                       | 0                | 3                                      | 0 (0)                                  | 1014                                |
|                                 |           |           |           |                          |                   | Channel spacing CC3-CC4=99.36 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                     |
|                                 | CC4       | 100       | 120       | 66                       | Downlink & Uplink | Low 26848.08                               | 2059967                | 26800.56      | 2059175                           | 0                              | 120                | 22405 | 2059579                       | 10               | 2                                      | 1 (4)                                  | 12                                  |
|                                 |           |           |           |                          |                   | Mid 28048.08                               | 2079967                | 27853.68      | 2076727                           | 102                            |                    | 22474 | 2079451                       | 6                | 1                                      | 0 (0)                                  | 206                                 |
|                                 |           |           |           |                          |                   | High 29251.2                               | 2100019                | 28477.92      | 2087131                           | 504                            |                    | 22544 | 2099611                       | 0                | 2                                      | 1 (4)                                  | 1020                                |
|                                 |           |           |           |                          |                   | Channel spacing CC4-CC5=99.36 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                     |
|                                 | CC5       | 100       | 120       | 66                       | Downlink & Uplink | Low 26947.44                               | 2061623                | 26899.92      | 2060831                           | 0                              | 120                | 22411 | 2061307                       | 10               | 5                                      | 1 (4)                                  | 18                                  |
|                                 |           |           |           |                          |                   | Mid 28147.44                               | 2081623                | 27953.04      | 2078383                           | 102                            |                    | 22480 | 2081179                       | 6                | 0                                      | 1 (4)                                  | 212                                 |
|                                 |           |           |           |                          |                   | High 29350.56                              | 2101675                | 28577.28      | 2088787                           | 504                            |                    | 22550 | 2101339                       | 0                | 5                                      | 1 (4)                                  | 1026                                |
|                                 |           |           |           |                          |                   | Channel spacing CC5-CC6=99.36 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                     |
|                                 | CC6       | 100       | 120       | 66                       | Downlink & Uplink | Low 27046.8                                | 2063279                | 26999.28      | 2062487                           | 0                              | 120                | 22416 | 2062747                       | 10               | 0                                      | 0 (0)                                  | 0                                   |
|                                 |           |           |           |                          |                   | Mid 28246.8                                | 2083279                | 28052.4       | 2080039                           | 102                            |                    | 22486 | 2082907                       | 6                | 3                                      | 1 (4)                                  | 218                                 |
|                                 |           |           |           |                          |                   | High 29449.92                              | 2103331                | 28676.64      | 2090443                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                      | 0 (0)                                  | 1008                                |

Note 1: The adjusted channel spacing is a multiple of subcarrier spacing applicable for both scs=60 kHz and scs=120 kHz and less than the nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.10-4: NR Intra-Band contiguous CA configuration CA\_n257K, SCS=120 kHz,  $\Delta F_{\text{Raster}} = 120 \text{ kHz}$ , nominal channel spacing (for ACLR, ACS, IBB Testing)**

| CBW combination                            | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 Index (Offset [RBs]) Note 4 | CORESET#0 Index (Offset [RBs]) Note 3 | offsetToPointA (SIB1) [PRBs] Note 4 |
|--|-----------|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|--|---------------------------------------|-------------------------------------|
| 100+100<br>+100+100<br>+100+100            | CC1       | 100       | 120       | 66                       | Downlink & Uplink | Low 26550                   | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 10               | 5  | 1 (4)                                 | 18                                  |
|  |           |           |           |                          |                   | Mid 27750                   | 2074999                | 27555.6       | 2071759                           | 102                            |                    | 22457 | 2074555                       | 6                | 0  | 1 (4)                                 | 212                                 |
|  |           |           |           |                          |                   | High 28950.12               | 2095001                | 28176.84      | 2082113                           | 504                            |                    | 22527 | 2094715                       | 1                | 7  | 1 (4)                                 | 1030                                |
| Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |                                       |                                     |
|  | CC2       | 100       | 120       | 66                       | Downlink & Uplink | Low 26649.96                | 2056665                | 26602.44      | 2055873                           | 0                              | 120                | 22393 | 2056123                       | 5                | 0  | 0 (0)                                 | 0                                   |
|  |           |           |           |                          |                   | Mid 27849.96                | 2076665                | 27655.56      | 2073425                           | 102                            |                    | 22463 | 2076283                       | 1                | 3  | 1 (4)                                 | 218                                 |
|  |           |           |           |                          |                   | High 29050.08               | 2096667                | 28276.8       | 2083779                           | 504                            |                    | 22532 | 2096155                       | 8                | 1  | 0 (0)                                 | 1010                                |
| Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |                                       |                                     |
|  | CC3       | 100       | 120       | 66                       | Downlink & Uplink | Low 26749.92                | 2058331                | 26702.4       | 2057539                           | 0                              | 120                | 22399 | 2057851                       | 0                | 3  | 0 (0)                                 | 6                                   |
|  |           |           |           |                          |                   | Mid 27949.92                | 2078331                | 27755.52      | 2075091                           | 102                            |                    | 22469 | 2078011                       | 8                | 5  | 1 (4)                                 | 222                                 |
|  |           |           |           |                          |                   | High 29150.04               | 2098333                | 28376.76      | 2085445                           | 504                            |                    | 22538 | 2097883                       | 3                | 0  | 1 (4)                                 | 1016                                |
| Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |                                       |                                     |
|  | CC4       | 100       | 120       | 66                       | Downlink & Uplink | Low 26849.88                | 2059997                | 26802.36      | 2059205                           | 0                              | 120                | 22405 | 2059579                       | 7                | 1  | 1 (4)                                 | 10                                  |
|  |           |           |           |                          |                   | Mid 28049.88                | 2079997                | 27855.48      | 2076757                           | 102                            |                    | 22474 | 2079451                       | 3                | 0  | 0 (0)                                 | 204                                 |
|  |           |           |           |                          |                   | High 29250                  | 2099999                | 28476.72      | 2087111                           | 504                            |                    | 22544 | 2099611                       | 10               | 2  | 1 (4)                                 | 1020                                |
| Channel spacing CC4-CC5=99.96 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |                                       |                                     |
|  | CC5       | 100       | 120       | 66                       | Downlink & Uplink | Low 26949.84                | 2061663                | 26902.32      | 2060871                           | 0                              | 120                | 22411 | 2061307                       | 2                | 4  | 1 (4)                                 | 16                                  |
|  |           |           |           |                          |                   | Mid 28149.84                | 2081663                | 27955.44      | 2078423                           | 102                            |                    | 22480 | 2081179                       | 10               | 2  | 0 (0)                                 | 208                                 |
|  |           |           |           |                          |                   | High 29349.96               | 2101665                | 28576.68      | 2088777                           | 504                            |                    | 22550 | 2101339                       | 5                | 5  | 1 (4)                                 | 1026                                |
| Channel spacing CC5-CC6=99.96 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |                                       |                                     |
|  | CC6       | 100       | 120       | 66                       | Downlink & Uplink | Low 27049.8                 | 2063329                | 27002.28      | 2062537                           | 0                              | 120                | 22417 | 2063035                       | 9                | 6  | 1 (4)                                 | 20                                  |
|  |           |           |           |                          |                   | Mid 28249.8                 | 2083329                | 28055.4       | 2080089                           | 102                            |                    | 22486 | 2082907                       | 5                | 1  | 1 (4)                                 | 214                                 |
|  |           |           |           |                          |                   | High 29449.92               | 2103331                | 28676.64      | 2090443                           | 504                            |                    | 22555 | 2102779                       | 0                | 0  | 0 (0)                                 | 1008                                |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.1.11 CA\_n257L

Table 4.3.1.2.3.1.11-1: NR Intra-Band contiguous CA configuration CA\_n257L, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, adjusted channel spacing (default)

| CBW combination                            | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs]) Note 4 | offset Carrier A (SIB1) [PRBs] Note 4 | offset Carrier A (SIB1) [PRBs] Note 4 |
|--|-----------|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|--|--|---------------------------------------|---------------------------------------|
| 100+100<br>+100+100<br>+100+100<br>+100    | CC1       | 100       | 60        | 132                      | Downlink & Uplink | Low 26550                   | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 8                | 11                                     | 1 (8)                                    | 19                                    |                                       |
|  |           |           |           |                          |                   | Mid 27699.96                | 2074165                | 27579         | 2072149                           | 102                            |                    | 22454 | 2073691                       | 6                | 6                                      | 0 (0)                                    | 108                                   |                                       |
|  |           |           |           |                          |                   | High 28853.76               | 2093395                | 28443.36      | 2086555                           | 504                            |                    | 22521 | 2092987                       | 0                | 4                                      | 1 (8)                                    | 516                                   |                                       |
| Channel spacing CC1-CC2=99.36 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                       |                                       |
|  | CC2       | 100       | 60        | 132                      | Downlink & Uplink | Low 26649.36                | 2056655                | 26601.84      | 2055863                           | 0                              | 120                | 22393 | 2056123                       | 8                | 1                                      | 0 (0)                                    | 1                                     |                                       |
|  |           |           |           |                          |                   | Mid 27799.32                | 2075821                | 27678.36      | 2073805                           | 102                            |                    | 22460 | 2075419                       | 6                | 4                                      | 1 (8)                                    | 114                                   |                                       |
|  |           |           |           |                          |                   | High 28953.12               | 2095051                | 28542.72      | 2088211                           | 504                            |                    | 22527 | 2094715                       | 0                | 10                                     | 1 (8)                                    | 522                                   |                                       |
| Channel spacing CC2-CC3=99.36 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                       |                                       |
|  | CC3       | 100       | 60        | 132                      | Downlink & Uplink | Low 26748.72                | 2058311                | 26701.2       | 2057519                           | 0                              | 120                | 22399 | 2057851                       | 8                | 7                                      | 0 (0)                                    | 7                                     |                                       |
|  |           |           |           |                          |                   | Mid 27898.68                | 2077477                | 27777.72      | 2075461                           | 102                            |                    | 22466 | 2077147                       | 6                | 10                                     | 1 (8)                                    | 120                                   |                                       |
|  |           |           |           |                          |                   | High 29052.48               | 2096707                | 28642.08      | 2089867                           | 504                            |                    | 22532 | 2096155                       | 0                | 0                                      | 0 (0)                                    | 504                                   |                                       |
| Channel spacing CC3-CC4=99.36 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                       |                                       |
|  | CC4       | 100       | 60        | 132                      | Downlink & Uplink | Low 26848.08                | 2059967                | 26800.56      | 2059175                           | 0                              | 120                | 22405 | 2059579                       | 8                | 5                                      | 1 (8)                                    | 13                                    |                                       |
|  |           |           |           |                          |                   | Mid 27998.04                | 2079133                | 27877.08      | 2077117                           | 102                            |                    | 22471 | 2078587                       | 6                | 0                                      | 0 (0)                                    | 102                                   |                                       |
|  |           |           |           |                          |                   | High 29151.84               | 2098363                | 28741.44      | 2091523                           | 504                            |                    | 22538 | 2097883                       | 0                | 6                                      | 0 (0)                                    | 510                                   |                                       |
| Channel spacing CC4-CC5=99.36 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                       |                                       |
|  | CC5       | 100       | 60        | 132                      | Downlink & Uplink | Low 26947.44                | 2061623                | 26899.92      | 2060831                           | 0                              | 120                | 22411 | 2061307                       | 8                | 11                                     | 1 (8)                                    | 19                                    |                                       |
|  |           |           |           |                          |                   | Mid 28097.4                 | 2080789                | 27976.44      | 2078773                           | 102                            |                    | 22477 | 2080315                       | 6                | 6                                      | 0 (0)                                    | 108                                   |                                       |
|  |           |           |           |                          |                   | High 29251.2                | 2100019                | 28840.8       | 2093179                           | 504                            |                    | 22544 | 2099611                       | 0                | 4                                      | 1 (8)                                    | 516                                   |                                       |
| Channel spacing CC5-CC6=99.36 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                       |                                       |
|  | CC6       | 100       | 60        | 132                      | Downlink & Uplink | Low 27046.8                 | 2063279                | 26999.28      | 2062487                           | 0                              | 120                | 22416 | 2062747                       | 8                | 1                                      | 0 (0)                                    | 1                                     |                                       |
|  |           |           |           |                          |                   | Mid 28196.76                | 2082445                | 28075.8       | 2080429                           | 102                            |                    | 22483 | 2082043                       | 6                | 4                                      | 1 (8)                                    | 114                                   |                                       |
|  |           |           |           |                          |                   | High 29350.56               | 2101675                | 28940.16      | 2094835                           | 504                            |                    | 22550 | 2101339                       | 0                | 10                                     | 1 (8)                                    | 522                                   |                                       |
| Channel spacing CC6-CC7=99.36 MHz (Note 1) |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                       |                                       |
|  | CC7       | 100       | 60        | 132                      | Downlink & Uplink | Low 27146.16                | 2064935                | 27098.64      | 2064143                           | 0                              | 120                | 22422 | 2064475                       | 8                | 7                                      | 0 (0)                                    | 7                                     |                                       |
|  |           |           |           |                          |                   | Mid 28296.12                | 2084101                | 28175.16      | 2082085                           | 102                            |                    | 22489 | 2083771                       | 6                | 10                                     | 1 (8)                                    | 120                                   |                                       |
|  |           |           |           |                          |                   | High 29449.92               | 2103331                | 29039.52      | 2096491                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                      | 0 (0)                                    | 504                                   |                                       |

Note 1: The adjusted channel spacing is a multiple of subcarrier spacing applicable for both scs=60 kHz and scs=120 kHz and less than the nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

- Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.
- Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.
- Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.11-2: NR Intra-Band contiguous CA configuration CA\_n257L, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, nominal channel spacing (for ACLR, ACS, IBB Testing)**

| CBW combination                         | CC Note 2                                  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |  | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | COR ESET#0 Index (Offset [RBs]) Note 4 | offsetToPoint A (SIB1) [PRBs] Note 4 |
|---|--|-----------|-----------|--------------------------|-------------------|--|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|---------------------------------------|---------------------------------------|--|--------------------------------------|
| 100+100<br>+100+100<br>+100+100<br>+100 | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26550                       | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 8                | 11                                    | 1 (8)                                 | 19                                     |                                      |
|   |  |           |           |                          |                   | Mid  | 27699.96                    | 2074165                | 27579         | 2072149                           | 102                            |                    | 22454 | 2073691                       | 6                | 6                                     | 0 (0)                                 | 108                                    |                                      |
|   |  |           |           |                          |                   | High                                       | 28850.16                    | 2093335                | 28439.76      | 2086495                           | 504                            |                    | 22521 | 2092987                       | 0                | 9                                     | 1 (8)                                 | 521                                    |                                      |
|   |  |           |           |                          |                   | Channel spacing CC1-CC2=99.96 MHz (Note 1) |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |  |                                      |
|   | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26649.96                    | 2056665                | 26602.44      | 2055873                           | 0                              | 120                | 22393 | 2056123                       | 10               | 0                                     | 0 (0)                                 | 0                                      |                                      |
|   |  |           |           |                          |                   | Mid  | 27799.92                    | 2075831                | 27678.96      | 2073815                           | 102                            |                    | 22460 | 2075419                       | 8                | 3                                     | 1 (8)                                 | 113                                    |                                      |
|   |  |           |           |                          |                   | High                                       | 28950.12                    | 2095001                | 28539.72      | 2088161                           | 504                            |                    | 22527 | 2094715                       | 2                | 14                                    | 1 (8)                                 | 526                                    |                                      |
|   | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |  |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |  |                                      |
|   | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26749.92                    | 2058331                | 26702.4       | 2057539                           | 0                              | 120                | 22399 | 2057851                       | 0                | 6                                     | 0 (0)                                 | 6                                      |                                      |
|   |  |           |           |                          |                   | Mid  | 27899.88                    | 2077497                | 27778.92      | 2075481                           | 102                            |                    | 22466 | 2077147                       | 10               | 8                                     | 1 (8)                                 | 118                                    |                                      |
|   |  |           |           |                          |                   | High                                       | 29050.08                    | 2096667                | 28639.68      | 2089827                           | 504                            |                    | 22532 | 2096155                       | 4                | 3                                     | 0 (0)                                 | 507                                    |                                      |
|   | Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |                          |                   |  |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |  |                                      |
|   | CC4  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26849.88                    | 2059997                | 26802.36      | 2059205                           | 0                              | 120                | 22405 | 2059579                       | 2                | 3                                     | 1 (8)                                 | 11                                     |                                      |
|   |  |           |           |                          |                   | Mid  | 27999.84                    | 2079163                | 27878.88      | 2077147                           | 102                            |                    | 22472 | 2078875                       | 0                | 14                                    | 1 (8)                                 | 124                                    |                                      |
|   |  |           |           |                          |                   | High                                       | 29150.04                    | 2098333                | 28739.64      | 2091493                           | 504                            |                    | 22538 | 2097883                       | 6                | 0                                     | 1 (8)                                 | 512                                    |                                      |
|   | Channel spacing CC4-CC5=99.96 MHz (Note 1) |           |           |                          |                   |  |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |  |                                      |
|   | CC5  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26949.84                    | 2061663                | 26902.32      | 2060871                           | 0                              | 120                | 22411 | 2061307                       | 4                | 8                                     | 1 (8)                                 | 16                                     |                                      |
|   |  |           |           |                          |                   | Mid  | 28099.8                     | 2080829                | 27978.84      | 2078813                           | 102                            |                    | 22477 | 2080315                       | 2                | 3                                     | 0 (0)                                 | 105                                    |                                      |
|   |  |           |           |                          |                   | High                                       | 29250                       | 2099999                | 28839.6       | 2093159                           | 504                            |                    | 22544 | 2099611                       | 8                | 5                                     | 1 (8)                                 | 517                                    |                                      |
|   | Channel spacing CC5-CC6=99.96 MHz (Note 1) |           |           |                          |                   |  |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |  |                                      |
|   | CC6  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27049.8                     | 2063329                | 27002.28      | 2062537                           | 0                              | 120                | 22417 | 2063035                       | 6                | 13                                    | 1 (8)                                 | 21                                     |                                      |
|   |  |           |           |                          |                   | Mid  | 28199.76                    | 2082495                | 28078.8       | 2080479                           | 102                            |                    | 22483 | 2082043                       | 4                | 0                                     | 1 (8)                                 | 110                                    |                                      |
|   |  |           |           |                          |                   | High                                       | 29349.96                    | 2101665                | 28939.56      | 2094825                           | 504                            |                    | 22550 | 2101339                       | 10               | 10                                    | 1 (8)                                 | 522                                    |                                      |
|   | Channel spacing CC6-CC7=99.96 MHz (Note 1) |           |           |                          |                   |  |                             |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |  |                                      |
|   | CC7  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27149.76                    | 2064995                | 27102.24      | 2064203                           | 0                              | 120                | 22422 | 2064475                       | 8                | 2                                     | 0 (0)                                 | 2                                      |                                      |
|   |  |           |           |                          |                   | Mid  | 28299.72                    | 2084161                | 28178.76      | 2082145                           | 102                            |                    | 22489 | 2083771                       | 6                | 5                                     | 1 (8)                                 | 115                                    |                                      |
|   |  |           |           |                          |                   | High                                       | 29449.92                    | 2103331                | 29039.52      | 2096491                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                     | 0 (0)                                 | 504                                    |                                      |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4.A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter

$\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.1.11-3: NR Intra-Band contiguous CA configuration CA\_n257L, SCS=120 kHz,  $\Delta F_{\text{Raster}} = 120 \text{ kHz}$ , adjusted channel spacing (default)

| CBW combination                         | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2                | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offsetCarrier A (SIB1) [PRBs] Note 4 | offsetToPointA [PRBs] Note 4 |
|---|-----------|-----------|-----------|--------------------------|-------------------|--|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|--|--|--------------------------------------|------------------------------|
| 100+100<br>+100+100<br>+100+100<br>+100 | CC1       | 100       | 120       | 66                       | Downlink & Uplink | Low 26550                                  | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 10               | 5                                      | 1 (4)                                  | 18                                   |                              |
|   |           |           |           |                          |                   | Mid 27699.96                               | 2074165                | 27505.56      | 2070925                           | 102                            |                    | 22454 | 2073691                       | 3                | 3                                      | 0 (0)                                  | 210                                  |                              |
|   |           |           |           |                          |                   | High 28853.76                              | 2093395                | 28080.48      | 2080507                           | 504                            |                    | 22521 | 2092987                       | 0                | 2                                      | 1 (4)                                  | 1020                                 |                              |
|   |           |           |           |                          |                   | Channel spacing CC1-CC2=99.36 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |                              |
|   | CC2       | 100       | 120       | 66                       | Downlink & Uplink | Low 26649.36                               | 2056655                | 26601.84      | 2055863                           | 0                              | 120                | 22393 | 2056123                       | 10               | 0                                      | 0 (0)                                  | 0                                    |                              |
|   |           |           |           |                          |                   | Mid 27799.32                               | 2075821                | 27604.92      | 2072581                           | 102                            |                    | 22460 | 2075419                       | 3                | 2                                      | 1 (4)                                  | 216                                  |                              |
|   |           |           |           |                          |                   | High 28953.12                              | 2095051                | 28179.84      | 2082163                           | 504                            |                    | 22527 | 2094715                       | 0                | 5                                      | 1 (4)                                  | 1026                                 |                              |
|   |           |           |           |                          |                   | Channel spacing CC2-CC3=99.36 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |                              |
|   | CC3       | 100       | 120       | 66                       | Downlink & Uplink | Low 26748.72                               | 2058311                | 26701.2       | 2057519                           | 0                              | 120                | 22399 | 2057851                       | 10               | 3                                      | 0 (0)                                  | 6                                    |                              |
|   |           |           |           |                          |                   | Mid 27898.68                               | 2077477                | 27704.28      | 2074237                           | 102                            |                    | 22466 | 2077147                       | 3                | 5                                      | 1 (4)                                  | 222                                  |                              |
|   |           |           |           |                          |                   | High 29052.48                              | 2096707                | 28279.2       | 2083819                           | 504                            |                    | 22532 | 2096155                       | 0                | 0                                      | 0 (0)                                  | 1008                                 |                              |
|   |           |           |           |                          |                   | Channel spacing CC3-CC4=99.36 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |                              |
|   | CC4       | 100       | 120       | 66                       | Downlink & Uplink | Low 26848.08                               | 2059967                | 26800.56      | 2059175                           | 0                              | 120                | 22405 | 2059579                       | 10               | 2                                      | 1 (4)                                  | 12                                   |                              |
|   |           |           |           |                          |                   | Mid 27998.04                               | 2079133                | 27803.64      | 2075893                           | 102                            |                    | 22471 | 2078587                       | 3                | 0                                      | 0 (0)                                  | 204                                  |                              |
|   |           |           |           |                          |                   | High 29151.84                              | 2098363                | 28378.56      | 2085475                           | 504                            |                    | 22538 | 2097883                       | 0                | 3                                      | 0 (0)                                  | 1014                                 |                              |
|   |           |           |           |                          |                   | Channel spacing CC4-CC5=99.36 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |                              |
|   | CC5       | 100       | 120       | 66                       | Downlink & Uplink | Low 26947.44                               | 2061623                | 26899.92      | 2060831                           | 0                              | 120                | 22411 | 2061307                       | 10               | 5                                      | 1 (4)                                  | 18                                   |                              |
|   |           |           |           |                          |                   | Mid 28097.4                                | 2080789                | 27903         | 2077549                           | 102                            |                    | 22477 | 2080315                       | 3                | 3                                      | 0 (0)                                  | 210                                  |                              |
|   |           |           |           |                          |                   | High 29251.2                               | 2100019                | 28477.92      | 2087131                           | 504                            |                    | 22544 | 2099611                       | 0                | 2                                      | 1 (4)                                  | 1020                                 |                              |
|   |           |           |           |                          |                   | Channel spacing CC5-CC6=99.36 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |                              |
|   | CC6       | 100       | 120       | 66                       | Downlink & Uplink | Low 27046.8                                | 2063279                | 26999.28      | 2062487                           | 0                              | 120                | 22416 | 2062747                       | 10               | 0                                      | 0 (0)                                  | 0                                    |                              |
|   |           |           |           |                          |                   | Mid 28196.76                               | 2082445                | 28002.36      | 2079205                           | 102                            |                    | 22483 | 2082043                       | 3                | 2                                      | 1 (4)                                  | 216                                  |                              |
|   |           |           |           |                          |                   | High 29350.56                              | 2101675                | 28577.28      | 2088787                           | 504                            |                    | 22550 | 2101339                       | 0                | 5                                      | 1 (4)                                  | 1026                                 |                              |
|   |           |           |           |                          |                   | Channel spacing CC6-CC7=99.36 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |                              |
|   | CC7       | 100       | 120       | 66                       | Downlink & Uplink | Low 27146.16                               | 2064935                | 27098.64      | 2064143                           | 0                              | 120                | 22422 | 2064475                       | 10               | 3                                      | 0 (0)                                  | 6                                    |                              |
|   |           |           |           |                          |                   | Mid 28296.12                               | 2084101                | 28101.72      | 2080861                           | 102                            |                    | 22489 | 2083771                       | 3                | 5                                      | 1 (4)                                  | 222                                  |                              |
|   |           |           |           |                          |                   | High 29449.92                              | 2103331                | 28676.64      | 2090443                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                      | 0 (0)                                  | 1008                                 |                              |

Note 1: The adjusted channel spacing is a multiple of subcarrier spacing applicable for both scs=60 kHz and scs=120 kHz and less than the nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter

$\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.11-4: NR Intra-Band contiguous CA configuration CA\_n257L, SCS=120 kHz,  $\Delta F_{\text{Raster}} = 120 \text{ kHz}$ , nominal channel spacing (for ACLR, ACS, IBB Testing)**

| CBW combination                         | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2                | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offsetCarrier [SIB1] [PRBs] Note 4 |
|---|-----------|-----------|-----------|--------------------------|-------------------|--|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|---------------------------------------|---------------------------------------|------------------------------------|
| 100+100<br>+100+100<br>+100+100<br>+100 | CC1       | 100       | 120       | 66                       | Downlink & Uplink | Low 26550                                  | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 10               | 5                                     | 1 (4)                                 | 18                                 |
|   |           |           |           |                          |                   | Mid 27699.96                               | 2074165                | 27505.56      | 2070925                           | 102                            |                    | 22454 | 2073691                       | 3                | 3                                     | 0 (0)                                 | 210                                |
|   |           |           |           |                          |                   | High 28850.16                              | 2093335                | 28076.88      | 2080447                           | 504                            |                    | 22521 | 2092987                       | 6                | 4                                     | 1 (4)                                 | 1024                               |
|   |           |           |           |                          |                   | Channel spacing CC1-CC2=99.96 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                    |
|   | CC2       | 100       | 120       | 66                       | Downlink & Uplink | Low 26649.96                               | 2056665                | 26602.44      | 2055873                           | 0                              | 120                | 22393 | 2056123                       | 5                | 0                                     | 0 (0)                                 | 0                                  |
|   |           |           |           |                          |                   | Mid 27799.92                               | 2075831                | 27605.52      | 2072591                           | 102                            |                    | 22460 | 2075419                       | 10               | 1                                     | 1 (4)                                 | 214                                |
|   |           |           |           |                          |                   | High 28950.12                              | 2095001                | 28176.84      | 2082113                           | 504                            |                    | 22527 | 2094715                       | 1                | 7                                     | 1 (4)                                 | 1030                               |
|   |           |           |           |                          |                   | Channel spacing CC2-CC3=99.96 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                    |
|   | CC3       | 100       | 120       | 66                       | Downlink & Uplink | Low 26749.92                               | 2058331                | 26702.4       | 2057539                           | 0                              | 120                | 22399 | 2057851                       | 0                | 3                                     | 0 (0)                                 | 6                                  |
|   |           |           |           |                          |                   | Mid 27899.88                               | 2077497                | 27705.48      | 2074257                           | 102                            |                    | 22466 | 2077147                       | 5                | 4                                     | 1 (4)                                 | 220                                |
|   |           |           |           |                          |                   | High 29050.08                              | 2096667                | 28276.8       | 2083779                           | 504                            |                    | 22532 | 2096155                       | 8                | 1                                     | 0 (0)                                 | 1010                               |
|   |           |           |           |                          |                   | Channel spacing CC3-CC4=99.96 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                    |
|   | CC4       | 100       | 120       | 66                       | Downlink & Uplink | Low 26849.88                               | 2059997                | 26802.36      | 2059205                           | 0                              | 120                | 22405 | 2059579                       | 7                | 1                                     | 1 (4)                                 | 10                                 |
|   |           |           |           |                          |                   | Mid 27999.84                               | 2079163                | 27805.44      | 2075923                           | 102                            |                    | 22472 | 2078875                       | 0                | 7                                     | 1 (4)                                 | 226                                |
|   |           |           |           |                          |                   | High 29150.04                              | 2098333                | 28376.76      | 2085445                           | 504                            |                    | 22538 | 2097883                       | 3                | 0                                     | 1 (4)                                 | 1016                               |
|   |           |           |           |                          |                   | Channel spacing CC4-CC5=99.96 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                    |
|   | CC5       | 100       | 120       | 66                       | Downlink & Uplink | Low 26949.84                               | 2061663                | 26902.32      | 2060871                           | 0                              | 120                | 22411 | 2061307                       | 2                | 4                                     | 1 (4)                                 | 16                                 |
|   |           |           |           |                          |                   | Mid 28099.8                                | 2080829                | 27905.4       | 2077589                           | 102                            |                    | 22477 | 2080315                       | 7                | 1                                     | 0 (0)                                 | 206                                |
|   |           |           |           |                          |                   | High 29250                                 | 2099999                | 28476.72      | 2087111                           | 504                            |                    | 22544 | 2099611                       | 10               | 2                                     | 1 (4)                                 | 1020                               |
|   |           |           |           |                          |                   | Channel spacing CC5-CC6=99.96 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                    |
|   | CC6       | 100       | 120       | 66                       | Downlink & Uplink | Low 27049.8                                | 2063329                | 27002.28      | 2062537                           | 0                              | 120                | 22417 | 2063035                       | 9                | 6                                     | 1 (4)                                 | 20                                 |
|   |           |           |           |                          |                   | Mid 28199.76                               | 2082495                | 28005.36      | 2079255                           | 102                            |                    | 22483 | 2082043                       | 2                | 0                                     | 1 (4)                                 | 212                                |
|   |           |           |           |                          |                   | High 29349.96                              | 2101665                | 28576.68      | 2088777                           | 504                            |                    | 22550 | 2101339                       | 5                | 5                                     | 1 (4)                                 | 1026                               |
|   |           |           |           |                          |                   | Channel spacing CC6-CC7=99.96 MHz (Note 1) |                        |               |                                   |                                |                    |       |                               |                  |                                       |                                       |                                    |
|   | CC7       | 100       | 120       | 66                       | Downlink & Uplink | Low 27149.76                               | 2064995                | 27102.24      | 2064203                           | 0                              | 120                | 22422 | 2064475                       | 4                | 1                                     | 0 (0)                                 | 2                                  |
|   |           |           |           |                          |                   | Mid 28299.72                               | 2084161                | 28105.32      | 2080921                           | 102                            |                    | 22489 | 2083771                       | 9                | 2                                     | 1 (4)                                 | 216                                |
|   |           |           |           |                          |                   | High 29449.92                              | 2103331                | 28676.64      | 2090443                           | 504                            |                    | 22555 | 2102779                       | 0                | 0                                     | 0 (0)                                 | 1008                               |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4.A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter

$\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.1.12 CA\_n257M

Table 4.3.1.2.3.1.12-1: NR Intra-Band contiguous CA configuration CA\_n257M, SCS=60 kHz,  $\Delta F_{\text{Raster}}$  60 kHz, adjusted channel spacing (default)

| CBW combination                             | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |          | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN    | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs]) Note 4 | offset Carrier CORE SET#0 [RBs] Note 3 | offset Carrier CORE SET#0 [RBs] Note 4 |
|---|-----------|-----------|-----------|--------------------------|-------------------|----------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|---------|-------------------------------|------------------|--|--|--|--|
| 100+100<br>+100+100<br>+100+100<br>+100+100 | CC1       | 100       | 60        | 132                      | Downlink & Uplink | Low      | 26550                       | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388   | 2054683                       | 8                | 11                                     | 1 (8)                                    | 19                                     |  |
|   |           |           |           |                          |                   | Mid      | 27649.92                    | 2073331                | 27528.96      | 2071315                           | 102                            |                    | 22451   | 2072827                       | 0                | 4                                      | 0 (0)                                    | 106                                    |  |
|   |           |           |           |                          |                   | High     | 28754.4                     | 2091739                | 28344         | 2084899                           | 504                            |                    | 22515   | 2091259                       | 0                | 6                                      | 0 (0)                                    | 510                                    |  |
| Channel spacing CC1-CC2=99.36 MHz (Note 1)  |           |           |           |                          |                   |          |                             |                        |               |                                   |                                |                    |         |                               |                  |  |  |  |  |
|   | CC2       | 100       | 60        | 132                      | Downlink & Uplink | Low      | 26649.36                    | 2056655                | 26601.84      | 2055863                           | 0                              | 120                | 22393   | 2056123                       | 8                | 1                                      | 0 (0)                                    | 1                                      |  |
|   |           |           |           |                          |                   | Mid      | 27749.28                    | 2074987                | 27628.32      | 2072971                           | 102                            |                    | 22457   | 2074555                       | 0                | 2                                      | 1 (8)                                    | 112                                    |  |
|   |           |           |           |                          |                   | High     | 28853.76                    | 2093395                | 28443.36      | 2086555                           | 504                            |                    | 22521   | 2092987                       | 0                | 4                                      | 1 (8)                                    | 516                                    |  |
| Channel spacing CC2-CC3=99.36 MHz (Note 1)  |           |           |           |                          |                   |          |                             |                        |               |                                   |                                |                    |         |                               |                  |  |  |  |  |
|   | CC3       | 100       | 60        | 132                      | Downlink & Uplink | Low      | 26748.72                    | 2058311                | 26701.2       | 2057519                           | 0                              | 120                | 22399   | 2057851                       | 8                | 7                                      | 0 (0)                                    | 7                                      |  |
|   |           |           |           |                          |                   | Mid      | 27848.64                    | 2076643                | 27727.68      | 2074627                           | 102                            |                    | 22463   | 2076283                       | 0                | 8                                      | 1 (8)                                    | 118                                    |  |
|   |           |           |           |                          |                   | High     | 28953.12                    | 2095051                | 28542.72      | 2088211                           | 504                            |                    | 22527   | 2094715                       | 0                | 10                                     | 1 (8)                                    | 522                                    |  |
| Channel spacing CC3-CC4=99.36 MHz (Note 1)  |           |           |           |                          |                   |          |                             |                        |               |                                   |                                |                    |         |                               |                  |  |  |  |  |
|   | CC4       | 100       | 60        | 132                      | Downlink & Uplink | Low      | 26848.08                    | 2059967                | 26800.56      | 2059175                           | 0                              | 120                | 22405   | 2059579                       | 8                | 5                                      | 1 (8)                                    | 13                                     |  |
|   |           |           |           |                          |                   | Mid      | 27948                       | 2078299                | 27827.04      | 2076283                           | 102                            |                    | 22469   | 2078011                       | 0                | 14                                     | 1 (8)                                    | 124                                    |  |
|   |           |           |           |                          |                   | High     | 29052.48                    | 2096707                | 28642.08      | 2089867                           | 504                            |                    | 22532   | 2096155                       | 0                | 0                                      | 0 (0)                                    | 504                                    |  |
| Channel spacing CC4-CC5=99.36 MHz (Note 1)  |           |           |           |                          |                   |          |                             |                        |               |                                   |                                |                    |         |                               |                  |  |  |  |  |
|   | CC5       | 100       | 60        | 132                      | Downlink & Uplink | Low      | 26947.44                    | 2061623                | 26899.92      | 2060831                           | 0                              | 120                | 22411   | 2061307                       | 8                | 11                                     | 1 (8)                                    | 19                                     |  |
|   |           |           |           |                          |                   | Mid      | 28047.36                    | 2079955                | 27926.4       | 2077939                           | 102                            |                    | 22474   | 2079451                       | 0                | 4                                      | 0 (0)                                    | 106                                    |  |
|   |           |           |           |                          |                   | High     | 29151.84                    | 2098363                | 28741.44      | 2091523                           | 504                            |                    | 22538   | 2097883                       | 0                | 6                                      | 0 (0)                                    | 510                                    |  |
| Channel spacing CC5-CC6=99.36 MHz (Note 1)  |           |           |           |                          |                   |          |                             |                        |               |                                   |                                |                    |         |                               |                  |  |  |  |  |
|   | CC6       | 100       | 60        | 132                      | Downlink & Uplink | Low      | 27046.8                     | 2063279                | 26999.28      | 2062487                           | 0                              | 120                | 22416   | 2062747                       | 8                | 1                                      | 0 (0)                                    | 1                                      |  |
|   |           |           |           |                          |                   | Mid      | 28146.72                    | 2081611                | 28025.76      | 2079595                           | 102                            |                    | 22480   | 2081179                       | 0                | 2                                      | 1 (8)                                    | 112                                    |  |
|   |           |           |           |                          |                   | High     | 29251.2                     | 2100019                | 28840.8       | 2093179                           | 504                            |                    | 22544   | 2099611                       | 0                | 4                                      | 1 (8)                                    | 516                                    |  |
| Channel spacing CC6-CC7=99.36 MHz (Note 1)  |           |           |           |                          |                   |          |                             |                        |               |                                   |                                |                    |         |                               |                  |  |  |  |  |
|   | CC7       | 100       | 60        | 132                      | Downlink & Uplink | Low      | 27146.16                    | 2064935                | 27098.64      | 2064143                           | 0                              | 120                | 22422   | 2064475                       | 8                | 7                                      | 0 (0)                                    | 7                                      |  |
|   |           |           |           |                          |                   | Mid      | 28246.08                    | 2083267                | 28125.12      | 2081251                           | 102                            |                    | 22486   | 2082907                       | 0                | 8                                      | 1 (8)                                    | 118                                    |  |
|   |           |           |           |                          |                   | High     | 29350.56                    | 2101675                | 28940.16      | 2094835                           | 504                            |                    | 22550   | 2101339                       | 0                | 10                                     | 1 (8)                                    | 522                                    |  |
| Channel spacing CC7-CC8=99.36 MHz (Note 1)  |           |           |           |                          |                   |          |                             |                        |               |                                   |                                |                    |         |                               |                  |  |  |  |  |
| CC8   | 100       | 60        | 132       | Downlink                 | Low               | 27245.52 | 2066591                     | 27198                  | 2065799       | 0                                 | 120                            | 22428              | 2066203 | 8                             | 5                | 1 (8)                                  | 13                                       |  |  |

|   |  |  |  |  |  | &<br>Uplink | Mid  | 28345.44 | 2084923 | 28224.48 | 2082907 | 102 |  | 22492 | 2084635 | 0 | 14 | 1 (8) | 124 |  |
|---|--|--|--|--|--|-------------|------|----------|---------|----------|---------|-----|--|-------|---------|---|----|-------|-----|--|
|   |  |  |  |  |  |             | High | 29449.92 | 2103331 | 29039.52 | 2096491 | 504 |  | 22555 | 2102779 | 0 | 0  | 0 (0) | 504 |  |
| Note 1: The adjusted channel spacing is a multiple of subcarrier spacing applicable for both scs=60 kHz and scs=120 kHz and less than the nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.   |  |  |  |  |  |             |      |          |         |          |         |     |  |       |         |   |    |       |     |  |
| Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  |  |  |  |  |  |             |      |          |         |          |         |     |  |       |         |   |    |       |     |  |
| Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |  |  |  |  |  |             |      |          |         |          |         |     |  |       |         |   |    |       |     |  |
| Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |  |  |  |  |  |             |      |          |         |          |         |     |  |       |         |   |    |       |     |  |

**Table 4.3.1.2.3.1.12-2: NR Intra-Band contiguous CA configuration CA\_n257M, SCS=60 kHz,  $\Delta F_{\text{Raster}} = 60 \text{ kHz}$ , nominal channel spacing (for ACLR, ACS, IBB Testing)**

| CBW combination | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2                | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs]) Note 4 | COR ESET #0 Index (Offset [RBs]) Note 3 | offsetToCarrier [PRBs] Note 4 |
|-----------------|-----------|-----------|-----------|--------------------------|-------------------|--|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|------------------|--|--|---|-------------------------------|
| 100+100         | CC1       | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26550                  | 2054999       | 26502.48                          | 2054207                        | 0                  | 120  | 22388                         | 2054683          | 8                                      | 11                                       | 1 (8)                                   | 19                            |
| +100+100        |           |           |           |                          |                   | Mid  | 27649.92               | 2073331       | 27528.96                          | 2071315                        | 102                |      | 22451                         | 2072827          | 0                                      | 4  | 0 (0)                                   | 106                           |
| +100+100        |           |           |           |                          |                   | High                                       | 28750.2                | 2091669       | 28339.8                           | 2084829                        | 504                |      | 22515                         | 2091259          | 10                                     | 3  | 1 (8)                                   | 515                           |
| +100+100        |           |           |           |                          |                   | Channel spacing CC1-CC2=99.96 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                               |
|                 | CC2       | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26649.96               | 2056665       | 26602.44                          | 2055873                        | 0                  | 120  | 22393                         | 2056123          | 10                                     | 0  | 0 (0)                                   | 0                             |
|                 |           |           |           |                          |                   | Mid  | 27749.88               | 2074997       | 27628.92                          | 2072981                        | 102                |      | 22457                         | 2074555          | 2                                      | 1  | 1 (8)                                   | 111                           |
|                 |           |           |           |                          |                   | High                                       | 28850.16               | 2093335       | 28439.76                          | 2086495                        | 504                |      | 22521                         | 2092987          | 0                                      | 9  | 1 (8)                                   | 521                           |
|                 |           |           |           |                          |                   | Channel spacing CC2-CC3=99.96 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                               |
|                 | CC3       | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26749.92               | 2058331       | 26702.4                           | 2057539                        | 0                  | 120  | 22399                         | 2057851          | 0                                      | 6  | 0 (0)                                   | 6                             |
|                 |           |           |           |                          |                   | Mid  | 27849.84               | 2076663       | 27728.88                          | 2074647                        | 102                |      | 22463                         | 2076283          | 4                                      | 6  | 1 (8)                                   | 116                           |
|                 |           |           |           |                          |                   | High                                       | 28950.12               | 2095001       | 28539.72                          | 2088161                        | 504                |      | 22527                         | 2094715          | 2                                      | 14                                       | 1 (8)                                   | 526                           |
|                 |           |           |           |                          |                   | Channel spacing CC3-CC4=99.96 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                               |
|                 | CC4       | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26849.88               | 2059997       | 26802.36                          | 2059205                        | 0                  | 120  | 22405                         | 2059579          | 2                                      | 3  | 1 (8)                                   | 11                            |
|                 |           |           |           |                          |                   | Mid  | 27949.8                | 2078329       | 27828.84                          | 2076313                        | 102                |      | 22469                         | 2078011          | 6                                      | 11                                       | 1 (8)                                   | 121                           |
|                 |           |           |           |                          |                   | High                                       | 29050.08               | 2096667       | 28639.68                          | 2089827                        | 504                |      | 22532                         | 2096155          | 4                                      | 3  | 0 (0)                                   | 507                           |
|                 |           |           |           |                          |                   | Channel spacing CC4-CC5=99.96 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                               |
|                 | CC5       | 100       | 60        | 132                      | Downlink & Uplink | Low  | 26949.84               | 2061663       | 26902.32                          | 2060871                        | 0                  | 120  | 22411                         | 2061307          | 4                                      | 8  | 1 (8)                                   | 16                            |
|                 |           |           |           |                          |                   | Mid  | 28049.76               | 2079995       | 27928.8                           | 2077979                        | 102                |      | 22474                         | 2079451          | 8                                      | 0  | 0 (0)                                   | 102                           |
|                 |           |           |           |                          |                   | High                                       | 29150.04               | 2098333       | 28739.64                          | 2091493                        | 504                |      | 22538                         | 2097883          | 6                                      | 0  | 1 (8)                                   | 512                           |
|                 |           |           |           |                          |                   | Channel spacing CC5-CC6=99.96 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                               |
|                 | CC6       | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27049.8                | 2063329       | 27002.28                          | 2062537                        | 0                  | 120  | 22417                         | 2063035          | 6                                      | 13                                       | 1 (8)                                   | 21                            |
|                 |           |           |           |                          |                   | Mid  | 28149.72               | 2081661       | 28028.76                          | 2079645                        | 102                |      | 22480                         | 2081179          | 10                                     | 5  | 0 (0)                                   | 107                           |
|                 |           |           |           |                          |                   | High                                       | 29250                  | 2099999       | 28839.6                           | 2093159                        | 504                |      | 22544                         | 2099611          | 8                                      | 5  | 1 (8)                                   | 517                           |
|                 |           |           |           |                          |                   | Channel spacing CC6-CC7=99.96 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                               |
|                 | CC7       | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27149.76               | 2064995       | 27102.24                          | 2064203                        | 0                  | 120  | 22422                         | 2064475          | 8                                      | 2  | 0 (0)                                   | 2                             |
|                 |           |           |           |                          |                   | Mid  | 28249.68               | 2083327       | 28128.72                          | 2081311                        | 102                |      | 22486                         | 2082907          | 0                                      | 3  | 1 (8)                                   | 113                           |
|                 |           |           |           |                          |                   | High                                       | 29349.96               | 2101665       | 28939.56                          | 2094825                        | 504                |      | 22550                         | 2101339          | 10                                     | 10                                       | 1 (8)                                   | 522                           |
|                 |           |           |           |                          |                   | Channel spacing CC7-CC8=99.96 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |                  |  |  |   |                               |
|                 | CC8       | 100       | 60        | 132                      | Downlink &        | Low  | 27249.72               | 2066661       | 27202.2                           | 2065869                        | 0                  | 120  | 22428                         | 2066203          | 10                                     | 7  | 0 (0)                                   | 7                             |
|                 |           |           |           |                          |                   | Mid  | 28349.64               | 2084993       | 28228.68                          | 2082977                        | 102                |      | 22492                         | 2084635          | 2                                      | 8  | 1 (8)                                   | 118                           |

|   |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
|---|--|--|--|--|--------|------|----------|---------|----------|---------|-----|--|-------|---------|---|---|-------|-----|
|   |  |  |  |  | Uplink | High | 29449.92 | 2103331 | 29039.52 | 2096491 | 504 |  | 22555 | 2102779 | 0 | 0 | 0 (0) | 504 |
| Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
| Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
| Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
| Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |

Table 4.3.1.2.3.1.12-3: NR Intra-Band contiguous CA configuration CA\_n257M, SCS=120 kHz,  $\Delta F_{\text{Raster}} = 120 \text{ kHz}$ , adjusted channel spacing (default)

| CBW combination                             | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs]) Note 4 | offset oPoint A (SIB1) [PRBs] Note 4 |
|---|-----------|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|------------------|--|--|--------------------------------------|
| 100+100<br>+100+100<br>+100+100<br>+100+100 | CC1       | 100       | 120       | 66                       | Downlink & Uplink | Low 26550                   | 2054999                | 26502.48      | 2054207                           | 0                              | 120                | 22388 | 2054683                       | 10               | 5                                      | 1 (4)                                    | 18                                   |
|   |           |           |           |                          |                   | Mid 27650.04                | 2073333                | 27455.64      | 2070093                           | 102                            |                    | 22451 | 2072827                       | 11               | 1                                      | 0 (0)                                    | 206                                  |
|   |           |           |           |                          |                   | High 28754.4                | 2091739                | 27981.12      | 2078851                           | 504                            |                    | 22515 | 2091259                       | 0                | 3                                      | 0 (0)                                    | 1014                                 |
| Channel spacing CC1-CC2=99.36 MHz (Note 1)  |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |
| Channel spacing CC2-CC3=99.36 MHz (Note 1)  |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |
| Channel spacing CC3-CC4=99.36 MHz (Note 1)  |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |
| Channel spacing CC4-CC5=99.36 MHz (Note 1)  |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |
| Channel spacing CC5-CC6=99.36 MHz (Note 1)  |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |
| Channel spacing CC6-CC7=99.36 MHz (Note 1)  |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |
| Channel spacing CC7-CC8=99.36 MHz (Note 1)  |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |
| Channel spacing CC8-CC9=99.36 MHz (Note 1)  |           |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |                  |  |  |                                      |

- Note 1: The adjusted channel spacing is a multiple of subcarrier spacing applicable for both scs=60 kHz and scs=120 kHz and less than the nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.
- Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.
- Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta f_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.
- Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.1.12-4: NR Intra-Band contiguous CA configuration CA\_n257M, SCS=120 kHz,  $\Delta F_{\text{Raster}} = 120 \text{ kHz}$ , nominal channel spacing (for ACLR, ACS, IBB Testing)**

| CBW combination | CC Note 2 | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2                | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | CORE SET#1 Offset from $N_{\text{start BWP}}^{\text{start}}$ [RBs] | CORE ESET #0 Index (Offset [RBs]) Note 1 | offsetToPoint A (SIB1) [PRBs] Note 1 |      |
|-----------------|-----------|-----------|-----------|--------------------------|-------------------|--|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|------|-------------------------------|------------------|--|--|--------------------------------------|------|
| 100+100         | CC1       | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26550                  | 2054999       | 26502.48                          | 2054207                         | 0                  | 120  | 22388                         | 2054683          | 10   | 6  | 1 (4)                                | 18   |
| +100+100        |           |           |           |                          |                   | Mid  | 27999.6                | 2079159       | 27805.2                           | 2075919                         | 102                |      | 22472                         | 2078875          | 2  | 12                                       | 1 (4)                                | 226  |
| +100+100        |           |           |           |                          |                   | High                                       | 28750.2                | 2091669       | 27976.92                          | 2078781                         | 504                |      | 22515                         | 2091259          | 11   | 6  | 1 (4)                                | 1018 |
| +100+100        |           |           |           |                          |                   | Channel spacing CC1-CC2=99.96 MHz (Note 1) |                        |               |                                   |                                 |                    |      |                               |                  |  |  |                                      |      |
|                 | CC2       | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26649.96               | 2056665       | 26602.44                          | 2055873                         | 0                  | 120  | 22393                         | 2056123          | 5  | 0  | 0 (0)                                | 0    |
|                 |           |           |           |                          |                   | Mid  | 28099.56               | 2080825       | 27905.16                          | 2077585                         | 102                |      | 22477                         | 2080315          | 9  | 6  | 0 (0)                                | 206  |
|                 |           |           |           |                          |                   | High                                       | 28850.16               | 2093335       | 28076.88                          | 2080447                         | 504                |      | 22521                         | 2092987          | 6  | 6  | 1 (4)                                | 1024 |
|                 |           |           |           |                          |                   | Channel spacing CC2-CC3=99.96 MHz (Note 1) |                        |               |                                   |                                 |                    |      |                               |                  |  |  |                                      |      |
|                 | CC3       | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26749.92               | 2058331       | 26702.4                           | 2057539                         | 0                  | 120  | 22399                         | 2057851          | 0  | 6  | 0 (0)                                | 6    |
|                 |           |           |           |                          |                   | Mid  | 28199.52               | 2082491       | 28005.12                          | 2079251                         | 102                |      | 22483                         | 2082043          | 4  | 0  | 1 (4)                                | 212  |
|                 |           |           |           |                          |                   | High                                       | 28950.12               | 2095001       | 28176.84                          | 2082113                         | 504                |      | 22527                         | 2094715          | 1  | 12                                       | 1 (4)                                | 1030 |
|                 |           |           |           |                          |                   | Channel spacing CC3-CC4=99.96 MHz (Note 1) |                        |               |                                   |                                 |                    |      |                               |                  |  |  |                                      |      |
|                 | CC4       | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26849.88               | 2059997       | 26802.36                          | 2059205                         | 0                  | 120  | 22405                         | 2059579          | 7  | 6  | 1 (4)                                | 10   |
|                 |           |           |           |                          |                   | Mid  | 28299.48               | 2084157       | 28105.08                          | 2080917                         | 102                |      | 22489                         | 2083771          | 11   | 6  | 1 (4)                                | 216  |
|                 |           |           |           |                          |                   | High                                       | 29050.08               | 2096667       | 28276.8                           | 2083779                         | 504                |      | 22532                         | 2096155          | 8  | 6  | 0 (0)                                | 1010 |
|                 |           |           |           |                          |                   | Channel spacing CC4-CC5=99.96 MHz (Note 1) |                        |               |                                   |                                 |                    |      |                               |                  |  |  |                                      |      |
|                 | CC5       | 100       | 120       | 66                       | Downlink & Uplink | Low  | 26949.84               | 2061663       | 26902.32                          | 2060871                         | 0                  | 120  | 22411                         | 2061307          | 2  | 6  | 1 (4)                                | 16   |
|                 |           |           |           |                          |                   | Mid  | 28399.44               | 2085823       | 28205.04                          | 2082583                         | 102                |      | 22495                         | 2085499          | 6  | 6  | 1 (4)                                | 222  |
|                 |           |           |           |                          |                   | High                                       | 29150.04               | 2098333       | 28376.76                          | 2085445                         | 504                |      | 22538                         | 2097883          | 3  | 0  | 1 (4)                                | 1016 |
|                 |           |           |           |                          |                   | Channel spacing CC5-CC6=99.96 MHz (Note 1) |                        |               |                                   |                                 |                    |      |                               |                  |  |  |                                      |      |
|                 | CC6       | 100       | 120       | 66                       | Downlink & Uplink | Low  | 27049.8                | 2063329       | 27002.28                          | 2062537                         | 0                  | 120  | 22417                         | 2063035          | 9  | 6  | 1 (4)                                | 20   |
|                 |           |           |           |                          |                   | Mid  | 28499.4                | 2087489       | 28305                             | 2084249                         | 102                |      | 22500                         | 2086939          | 1  | 0  | 0 (0)                                | 204  |
|                 |           |           |           |                          |                   | High                                       | 29250                  | 2099999       | 28476.72                          | 2087111                         | 504                |      | 22544                         | 2099611          | 10   | 6  | 1 (4)                                | 1020 |
|                 |           |           |           |                          |                   | Channel spacing CC6-CC7=99.96 MHz (Note 1) |                        |               |                                   |                                 |                    |      |                               |                  |  |  |                                      |      |
|                 | CC7       | 100       | 120       | 66                       | Downlink & Uplink | Low  | 27149.76               | 2064995       | 27102.24                          | 2064203                         | 0                  | 120  | 22422                         | 2064475          | 4  | 6  | 0 (0)                                | 2    |
|                 |           |           |           |                          |                   | Mid  | 28599.36               | 2089155       | 28404.96                          | 2085915                         | 102                |      | 22506                         | 2088667          | 8  | 6  | 0 (0)                                | 208  |
|                 |           |           |           |                          |                   | High                                       | 29349.96               | 2101665       | 28576.68                          | 2088777                         | 504                |      | 22550                         | 2101339          | 5  | 6  | 1 (4)                                | 1026 |
|                 |           |           |           |                          |                   | Channel spacing CC7-CC8=99.96 MHz (Note 1) |                        |               |                                   |                                 |                    |      |                               |                  |  |  |                                      |      |
|                 | CC8       | 100       | 120       | 66                       | Downlink &        | Low  | 27249.72               | 2066661       | 27202.2                           | 2065869                         | 0                  | 120  | 22428                         | 2066203          | 11   | 6  | 0 (0)                                | 6    |
|                 |           |           |           |                          |                   | Mid  | 28699.32               | 2090821       | 28504.92                          | 2087581                         | 102                |      | 22512                         | 2090395          | 3  | 6  | 1 (4)                                | 214  |

|  |  |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |      |
|--|--|--|--|--|--|--------|------|----------|---------|----------|---------|-----|--|-------|---------|---|---|-------|------|
|  |  |  |  |  |  | Uplink | High | 29449.92 | 2103331 | 28676.64 | 2090443 | 504 |  | 22555 | 2102779 | 0 | 0 | 0 (0) | 1008 |
| Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers. |  |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |      |
| Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.   |  |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |      |

4.3.1.2.3.2 NR Intra-band contiguous CA configurations for CA\_n258

4.3.1.2.3.2.1 CA\_n258B

**Table 4.3.1.2.3.2.1-1: Void**

**Table 4.3.1.2.3.2.1-2: NR Intra-Band contiguous CA configuration CA\_n258B (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing**

| CBW combination | CC  | CBW [MHz] | SCS [kHz] | carrier Band width [PRBs ] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz ] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs] ) Note 4 | CORE ESET #0 Index (Offset [RBs] ) Note 4 | offsetToPoint A (SIB 1) [PRBs] Note 4 |
|-----------------|---|-----------|-----------|----------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|---------------------|------|-------------------------------|-----------|--|---|---|---------------------------------------|
| 50+400          | CC1   | 50        | 120       | 32                         | Downlink & Uplink | Low                         | 24275.04               | 2017083       | 24252                             | 2016699                        | 0                   | 120  | 22257                         | 2016955   | 8                                      | 0   | 0 (0)                                     | 0                                     |
|                 |   |           |           |                            |                   | Mid                         | 25674.96               | 2040415       | 25505.04                          | 2037583                        | 102                 |      | 22338                         | 2040283   | 6                                      | 0   | 0 (0)                                     | 204                                   |
|                 |   |           |           |                            |                   | High                        | 27083.04               | 2063883       | 26334.24                          | 2051403                        | 504                 |      | 22420                         | 2063899   | 8                                      | 2   | 1 (4)                                     | 1020                                  |
|                 | Channel spacing CC1-CC2=216.96 MHz (Note 1) |           |           |                            |                   |                             |                        |               |                                   |                                |                     |      |                               |           |  |   |   |                                       |
|                 | CC2   | 400       | 120       | 264                        | Downlink & Uplink | Low                         | 24492                  | 2020699       | 24301.92                          | 2017531                        | 0                   | 120  | 22260                         | 2017819   | 0                                      | 2   | 0 (0)                                     | 4                                     |
|                 |   |           |           |                            |                   | Mid                         | 25891.92               | 2044031       | 25554.96                          | 2038415                        | 102                 |      | 22341                         | 2041147   | 10                                     | 1   | 0 (0)                                     | 206                                   |
|                 |   |           |           |                            |                   | High                        | 27300                  | 2067499       | 26384.16                          | 2052235                        | 504                 |      | 22423                         | 2064763   | 0                                      | 4   | 1 (4)                                     | 1024                                  |
|                 | CC1   | 100       | 120       | 66                         | Downlink & Uplink | Low                         | 24300                  | 2017499       | 24252.48                          | 2016707                        | 0                   | 120  | 22257                         | 2016955   | 4                                      | 0   | 0 (0)                                     | 0                                     |
|                 |   |           |           |                            |                   | Mid                         | 25674.96               | 2040415       | 25480.56                          | 2037175                        | 102                 |      | 22337                         | 2039995   | 6                                      | 1   | 1 (4)                                     | 214                                   |
|                 |   |           |           |                            |                   | High                        | 27057.48               | 2063457       | 26284.2                           | 2050569                        | 504                 |      | 22417                         | 2063035   | 5                                      | 1   | 1 (4)                                     | 1018                                  |
|                 | Channel spacing CC1-CC2=242.52 MHz (Note 1) |           |           |                            |                   |                             |                        |               |                                   |                                |                     |      |                               |           |  |   |   |                                       |
|                 | CC2   | 400       | 120       | 264                        | Downlink & Uplink | Low                         | 24542.52               | 2021541       | 24352.44                          | 2018373                        | 0                   | 120  | 22263                         | 2018683   | 11                                     | 2   | 0 (0)                                     | 4                                     |
|                 |   |           |           |                            |                   | Mid                         | 25917.48               | 2044457       | 25580.52                          | 2038841                        | 102                 |      | 22343                         | 2041723   | 1                                      | 4   | 1 (4)                                     | 220                                   |
|                 |   |           |           |                            |                   | High                        | 27300                  | 2067499       | 26384.16                          | 2052235                        | 504                 |      | 22423                         | 2064763   | 0                                      | 4   | 1 (4)                                     | 1024                                  |
| 200+400         | CC1   | 200       | 120       | 132                        | Downlink & Uplink | Low                         | 24350.04               | 2018333       | 24255                             | 2016749                        | 0                   | 120  | 22258                         | 2017243   | 7                                      | 6   | 1 (4)                                     | 20                                    |
|                 |   |           |           |                            |                   | Mid                         | 25674.96               | 2040415       | 25433.04                          | 2036383                        | 102                 |      | 22334                         | 2039131   | 6                                      | 2   | 0 (0)                                     | 208                                   |
|                 |   |           |           |                            |                   | High                        | 27005.04               | 2062583       | 26184.24                          | 2048903                        | 504                 |      | 22411                         | 2061307   | 10                                     | 2   | 0 (0)                                     | 1012                                  |
|                 | Channel spacing CC1-CC2=294.96 MHz (Note 1) |           |           |                            |                   |                             |                        |               |                                   |                                |                     |      |                               |           |  |   |   |                                       |
|                 | CC2   | 400       | 120       | 264                        | Downlink & Uplink | Low                         | 24645                  | 2023249       | 24454.92                          | 2020081                        | 0                   | 120  | 22269                         | 2020411   | 9                                      | 3   | 0 (0)                                     | 6                                     |
|                 |   |           |           |                            |                   | Mid                         | 25969.92               | 2045331       | 25632.96                          | 2039715                        | 102                 |      | 22346                         | 2042587   | 8                                      | 3   | 1 (4)                                     | 218                                   |
|                 |   |           |           |                            |                   | High                        | 27300                  | 2067499       | 26384.16                          | 2052235                        | 504                 |      | 22423                         | 2064763   | 0                                      | 4   | 1 (4)                                     | 1024                                  |
| 400+400         | CC1   | 400       | 120       | 264                        | Downlink & Uplink | Low                         | 24450                  | 2019999       | 24259.92                          | 2016831                        | 0                   | 120  | 22258                         | 2017243   | 2                                      | 3   | 1 (4)                                     | 14                                    |
|                 |   |           |           |                            |                   | Mid                         | 25674.96               | 2040415       | 25338                             | 2034799                        | 102                 |      | 22329                         | 2037691   | 6                                      | 4   | 1 (4)                                     | 220                                   |
|                 |   |           |           |                            |                   | High                        | 26900.04               | 2060833       | 25984.2                           | 2045569                        | 504                 |      | 22400                         | 2058139   | 9                                      | 5   | 1 (4)                                     | 1026                                  |

| Channel spacing CC1-CC2=399.96 MHz (Note 1) |     |     |     |                         |      |          |         |          |         |     |     |       |         |   |   |       |      |  |
|---|-----|-----|-----|-------------------------|------|----------|---------|----------|---------|-----|-----|-------|---------|---|---|-------|------|--|
| CC2   | 400 | 120 | 264 | Downlink<br>&<br>Uplink | Low  | 24849.96 | 2026665 | 24659.88 | 2023497 | 0   | 120 | 22281 | 2023867 | 5 | 1 | 1 (4) | 10   |  |
|   |     |     |     |                         | Mid  | 26074.92 | 2047081 | 25737.96 | 2041465 | 102 |     | 22352 | 2044315 | 9 | 2 | 1 (4) | 216  |  |
|   |     |     |     |                         | High | 27300    | 2067499 | 26384.16 | 2052235 | 504 |     | 22423 | 2064763 | 0 | 4 | 1 (4) | 1024 |  |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta f_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.2.2 CA\_n258C

FFS

## 4.3.1.2.3.2.3

## CA\_n258D

Table 4.3.1.2.3.2.3-1: NR Intra-Band contiguous CA configuration CA\_n258D (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

| CBW combination | CC  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | Offset ToPointA (SIB1) [PRBs] Note 4 |
|-----------------|---|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|-----------|---------------------------------------|---------------------------------------|--------------------------------------|
| 50+200          | CC1   | 50        | 60        | 66                       | Downlink & Uplink | Low  | 24275.04                    | 2017083                | 24251.28      | 2016687                           | 0                              | 120                | 22257 | 2016955                       | 4         | 2                                     | 0 (0)                                 | 2                                    |
|                 |   |           |           |                          |                   | Mid  | 25774.92                    | 2042081                | 25677.72      | 2040461                           | 102                            |                    | 22344 | 2042011                       | 2         | 7                                     | 0 (0)                                 | 109                                  |
|                 |   |           |           |                          |                   | High | 27278.76                    | 2067145                | 26892.12      | 2060701                           | 504                            |                    | 22431 | 2067067                       | 6         | 6                                     | 0 (0)                                 | 510                                  |
|                 | Channel spacing CC1-CC2=121.2 MHz (Note 1)  |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                                       |                                      |
|                 | CC2   | 200       | 60        | 264                      | Downlink & Uplink | Low  | 24396.24                    | 2019103                | 24301.2       | 2017519                           | 0                              | 120                | 22260 | 2017819                       | 0         | 5                                     | 0 (0)                                 | 5                                    |
|                 |   |           |           |                          |                   | Mid  | 25896.12                    | 2044101                | 25727.64      | 2041293                           | 102                            |                    | 22347 | 2042875                       | 10        | 1                                     | 1 (8)                                 | 111                                  |
|                 |   |           |           |                          |                   | High | 27399.96                    | 2069165                | 26942.04      | 2061533                           | 504                            |                    | 22434 | 2067931                       | 2         | 1                                     | 1 (8)                                 | 513                                  |
|                 | CC1   | 100       | 60        | 132                      | Downlink & Uplink | Low  | 24300                       | 2017499                | 24252.48      | 2016707                           | 0                              | 120                | 22257 | 2016955                       | 8         | 0                                     | 0 (0)                                 | 0                                    |
|                 |   |           |           |                          |                   | Mid  | 25774.92                    | 2042081                | 25653.96      | 2040065                           | 102                            |                    | 22343 | 2041723                       | 2         | 8                                     | 1 (8)                                 | 118                                  |
|                 |   |           |           |                          |                   | High | 27252.48                    | 2066707                | 26842.08      | 2059867                           | 504                            |                    | 22428 | 2066203                       | 0         | 4                                     | 0 (0)                                 | 508                                  |
|                 | Channel spacing CC1-CC2=147.48 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                                       |                                      |
|                 | CC2   | 200       | 60        | 264                      | Downlink & Uplink | Low  | 24447.48                    | 2019957                | 24352.44      | 2018373                           | 0                              | 120                | 22263 | 2018683                       | 10        | 5                                     | 0 (0)                                 | 5                                    |
|                 |   |           |           |                          |                   | Mid  | 25922.4                     | 2044539                | 25753.92      | 2041731                           | 102                            |                    | 22349 | 2043451                       | 4         | 13                                    | 1 (8)                                 | 123                                  |
|                 |   |           |           |                          |                   | High | 27399.96                    | 2069165                | 26942.04      | 2061533                           | 504                            |                    | 22434 | 2067931                       | 2         | 1                                     | 1 (8)                                 | 513                                  |
| 200+200         | CC1   | 200       | 60        | 264                      | Downlink & Uplink | Low  | 24350.04                    | 2018333                | 24255         | 2016749                           | 0                              | 120                | 22258 | 2017243                       | 2         | 13                                    | 1 (8)                                 | 21                                   |
|                 |   |           |           |                          |                   | Mid  | 25774.92                    | 2042081                | 25606.44      | 2039273                           | 102                            |                    | 22340 | 2040859                       | 2         | 2                                     | 1 (8)                                 | 112                                  |
|                 |   |           |           |                          |                   | High | 27200.04                    | 2065833                | 26742.12      | 2058201                           | 504                            |                    | 22423 | 2064763                       | 10        | 14                                    | 1 (8)                                 | 526                                  |
|                 | Channel spacing CC1-CC2=199.92 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                                       |                                      |
|                 | CC2   | 200       | 60        | 264                      | Downlink & Uplink | Low  | 24549.96                    | 2021665                | 24454.92      | 2020081                           | 0                              | 120                | 22269 | 2020411                       | 6         | 7                                     | 0 (0)                                 | 7                                    |
|                 |   |           |           |                          |                   | Mid  | 25974.84                    | 2045413                | 25806.36      | 2042605                           | 102                            |                    | 22352 | 2044315                       | 6         | 12                                    | 1 (8)                                 | 122                                  |
|                 |   |           |           |                          |                   | High | 27399.96                    | 2069165                | 26942.04      | 2061533                           | 504                            |                    | 22434 | 2067931                       | 2         | 1                                     | 1 (8)                                 | 513                                  |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.2.3-2: NR Intra-Band contiguous CA configuration CA\_n258D (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

| CBW combination                             | CC  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | Offset ToPointA (SIB1) [PRBs] Note 4 | offset ToPo intA (SIB1) [PRBs] Note 4 |
|---|---|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|---------------------------------------|
| 50+200                                      | CC1   | 50        | 120       | 32                       | Downlink & Uplink | Low                         | 24275.04               | 2017083       | 24252                             | 2016699                        | 0                  | 120  | 22257                         | 2016955   | 8                                      | 0                                      | 0 (0)                                | 0                                     |
|   |   |           |           |                          |                   | Mid                         | 25775.04               | 2042083       | 25605.12                          | 2039251                        | 102                |      | 22344                         | 2042011   | 0                                      | 3                                      | 0 (0)                                | 210                                   |
|   |   |           |           |                          |                   | High                        | 27278.04               | 2067133       | 26529.24                          | 2054653                        | 504                |      | 22431                         | 2067067   | 3                                      | 3                                      | 0 (0)                                | 1014                                  |
|   | Channel spacing CC1-CC2=121.92 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |                                       |
|   | CC2   | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 24396.96               | 2019115       | 24301.92                          | 2017531                        | 0                  | 120  | 22260                         | 2017819   | 0                                      | 2                                      | 0 (0)                                | 4                                     |
|   |   |           |           |                          |                   | Mid                         | 25896.96               | 2044115       | 25655.04                          | 2040083                        | 102                |      | 22347                         | 2042875   | 4                                      | 0                                      | 1 (4)                                | 212                                   |
|   |   |           |           |                          |                   | High                        | 27399.96               | 2069165       | 26579.16                          | 2055485                        | 504                |      | 22434                         | 2067931   | 7                                      | 0                                      | 1 (4)                                | 1016                                  |
|   | CC1   | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 24300                  | 2017499       | 24252.48                          | 2016707                        | 0                  | 120  | 22257                         | 2016955   | 4                                      | 0                                      | 0 (0)                                | 0                                     |
|   |   |           |           |                          |                   | Mid                         | 25775.04               | 2042083       | 25580.64                          | 2038843                        | 102                |      | 22343                         | 2041723   | 0                                      | 4                                      | 1 (4)                                | 220                                   |
|   |   |           |           |                          |                   | High                        | 27252.48               | 2066707       | 26479.2                           | 2053819                        | 504                |      | 22428                         | 2066203   | 0                                      | 2                                      | 0 (0)                                | 1012                                  |
| Channel spacing CC1-CC2=147.48 MHz (Note 1) |   |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |                                       |
| 200+200                                     | CC2   | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 24447.48               | 2019957       | 24352.44                          | 2018373                        | 0                  | 120  | 22263                         | 2018683   | 11                                     | 2                                      | 0 (0)                                | 4                                     |
|   |   |           |           |                          |                   | Mid                         | 25922.52               | 2044541       | 25680.6                           | 2040509                        | 102                |      | 22349                         | 2043451   | 7                                      | 6                                      | 1 (4)                                | 224                                   |
|   |   |           |           |                          |                   | High                        | 27399.96               | 2069165       | 26579.16                          | 2055485                        | 504                |      | 22434                         | 2067931   | 7                                      | 0                                      | 1 (4)                                | 1016                                  |
| 200+200                                     | CC1   | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 24350.04               | 2018333       | 24255                             | 2016749                        | 0                  | 120  | 22258                         | 2017243   | 7                                      | 6                                      | 1 (4)                                | 20                                    |
|   |   |           |           |                          |                   | Mid                         | 25775.04               | 2042083       | 25533.12                          | 2038051                        | 102                |      | 22340                         | 2040859   | 0                                      | 1                                      | 1 (4)                                | 214                                   |
|   |   |           |           |                          |                   | High                        | 27200.04               | 2065833       | 26379.24                          | 2052153                        | 504                |      | 22423                         | 2064763   | 5                                      | 7                                      | 1 (4)                                | 1030                                  |
|   | Channel spacing CC1-CC2=199.92 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |                                       |
|   | CC2   | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 24549.96               | 2021665       | 24454.92                          | 2020081                        | 0                  | 120  | 22269                         | 2020411   | 9                                      | 3                                      | 0 (0)                                | 6                                     |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.2.4      CA\_n258E

FFS

4.3.1.2.3.2.5      CA\_n258F

FFS

## 4.3.1.2.3.2.6

## CA\_n258G

Table 4.3.1.2.3.2.6-1: NR Intra-Band contiguous CA configuration CA\_n258G (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

| CBW combination | CC   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs] | SS block SCSS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | Offset ToPointA (SIB1) [PRBs] Note 4 |
|-----------------|--|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|---------------------------------|---------------------|-------|-------------------------------|-----------|--|--|--------------------------------------|
| 50+100          | CC1  | 50        | 60        | 66                       | Downlink & Uplink | Low  | 24275.04                    | 2017083                | 24251.28      | 2016687                           | 0                               | 120                 | 22257 | 2016955                       | 4         | 2                                      | 0 (0)                                  | 2                                    |
|                 |  |           |           |                          |                   | Mid  | 25824.96                    | 2042915                | 25727.76      | 2041295                           | 102                             |                     | 22347 | 2042875                       | 8         | 1                                      | 1 (8)                                  | 111                                  |
|                 |  |           |           |                          |                   | High | 27376.32                    | 2068771                | 26989.68      | 2062327                           | 504                             |                     | 22437 | 2068795                       | 0         | 7                                      | 1 (8)                                  | 519                                  |
|                 | Channel spacing CC1-CC2=73.68 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                 |                     |       |                               |           |  |  |                                      |
|                 | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 24348.72                    | 2018311                | 24301.2       | 2017519                           | 0                               | 120                 | 22260 | 2017819                       | 0         | 5                                      | 0 (0)                                  | 5                                    |
|                 |  |           |           |                          |                   | Mid  | 25898.64                    | 2044143                | 25777.68      | 2042127                           | 102                             |                     | 22350 | 2043739                       | 4         | 4                                      | 1 (8)                                  | 114                                  |
|                 |  |           |           |                          |                   | High | 27450                       | 2069999                | 27039.6       | 2063159                           | 504                             |                     | 22440 | 2069659                       | 8         | 9                                      | 1 (8)                                  | 521                                  |
| 100+100         | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 24300                       | 2017499                | 24252.48      | 2016707                           | 0                               | 120                 | 22257 | 2016955                       | 8         | 0                                      | 0 (0)                                  | 0                                    |
|                 |  |           |           |                          |                   | Mid  | 25824.96                    | 2042915                | 25704         | 2040899                           | 102                             |                     | 22346 | 2042587                       | 8         | 10                                     | 1 (8)                                  | 120                                  |
|                 |  |           |           |                          |                   | High | 27350.04                    | 2068333                | 26939.64      | 2061493                           | 504                             |                     | 22434 | 2067931                       | 6         | 4                                      | 1 (8)                                  | 516                                  |
|                 | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                 |                     |       |                               |           |  |  |                                      |
|                 | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 24399.96                    | 2019165                | 24352.44      | 2018373                           | 0                               | 120                 | 22263 | 2018683                       | 10        | 5                                      | 0 (0)                                  | 5                                    |
|                 |  |           |           |                          |                   | Mid  | 25924.92                    | 2044581                | 25803.96      | 2042565                           | 102                             |                     | 22352 | 2044315                       | 10        | 15                                     | 1 (8)                                  | 125                                  |
|                 |  |           |           |                          |                   | High | 27450                       | 2069999                | 27039.6       | 2063159                           | 504                             |                     | 22440 | 2069659                       | 8         | 9                                      | 1 (8)                                  | 521                                  |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.2.6-2: NR Intra-Band contiguous CA configuration CA\_n258G (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

| CBW combination | CC  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range                                      | Carrier centre [MHz] Note 2               | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs] | SS block SCSS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 1 | Offset ToPointA (SIB1) [PRBs] Note 1 |      |  |
|-----------------|-----|-----------|-----------|--------------------------|--|---|------------------------|---------------|-----------------------------------|---------------------------------|---------------------|-------|-------------------------------|-----------|--|--|--------------------------------------|------|--|
| 50+100          | CC1 | 50        | 120       | 32                       | Downlink & Uplink                          | Low                                       | 24275.04               | 2017083       | 24252                             | 2016699                         | 0                   | 120   | 22257                         | 2016955   | 8                                      | 0                                      | 0 (0)                                | 0    |  |
|                 |     |           |           |                          |  | Mid                                       | 25824.96               | 2042915       | 25655.04                          | 2040083                         | 102                 |       | 22347                         | 2042875   | 4                                      | 0                                      | 1 (4)                                | 212  |  |
|                 |     |           |           |                          |  | High                                      | 27375.6                | 2068759       | 26626.8                           | 2056279                         | 504                 |       | 22437                         | 2068795   | 6                                      | 3                                      | 1 (4)                                | 1022 |  |
|                 |     |           |           |                          |  | Channel spacing CC1-CC2=74.4 MHz (Note 1) |                        |               |                                   |                                 |                     |       |                               |           |  |  |                                      |      |  |
|                 |     |           |           |                          |  | Low                                       | 24349.44               | 2018323       | 24301.92                          | 2017531                         | 0                   | 120   | 22260                         | 2017819   | 0                                      | 2                                      | 0 (0)                                | 4    |  |
|                 |     |           |           |                          |  | Mid                                       | 25899.36               | 2044155       | 25704.96                          | 2040915                         | 102                 |       | 22350                         | 2043739   | 8                                      | 1                                      | 1 (4)                                | 214  |  |
|                 |     |           |           |                          |  | High                                      | 27450                  | 2069999       | 26676.72                          | 2057111                         | 504                 |       | 22440                         | 2069659   | 10                                     | 4                                      | 1 (4)                                | 1024 |  |
| 100+100         |     |           |           |                          | Downlink & Uplink                          | Low                                       | 24300                  | 2017499       | 24252.48                          | 2016707                         | 0                   | 120   | 22257                         | 2016955   | 4                                      | 0                                      | 0 (0)                                | 0    |  |
|                 |     |           |           |                          |  | Mid                                       | 25824.96               | 2042915       | 25630.56                          | 2039675                         | 102                 |       | 22346                         | 2042587   | 4                                      | 5                                      | 1 (4)                                | 222  |  |
|                 |     |           |           |                          |  | High                                      | 27350.04               | 2068333       | 26576.76                          | 2055445                         | 504                 |       | 22434                         | 2067931   | 3                                      | 2                                      | 1 (4)                                | 1020 |  |
|                 |     |           |           |                          | Channel spacing CC1-CC2=99.96 MHz (Note 1) |   |                        |               |                                   |                                 |                     |       |                               |           |  |  |                                      |      |  |
|                 |     |           |           |                          | Low  | 24399.96                                  | 2019165                | 24352.44      | 2018373                           | 0                               | 120                 | 22263 | 2018683                       | 11        | 2                                      | 0 (0)                                  | 4                                    |      |  |
|                 |     |           |           |                          | Mid  | 25924.92                                  | 2044581                | 25730.52      | 2041341                           | 102                             |                     | 22352 | 2044315                       | 11        | 7                                      | 1 (4)                                  | 226                                  |      |  |
|                 |     |           |           |                          | High                                       | 27450                                     | 2069999                | 26676.72      | 2057111                           | 504                             |                     | 22440 | 2069659                       | 10        | 4                                      | 1 (4)                                  | 1024                                 |      |  |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.2.7

## CA\_n258H

Table 4.3.1.2.3.2.7-1: NR Intra-Band contiguous CA configuration CA\_n258H (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

| CBW combination  | CC   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs] | SS block SCSS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | Offset ToPointA (SIB1) [PRBs] Note 4 |
|--|--|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|---------------------------------|---------------------|-------|-------------------------------|-----------|--|--|--------------------------------------|
| 50+100 +100  | CC1  | 50        | 60        | 66                       | Downlink & Uplink | Low  | 24275.04                    | 2017083                | 24251.28      | 2016687                           | 0                               | 120                 | 22257 | 2016955                       | 4         | 2                                      | 0 (0)                                  | 2                                    |
|  |  |           |           |                          |                   | Mid  | 25774.92                    | 2042081                | 25677.72      | 2040461                           | 102                             |                     | 22344 | 2042011                       | 2         | 7                                      | 0 (0)                                  | 109                                  |
|  |  |           |           |                          |                   | High | 27276.36                    | 2067105                | 26889.72      | 2060661                           | 504                             |                     | 22431 | 2067067                       | 10        | 1                                      | 1 (8)                                  | 513                                  |
|  | Channel spacing CC1-CC2=73.68 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                 |                     |       |                               |           |  |  |                                      |
|  | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 24348.72                    | 2018311                | 24301.2       | 2017519                           | 0                               | 120                 | 22260 | 2017819                       | 0         | 5                                      | 0 (0)                                  | 5                                    |
|  |  |           |           |                          |                   | Mid  | 25848.6                     | 2043309                | 25727.64      | 2041293                           | 102                             |                     | 22347 | 2042875                       | 10        | 1                                      | 1 (8)                                  | 111                                  |
|  |  |           |           |                          |                   | High | 27350.04                    | 2068333                | 26939.64      | 2061493                           | 504                             |                     | 22434 | 2067931                       | 6         | 4                                      | 1 (8)                                  | 516                                  |
|  | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                 |                     |       |                               |           |  |  |                                      |
|  | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 24448.68                    | 2019977                | 24401.16      | 2019185                           | 0                               | 120                 | 22266 | 2019547                       | 2         | 2                                      | 1 (8)                                  | 10                                   |
|  |  |           |           |                          |                   | Mid  | 25948.56                    | 2044975                | 25827.6       | 2042959                           | 102                             |                     | 22353 | 2044603                       | 0         | 7                                      | 1 (8)                                  | 117                                  |
|  |  |           |           |                          |                   | High | 27450                       | 2069999                | 27039.6       | 2063159                           | 504                             |                     | 22440 | 2069659                       | 8         | 9                                      | 1 (8)                                  | 521                                  |
| 100+100 +100   | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 24300                       | 2017499                | 24252.48      | 2016707                           | 0                               | 120                 | 22257 | 2016955                       | 8         | 0                                      | 0 (0)                                  | 0                                    |
|  |  |           |           |                          |                   | Mid  | 25774.92                    | 2042081                | 25653.96      | 2040065                           | 102                             |                     | 22343 | 2041723                       | 2         | 8                                      | 1 (8)                                  | 118                                  |
|  |  |           |           |                          |                   | High | 27250.08                    | 2066667                | 26839.68      | 2059827                           | 504                             |                     | 22428 | 2066203                       | 4         | 7                                      | 0 (0)                                  | 511                                  |
|  | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                 |                     |       |                               |           |  |  |                                      |
|  | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 24399.96                    | 2019165                | 24352.44      | 2018373                           | 0                               | 120                 | 22263 | 2018683                       | 10        | 5                                      | 0 (0)                                  | 5                                    |
|  |  |           |           |                          |                   | Mid  | 25874.88                    | 2043747                | 25753.92      | 2041731                           | 102                             |                     | 22349 | 2043451                       | 4         | 13                                     | 1 (8)                                  | 123                                  |
|  |  |           |           |                          |                   | High | 27350.04                    | 2068333                | 26939.64      | 2061493                           | 504                             |                     | 22434 | 2067931                       | 6         | 4                                      | 1 (8)                                  | 516                                  |
|  | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                 |                     |       |                               |           |  |  |                                      |
|  | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 24499.92                    | 2020831                | 24452.4       | 2020039                           | 0                               | 120                 | 22269 | 2020411                       | 0         | 3                                      | 1 (8)                                  | 11                                   |
|  |  |           |           |                          |                   | Mid  | 25974.84                    | 2045413                | 25853.88      | 2043397                           | 102                             |                     | 22354 | 2044891                       | 6         | 2                                      | 0 (0)                                  | 104                                  |
|  |  |           |           |                          |                   | High | 27450                       | 2069999                | 27039.6       | 2063159                           | 504                             |                     | 22440 | 2069659                       | 8         | 9                                      | 1 (8)                                  | 521                                  |
| <p>Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.</p> <p>Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.</p> <p>Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> |  |           |           |                          |                   |      |                             |                        |               |                                   |                                 |                     |       |                               |           |  |  |                                      |

Table 4.3.1.2.3.2.7-2: NR Intra-Band contiguous CA configuration CA\_n258H (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

| CBW combination | CC   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz]<br>Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs] | SS block SC S [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs]<br>Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |      |
|-----------------|--|-----------|-----------|--------------------------|-------------------|--------------------------------|------------------------|---------------|-----------------------------------|---------------------------------|---------------------|------|-------------------------------|-----------|---|--|--------------------------------------|------|
| 50+100<br>+100  | CC1  | 50        | 120       | 32                       | Downlink & Uplink | Low                            | 24275.04               | 2017083       | 24252                             | 2016699                         | 0                   | 120  | 22257                         | 2016955   | 8   | 0                                      | 0 (0)                                | 0    |
|                 |  |           |           |                          |                   | Mid                            | 25775.04               | 2042083       | 25605.12                          | 2039251                         | 102                 |      | 22344                         | 2042011   | 0   | 3                                      | 0 (0)                                | 210  |
|                 |  |           |           |                          |                   | High                           | 27275.64               | 2067093       | 26526.84                          | 2054613                         | 504                 |      | 22431                         | 2067067   | 11  | 0                                      | 1 (4)                                | 1016 |
|                 | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |           |           |                          |                   |                                |                        |               |                                   |                                 |                     |      |                               |           |   |  |                                      |      |
|                 | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low                            | 24349.44               | 2018323       | 24301.92                          | 2017531                         | 0                   | 120  | 22260                         | 2017819   | 0   | 2                                      | 0 (0)                                | 4    |
|                 |  |           |           |                          |                   | Mid                            | 25849.44               | 2043323       | 25655.04                          | 2040083                         | 102                 |      | 22347                         | 2042875   | 4   | 0                                      | 1 (4)                                | 212  |
|                 |  |           |           |                          |                   | High                           | 27350.04               | 2068333       | 26576.76                          | 2055445                         | 504                 |      | 22434                         | 2067931   | 3   | 2                                      | 1 (4)                                | 1020 |
|                 | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |                                |                        |               |                                   |                                 |                     |      |                               |           |   |  |                                      |      |
|                 | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low                            | 24449.4                | 2019989       | 24401.88                          | 2019197                         | 0                   | 120  | 22266                         | 2019547   | 7   | 0                                      | 1 (4)                                | 8    |
|                 |  |           |           |                          |                   | Mid                            | 25949.4                | 2044989       | 25755                             | 2041749                         | 102                 |      | 22353                         | 2044603   | 11  | 2                                      | 1 (4)                                | 216  |
|                 |  |           |           |                          |                   | High                           | 27450                  | 2069999       | 26676.72                          | 2057111                         | 504                 |      | 22440                         | 2069659   | 10  | 4                                      | 1 (4)                                | 1024 |
| 100+100<br>+100 | CC1  | 100       | 120       | 66                       | Downlink & Uplink | Low                            | 24300                  | 2017499       | 24252.48                          | 2016707                         | 0                   | 120  | 22257                         | 2016955   | 4   | 0                                      | 0 (0)                                | 0    |
|                 |  |           |           |                          |                   | Mid                            | 25775.04               | 2042083       | 25580.64                          | 2038843                         | 102                 |      | 22343                         | 2041723   | 0   | 4                                      | 1 (4)                                | 220  |
|                 |  |           |           |                          |                   | High                           | 27250.08               | 2066667       | 26476.8                           | 2053779                         | 504                 |      | 22428                         | 2066203   | 8   | 3                                      | 0 (0)                                | 1014 |
|                 | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |                                |                        |               |                                   |                                 |                     |      |                               |           |   |  |                                      |      |
|                 | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low                            | 24399.96               | 2019165       | 24352.44                          | 2018373                         | 0                   | 120  | 22263                         | 2018683   | 11  | 2                                      | 0 (0)                                | 4    |
|                 |  |           |           |                          |                   | Mid                            | 25875                  | 2043749       | 25680.6                           | 2040509                         | 102                 |      | 22349                         | 2043451   | 7   | 6                                      | 1 (4)                                | 224  |
|                 |  |           |           |                          |                   | High                           | 27350.04               | 2068333       | 26576.76                          | 2055445                         | 504                 |      | 22434                         | 2067931   | 3   | 2                                      | 1 (4)                                | 1020 |
|                 | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |                                |                        |               |                                   |                                 |                     |      |                               |           |   |  |                                      |      |
|                 | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low                            | 24499.92               | 2020831       | 24452.4                           | 2020039                         | 0                   | 120  | 22269                         | 2020411   | 6   | 1                                      | 1 (4)                                | 10   |
|                 |  |           |           |                          |                   | Mid                            | 25974.96               | 2045415       | 25780.56                          | 2042175                         | 102                 |      | 22354                         | 2044891   | 2   | 1                                      | 0 (0)                                | 206  |
|                 |  |           |           |                          |                   | High                           | 27450                  | 2069999       | 26676.72                          | 2057111                         | 504                 |      | 22440                         | 2069659   | 10  | 4                                      | 1 (4)                                | 1024 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.2.8      CA\_n258I

FFS

4.3.1.2.3.2.9      CA\_n258J

FFS

4.3.1.2.3.2.10     CA\_n258K

FFS

4.3.1.2.3.2.11     CA\_n258L

FFS

4.3.1.2.3.2.12     CA\_n258M

FFS

4.3.1.2.3.3      FFS

4.3.1.2.3.4      NR Intra-band contiguous CA configurations for CA\_n260

4.3.1.2.3.4.1     CA\_n260B

Editor's note: CBW=400 MHz for NR band n260 is only supported by for SCS 120kHz. Test frequencies for CA\_n260B are currently limited to SCS 120kHz for all CCs.  
Test frequencies for mixed numerologies between CCs is FFS.

Table 4.3.1.2.3.4.1-1: NR Intra-Band contiguous CA configuration CA\_n260B (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

| CBW combination | CC  | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |      |
|-----------------|---|-----------|-----------|-------------------------|-------------------|-----------------------------|------------------------|---------------|----------------------------------|--------------------------------|--------------------|------|------------------------------|-----------|--|--|--------------------------------------|------|
| 50+400          | CC1   | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 37025.04               | 2229583       | 37002                            | 2229199                        | 0                  | 120  | 22995                        | 2229499   | 6                                      | 2                                      | 0 (0)                                | 4    |
|                 |   |           |           |                         |                   | Mid                         | 38300.04               | 2250833       | 38130.12                         | 2248001                        | 102                |      | 23069                        | 2250811   | 1                                      | 1                                      | 1 (4)                                | 214  |
|                 |   |           |           |                         |                   | High                        | 39582.96               | 2272215       | 38834.16                         | 2259735                        | 504                |      | 23143                        | 2272123   | 2                                      | 2                                      | 0 (0)                                | 1012 |
|                 | Channel spacing CC1-CC2=216.96 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC2   | 400       | 120       | 264                     | Downlink & Uplink | Low                         | 37242                  | 2233199       | 37051.92                         | 2230031                        | 0                  | 120  | 22998                        | 2230363   | 10                                     | 3                                      | 0 (0)                                | 6    |
|                 |   |           |           |                         |                   | Mid                         | 38517                  | 2254449       | 38180.04                         | 2248833                        | 102                |      | 23072                        | 2251675   | 5                                      | 2                                      | 1 (4)                                | 216  |
|                 |   |           |           |                         |                   | High                        | 39799.92               | 2275831       | 38884.08                         | 2260567                        | 504                |      | 23146                        | 2272987   | 6                                      | 3                                      | 0 (0)                                | 1014 |
|                 | CC1   | 100       | 120       | 66                      | Downlink & Uplink | Low                         | 37050                  | 2229999       | 37002.48                         | 2229207                        | 0                  | 120  | 22995                        | 2229499   | 2                                      | 2                                      | 0 (0)                                | 4    |
|                 |   |           |           |                         |                   | Mid                         | 38300.04               | 2250833       | 38105.64                         | 2247593                        | 102                |      | 23068                        | 2250523   | 1                                      | 6                                      | 1 (4)                                | 224  |
|                 |   |           |           |                         |                   | High                        | 39557.4                | 2271789       | 38784.12                         | 2258901                        | 504                |      | 23140                        | 2271259   | 11                                     | 0                                      | 0 (0)                                | 1008 |
| 100+400         | Channel spacing CC1-CC2=242.52 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC2   | 400       | 120       | 264                     | Downlink & Uplink | Low                         | 37292.52               | 2234041       | 37102.44                         | 2230873                        | 0                  | 120  | 23001                        | 2231227   | 9                                      | 0                                      | 1 (4)                                | 8    |
|                 |   |           |           |                         |                   | Mid                         | 38542.56               | 2254875       | 38205.6                          | 2249259                        | 102                |      | 23073                        | 2251963   | 8                                      | 0                                      | 0 (0)                                | 204  |
|                 |   |           |           |                         |                   | High                        | 39799.92               | 2275831       | 38884.08                         | 2260567                        | 504                |      | 23146                        | 2272987   | 6                                      | 3                                      | 0 (0)                                | 1014 |
|                 | CC1   | 200       | 120       | 132                     | Downlink & Uplink | Low                         | 37100.04               | 2230833       | 37005                            | 2229249                        | 0                  | 120  | 22995                        | 2229499   | 5                                      | 0                                      | 0 (0)                                | 0    |
|                 |   |           |           |                         |                   | Mid                         | 38300.04               | 2250833       | 38058.12                         | 2246801                        | 102                |      | 23065                        | 2249659   | 1                                      | 3                                      | 1 (4)                                | 218  |
|                 |   |           |           |                         |                   | High                        | 39504.96               | 2270915       | 38684.16                         | 2257235                        | 504                |      | 23135                        | 2269819   | 4                                      | 6                                      | 1 (4)                                | 1028 |
|                 | Channel spacing CC1-CC2=294.96 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC2   | 400       | 120       | 264                     | Downlink & Uplink | Low                         | 37395                  | 2235749       | 37204.92                         | 2232581                        | 0                  | 120  | 23007                        | 2232955   | 7                                      | 1                                      | 1 (4)                                | 10   |
|                 |   |           |           |                         |                   | Mid                         | 38595                  | 2255749       | 38258.04                         | 2250133                        | 102                |      | 23076                        | 2252827   | 3                                      | 0                                      | 0 (0)                                | 204  |
|                 |   |           |           |                         |                   | High                        | 39799.92               | 2275831       | 38884.08                         | 2260567                        | 504                |      | 23146                        | 2272987   | 6                                      | 3                                      | 0 (0)                                | 1014 |
| 400+400         | CC1   | 400       | 120       | 264                     | Downlink & Uplink | Low                         | 37200                  | 2232499       | 37009.92                         | 2229331                        | 0                  | 120  | 22996                        | 2229787   | 0                                      | 5                                      | 1 (4)                                | 18   |
|                 |   |           |           |                         |                   | Mid                         | 38300.04               | 2250833       | 37963.08                         | 2245217                        | 102                |      | 23059                        | 2247931   | 1                                      | 1                                      | 0 (0)                                | 206  |
|                 |   |           |           |                         |                   | High                        | 39399.96               | 2269165       | 38484.12                         | 2253901                        | 504                |      | 23123                        | 2266363   | 3                                      | 1                                      | 1 (4)                                | 1018 |
|                 | Channel spacing CC1-CC2=399.96 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC2   | 400       | 120       | 264                     | Downlink & Uplink | Low                         | 37599.96               | 2239165       | 37409.88                         | 2235997                        | 0                  | 120  | 23019                        | 2236411   | 3                                      | 3                                      | 1 (4)                                | 14   |
|                 |   |           |           |                         |                   | Mid                         | 38700                  | 2257499       | 38363.04                         | 2251883                        | 102                |      | 23083                        | 2254843   | 4                                      | 7                                      | 1 (4)                                | 226  |
|                 |   |           |           |                         |                   | High                        | 39799.92               | 2275831       | 38884.08                         | 2260567                        | 504                |      | 23146                        | 2272987   | 6                                      | 3                                      | 0 (0)                                | 1014 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4.A.1 for the channel bandwidths of the two respective NR component carriers.

- Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.
- Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.
- Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

#### 4.3.1.2.3.4.2 CA\_n260C

Editor's note: CBW=400 MHz for NR band n260 is only supported by for SCS 120kHz. Test frequencies for CA\_n260C are currently limited to SCS 120kHz for all CCs.  
Test frequencies for mixed numerologies between CCs is FFS.

Table 4.3.1.2.3.4.2-1: NR Intra-Band contiguous CA configuration CA\_n260C (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing

| CBW combination                             | CC  | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2                 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier COR ESET #0 [RBs] Note 3 | Offset Carrier COR ESET #0 Index (Offset [RBs]) Note 4 | COR ESET #0 Index (Offset [RBs]) Note 4 | offset ToPortA (SIB1) [PRBs] Note 4 |  |
|---|---|-----------|-----------|-------------------------|-------------------|---|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|-----------|---|--|---|-------------------------------------|--|
| 50+400 +400                                 | CC1   | 50        | 120       | 32                      | Downlink & Uplink | Low   | 37025.04               | 2229583       | 37002                             | 2229199                         | 0                  | 120   | 22995                         | 2229499   | 6                                       | 2  | 0 (0)                                   | 4                                   |  |
|   |   |           |           |                         |                   | Mid   | 38100                  | 2247499       | 37930.08                          | 2244667                         | 102                |       | 23057                         | 2247355   | 0                                       | 0  | 0 (0)                                   | 204                                 |  |
|   |   |           |           |                         |                   | High  | 39183                  | 2265549       | 38434.2                           | 2253069                         | 504                |       | 23120                         | 2265499   | 11                                      | 3  | 0 (0)                                   | 1014                                |  |
|   |   |           |           |                         |                   | Channel spacing CC1-CC2=216.96 MHz (Note 1) |                        |               |                                   |                                 |                    |       |                               |           |   |  |   |                                     |  |
|   | CC2   | 400       | 120       | 264                     |                   | Low   | 37242                  | 2233199       | 37051.92                          | 2230031                         | 0                  | 120   | 22998                         | 2230363   | 10                                      | 3  | 0 (0)                                   | 6                                   |  |
|   |   |           |           |                         |                   | Mid   | 38316.96               | 2251115       | 37980                             | 2245499                         | 102                |       | 23060                         | 2248219   | 4                                       | 1  | 0 (0)                                   | 206                                 |  |
|   |   |           |           |                         |                   | High  | 39399.96               | 2269165       | 38484.12                          | 2253901                         | 504                |       | 23123                         | 2266363   | 3                                       | 1  | 1 (4)                                   | 1018                                |  |
|   | Channel spacing CC2-CC3=399.96 MHz (Note 1) |           |           |                         |                   |   |                        |               |                                   |                                 |                    |       |                               |           |   |  |   |                                     |  |
|   | CC3   | 400       | 120       | 264                     |                   | Low   | 37641.96               | 2239865       | 37451.88                          | 2236697                         | 0                  | 120   | 23021                         | 2236987   | 1                                       | 2  | 0 (0)                                   | 4                                   |  |
|   |   |           |           |                         |                   | Mid   | 38716.92               | 2257781       | 38379.96                          | 2252165                         | 102                |       | 23084                         | 2255131   | 7                                       | 7  | 1 (4)                                   | 226                                 |  |
|   |   |           |           |                         |                   | High  | 39799.92               | 2275831       | 38884.08                          | 2260567                         | 504                |       | 23146                         | 2272987   | 6                                       | 3  | 0 (0)                                   | 1014                                |  |
| 100+400 +400                                | CC1   | 100       | 120       | 66                      | Downlink & Uplink | Low   | 37050                  | 2229999       | 37002.48                          | 2229207                         | 0                  | 120   | 22995                         | 2229499   | 2                                       | 2  | 0 (0)                                   | 4                                   |  |
|   |   |           |           |                         |                   | Mid   | 38100                  | 2247499       | 37905.6                           | 2244259                         | 102                |       | 23056                         | 2247067   | 0                                       | 1  | 1 (4)                                   | 214                                 |  |
|   |   |           |           |                         |                   | High  | 39157.44               | 2265123       | 38384.16                          | 2252235                         | 504                |       | 23117                         | 2264635   | 8                                       | 2  | 0 (0)                                   | 1012                                |  |
| Channel spacing CC1-CC2=242.52 MHz (Note 1) |   |           |           |                         |                   |   |                        |               |                                   |                                 |                    |       |                               |           |   |  |   |                                     |  |
| CC2   | 400   | 120       | 264       |                         |                   | Low   | 37292.52               | 2234041       | 37102.44                          | 2230873                         | 0                  | 120   | 23001                         | 2231227   | 9                                       | 0  | 1 (4)                                   | 8                                   |  |
|   |   |           |           |                         |                   | Mid   | 38342.52               | 2251541       | 38005.56                          | 2245925                         | 102                |       | 23062                         | 2248795   | 7                                       | 3  | 1 (4)                                   | 218                                 |  |
|   |   |           |           |                         |                   | High  | 39399.96               | 2269165       | 38484.12                          | 2253901                         | 504                |       | 23123                         | 2266363   | 3                                       | 1  | 1 (4)                                   | 1018                                |  |
| Channel spacing CC2-CC3=399.96 MHz (Note 1) |   |           |           |                         |                   |   |                        |               |                                   |                                 |                    |       |                               |           |   |  |   |                                     |  |
| CC3   | 400   | 120       | 264       |                         |                   | Low   | 37692.48               | 2240707       | 37502.4                           | 2237539                         | 0                  | 120   | 23024                         | 2237851   | 0                                       | 3  | 0 (0)                                   | 6                                   |  |
|   |   |           |           |                         |                   | Mid   | 38742.48               | 2258207       | 38405.52                          | 2252591                         | 102                |       | 23085                         | 2255419   | 10                                      | 1  | 1 (4)                                   | 214                                 |  |
|   |   |           |           |                         |                   | High  | 39799.92               | 2275831       | 38884.08                          | 2260567                         | 504                |       | 23146                         | 2272987   | 6                                       | 3  | 0 (0)                                   | 1014                                |  |
| 200+400 +400                                | CC1   | 200       | 120       | 132                     | Downlink & Uplink | Low   | 37100.04               | 2230833       | 37005                             | 2229249                         | 0                  | 120   | 22995                         | 2229499   | 5                                       | 0  | 0 (0)                                   | 0                                   |  |
|   |   |           |           |                         |                   | Mid   | 38100                  | 2247499       | 37858.08                          | 2243467                         | 102                |       | 23053                         | 2246203   | 0                                       | 2  | 0 (0)                                   | 208                                 |  |
|   |   |           |           |                         |                   | High  | 39105                  | 2264249       | 38284.2                           | 2250569                         | 504                |       | 23111                         | 2262907   | 1                                       | 0  | 0 (0)                                   | 1008                                |  |
| Channel spacing CC1-CC2=294.96 MHz (Note 1) |   |           |           |                         |                   |   |                        |               |                                   |                                 |                    |       |                               |           |   |  |   |                                     |  |
| CC2   | 400   | 120       | 264       |                         |                   | Low   | 37395                  | 2235749       | 37204.92                          | 2232581                         | 0                  | 120   | 23007                         | 2232955   | 7                                       | 1  | 1 (4)                                   | 10                                  |  |
|   |   |           |           |                         |                   | Mid   | 38394.96               | 2252415       | 38058                             | 2246799                         | 102                |       | 23065                         | 2249659   | 2                                       | 3  | 1 (4)                                   | 218                                 |  |
|   |   |           |           |                         |                   | High  | 39399.96               | 2269165       | 38484.12                          | 2253901                         | 504                |       | 23123                         | 2266363   | 3                                       | 1  | 1 (4)                                   | 1018                                |  |
| Channel spacing CC2-CC3=399.96 MHz (Note 1) |   |           |           |                         |                   |   |                        |               |                                   |                                 |                    |       |                               |           |   |  |   |                                     |  |
| CC3   | 400   | 120       | 264       | Downlink                | Low               | 37794.96                                    | 2242415                | 37604.88      | 2239247                           | 0                               | 120                | 23030 | 2239579                       | 10        | 3                                       | 0 (0)  | 6                                       |                                     |  |

|   |   |     |     |     |                         |      |          |         |          |         |     |     |       |         |   |   |       |      |
|---|---|-----|-----|-----|-------------------------|------|----------|---------|----------|---------|-----|-----|-------|---------|---|---|-------|------|
|   |   |     |     |     | &<br>Uplink             | Mid  | 38794.92 | 2259081 | 38457.96 | 2253465 | 102 |     | 23088 | 2256283 | 5 | 1 | 1 (4) | 214  |
|   |   |     |     |     | Downlink<br>&<br>Uplink | High | 39799.92 | 2275831 | 38884.08 | 2260567 | 504 |     | 23146 | 2272987 | 6 | 3 | 0 (0) | 1014 |
| 400+400<br>+400                             | CC1   | 400 | 120 | 264 | Downlink<br>&<br>Uplink | Low  | 37200    | 2232499 | 37009.92 | 2229331 | 0   | 120 | 22996 | 2229787 | 0 | 5 | 1 (4) | 18   |
|   |   |     |     |     |                         | Mid  | 38100    | 2247499 | 37763.04 | 2241883 | 102 |     | 23048 | 2244763 | 0 | 4 | 1 (4) | 220  |
|   |   |     |     |     |                         | High | 39000    | 2262499 | 38084.16 | 2247235 | 504 |     | 23100 | 2259739 | 0 | 3 | 1 (4) | 1022 |
| Channel spacing CC1-CC2=399.96 MHz (Note 1) |   |     |     |     |                         |      |          |         |          |         |     |     |       |         |   |   |       |      |
|   | CC2   | 400 | 120 | 264 | Downlink<br>&<br>Uplink | Low  | 37599.96 | 2239165 | 37409.88 | 2235997 | 0   | 120 | 23019 | 2236411 | 3 | 3 | 1 (4) | 14   |
|   |   |     |     |     |                         | Mid  | 38499.96 | 2254165 | 38163    | 2248549 | 102 |     | 23071 | 2251387 | 3 | 2 | 1 (4) | 216  |
|   |   |     |     |     |                         | High | 39399.96 | 2269165 | 38484.12 | 2253901 | 504 |     | 23123 | 2266363 | 3 | 1 | 1 (4) | 1018 |
| Channel spacing CC2-CC3=399.96 MHz (Note 1) |   |     |     |     |                         |      |          |         |          |         |     |     |       |         |   |   |       |      |
|   | CC3   | 400 | 120 | 264 | Downlink<br>&<br>Uplink | Low  | 37999.92 | 2245831 | 37809.84 | 2242663 | 0   | 120 | 23042 | 2243035 | 6 | 1 | 1 (4) | 10   |
|   |   |     |     |     |                         | Mid  | 38899.92 | 2260831 | 38562.96 | 2255215 | 102 |     | 23094 | 2258011 | 6 | 0 | 1 (4) | 212  |
|   |   |     |     |     |                         | High | 39799.92 | 2275831 | 38884.08 | 2260567 | 504 |     | 23146 | 2272987 | 6 | 3 | 0 (0) | 1014 |
| Note 1:                                     | Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  |     |     |     |                         |      |          |         |          |         |     |     |       |         |   |   |       |      |
| Note 2:                                     | CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  |     |     |     |                         |      |          |         |          |         |     |     |       |         |   |   |       |      |
| Note 3:                                     | The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |     |     |     |                         |      |          |         |          |         |     |     |       |         |   |   |       |      |
| Note 4:                                     | The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |     |     |     |                         |      |          |         |          |         |     |     |       |         |   |   |       |      |

## 4.3.1.2.3.4.3

## CA\_n260D

Table 4.3.1.2.3.4.3-1: NR Intra-Band contiguous CA configuration CA\_n260D (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

| CBW combination                             | CC  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |
|---|-----|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|-----------|---------------------------------------|---------------------------------------|--------------------------------------|
| 50+200                                      | CC1 | 50        | 60        | 66                       | Downlink & Uplink | Low 37025.04                | 2229583                | 37001.28      | 2229187                           | 0                              | 120                | 22995 | 2229499                       | 0         | 6                                     | 0 (0)                                 | 6                                    |
|   |     |           |           |                          |                   | Mid 38400                   | 2252499                | 38302.8       | 2250879                           | 102                            |                    | 23075 | 2252539                       | 4         | 8                                     | 1 (8)                                 | 118                                  |
|   |     |           |           |                          |                   | High 39778.8                | 2275479                | 39392.16      | 2269035                           | 504                            |                    | 23155 | 2275579                       | 4         | 13                                    | 1 (8)                                 | 525                                  |
| Channel spacing CC1-CC2=121.2 MHz (Note 1)  |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                                       |                                      |
| 100+200                                     | CC2 | 200       | 60        | 264                      | Downlink & Uplink | Low 37146.24                | 2231603                | 37051.2       | 2230019                           | 0                              | 120                | 22998 | 2230363                       | 8         | 0                                     | 1 (8)                                 | 8                                    |
|   |     |           |           |                          |                   | Mid 38521.2                 | 2254519                | 38352.72      | 2251711                           | 102                            |                    | 23078 | 2253403                       | 0         | 11                                    | 1 (8)                                 | 121                                  |
|   |     |           |           |                          |                   | High 39900                  | 2277499                | 39442.08      | 2269867                           | 504                            |                    | 23157 | 2276155                       | 0         | 0                                     | 0 (0)                                 | 504                                  |
| 200+200                                     | CC1 | 100       | 60        | 132                      | Downlink & Uplink | Low 37050                   | 2229999                | 37002.48      | 2229207                           | 0                              | 120                | 22995 | 2229499                       | 4         | 4                                     | 0 (0)                                 | 4                                    |
|   |     |           |           |                          |                   | Mid 38400                   | 2252499                | 38279.04      | 2250483                           | 102                            |                    | 23073 | 2251963                       | 4         | 1                                     | 0 (0)                                 | 103                                  |
|   |     |           |           |                          |                   | High 39752.52               | 2275041                | 39342.12      | 2268201                           | 504                            |                    | 23152 | 2274715                       | 10        | 10                                    | 1 (8)                                 | 522                                  |
| Channel spacing CC1-CC2=147.48 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                                       |                                      |
|   | CC2 | 200       | 60        | 264                      | Downlink & Uplink | Low 37197.48                | 2232457                | 37102.44      | 2230873                           | 0                              | 120                | 23001 | 2231227                       | 6         | 1                                     | 1 (8)                                 | 9                                    |
|   |     |           |           |                          |                   | Mid 38547.48                | 2254957                | 38379         | 2252149                           | 102                            |                    | 23079 | 2253691                       | 6         | 6                                     | 0 (0)                                 | 108                                  |
|   |     |           |           |                          |                   | High 39900                  | 2277499                | 39442.08      | 2269867                           | 504                            |                    | 23157 | 2276155                       | 0         | 0                                     | 0 (0)                                 | 504                                  |
|   | CC1 | 200       | 60        | 264                      | Downlink & Uplink | Low 37100.04                | 2230833                | 37005         | 2229249                           | 0                              | 120                | 22995 | 2229499                       | 10        | 0                                     | 0 (0)                                 | 0                                    |
|   |     |           |           |                          |                   | Mid 38400                   | 2252499                | 38231.52      | 2249691                           | 102                            |                    | 23071 | 2251387                       | 4         | 11                                    | 1 (8)                                 | 121                                  |
|   |     |           |           |                          |                   | High 39700.08               | 2274167                | 39242.16      | 2266535                           | 504                            |                    | 23146 | 2272987                       | 8         | 5                                     | 1 (8)                                 | 517                                  |
| Channel spacing CC1-CC2=199.92 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                                       |                                      |
|   | CC2 | 200       | 60        | 264                      | Downlink & Uplink | Low 37299.96                | 2234165                | 37204.92      | 2232581                           | 0                              | 120                | 23007 | 2232955                       | 2         | 3                                     | 1 (8)                                 | 11                                   |
|   |     |           |           |                          |                   | Mid 38599.92                | 2255831                | 38431.44      | 2253023                           | 102                            |                    | 23082 | 2254555                       | 8         | 5                                     | 0 (0)                                 | 107                                  |
|   |     |           |           |                          |                   | High 39900                  | 2277499                | 39442.08      | 2269867                           | 504                            |                    | 23157 | 2276155                       | 0         | 0                                     | 0 (0)                                 | 504                                  |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.3-2: NR Intra-Band contiguous CA configuration CA\_n260D (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

| CBW combination | CC  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |      |
|-----------------|---|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|--------------------------------------|------|
| 50+200          | CC1   | 50        | 120       | 32                       | Downlink & Uplink | Low                         | 37025.04               | 2229583       | 37002                             | 2229199                        | 0                  | 120  | 22995                         | 2229499   | 6                                     | 2                                     | 0 (0)                                | 4    |
|                 |   |           |           |                          |                   | Mid                         | 38400                  | 2252499       | 38230.08                          | 2249667                        | 102                |      | 23075                         | 2252539   | 8                                     | 3                                     | 1 (4)                                | 218  |
|                 |   |           |           |                          |                   | High                        | 39778.08               | 2275467       | 39029.28                          | 2262987                        | 504                |      | 23155                         | 2275579   | 8                                     | 6                                     | 1 (4)                                | 1028 |
|                 | Channel spacing CC1-CC2=121.92 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |      |
|                 | CC2   | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 37146.96               | 2231615       | 37051.92                          | 2230031                        | 0                  | 120  | 22998                         | 2230363   | 10                                    | 3                                     | 0 (0)                                | 6    |
|                 |   |           |           |                          |                   | Mid                         | 38521.92               | 2254531       | 38280                             | 2250499                        | 102                |      | 23078                         | 2253403   | 0                                     | 5                                     | 1 (4)                                | 222  |
|                 |   |           |           |                          |                   | High                        | 39900                  | 2277499       | 39079.2                           | 2263819                        | 504                |      | 23157                         | 2276155   | 0                                     | 0                                     | 0 (0)                                | 1008 |
|                 | CC1   | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37050                  | 2229999       | 37002.48                          | 2229207                        | 0                  | 120  | 22995                         | 2229499   | 2                                     | 2                                     | 0 (0)                                | 4    |
|                 |   |           |           |                          |                   | Mid                         | 38400                  | 2252499       | 38205.6                           | 2249259                        | 102                |      | 23073                         | 2251963   | 8                                     | 0                                     | 0 (0)                                | 204  |
|                 |   |           |           |                          |                   | High                        | 39752.52               | 2275041       | 38979.24                          | 2262153                        | 504                |      | 23152                         | 2274715   | 5                                     | 5                                     | 1 (4)                                | 1026 |
|                 | Channel spacing CC1-CC2=147.48 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |      |
|                 | CC2   | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 37197.48               | 2232457       | 37102.44                          | 2230873                        | 0                  | 120  | 23001                         | 2231227   | 9                                     | 0                                     | 1 (4)                                | 8    |
|                 |   |           |           |                          |                   | Mid                         | 38547.48               | 2254957       | 38305.56                          | 2250925                        | 102                |      | 23079                         | 2253691   | 3                                     | 3                                     | 0 (0)                                | 210  |
|                 |   |           |           |                          |                   | High                        | 39900                  | 2277499       | 39079.2                           | 2263819                        | 504                |      | 23157                         | 2276155   | 0                                     | 0                                     | 0 (0)                                | 1008 |
|                 | CC1   | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 37100.04               | 2230833       | 37005                             | 2229249                        | 0                  | 120  | 22995                         | 2229499   | 5                                     | 0                                     | 0 (0)                                | 0    |
|                 |   |           |           |                          |                   | Mid                         | 38400                  | 2252499       | 38158.08                          | 2248467                        | 102                |      | 23071                         | 2251387   | 8                                     | 5                                     | 1 (4)                                | 222  |
|                 |   |           |           |                          |                   | High                        | 39700.08               | 2274167       | 38879.28                          | 2260487                        | 504                |      | 23146                         | 2272987   | 10                                    | 2                                     | 1 (4)                                | 1020 |
|                 | Channel spacing CC1-CC2=199.92 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |      |
|                 | CC2   | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 37299.96               | 2234165       | 37204.92                          | 2232581                        | 0                  | 120  | 23007                         | 2232955   | 7                                     | 1                                     | 1 (4)                                | 10   |
|                 |   |           |           |                          |                   | Mid                         | 38599.92               | 2255831       | 38358                             | 2251799                        | 102                |      | 23082                         | 2254555   | 10                                    | 2                                     | 0 (0)                                | 208  |
|                 |   |           |           |                          |                   | High                        | 39900                  | 2277499       | 39079.2                           | 2263819                        | 504                |      | 23157                         | 2276155   | 0                                     | 0                                     | 0 (0)                                | 1008 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.4.4 CA\_n260E

**Table 4.3.1.2.3.4.4-1: NR Intra-Band contiguous CA configuration CA\_n260E (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing FFS**

**Table 4.3.1.2.3.4.4-2: NR Intra-Band contiguous CA configuration CA\_n260E (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing FFS**

4.3.1.2.3.4.5 CA\_n260F

**Table 4.3.1.2.3.4.5-1: NR Intra-Band contiguous CA configuration CA\_n260F (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing FFS**

**Table 4.3.1.2.3.4.5-2: NR Intra-Band contiguous CA configuration CA\_n260F (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing FFS**

## 4.3.1.2.3.4.6

## CA\_n260G

Table 4.3.1.2.3.4.6-1: NR Intra-Band contiguous CA configuration CA\_n260G (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

| CBW combination                            | CC   | CBW [MHz] | SCS [kHz] | carrier bandwidth [PRBs] | Range             | Carrier centre [MHz]<br>Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs]<br>Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |     |
|--|--|-----------|-----------|--------------------------|-------------------|--------------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|-----------|--|---------------------------------------|--------------------------------------|-----|
| 50+100                                     | CC1  | 50        | 60        | 66                       | Downlink & Uplink | Low                            | 37025.04               | 2229583       | 37001.28                          | 2229187                        | 0                  | 120   | 22995                         | 2229499   | 0  | 6                                     | 0 (0)                                | 6   |
|  |  |           |           |                          |                   | Mid                            | 38449.92               | 2253331       | 38352.72                          | 2251711                        | 102                |       | 23078                         | 2253403   | 0  | 11                                    | 1 (8)                                | 121 |
|  |  |           |           |                          |                   | High                           | 39876.24               | 2277103       | 39489.6                           | 2270659                        | 504                |       | 23160                         | 2277019   | 0  | 6                                     | 0 (0)                                | 510 |
|  | Channel spacing CC1-CC2=73.68 MHz (Note 1) |           |           |                          |                   |                                |                        |               |                                   |                                |                    |       |                               |           |  |                                       |                                      |     |
|  | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low                            | 37098.72               | 2230811       | 37051.2                           | 2230019                        | 0                  | 120   | 22998                         | 2230363   | 8  | 0                                     | 1 (8)                                | 8   |
|  |  |           |           |                          |                   | Mid                            | 38523.6                | 2254559       | 38402.64                          | 2252543                        | 102                |       | 23081                         | 2254267   | 8  | 13                                    | 1 (8)                                | 123 |
|  |  |           |           |                          |                   | High                           | 39949.92               | 2278331       | 39539.52                          | 2271491                        | 504                |       | 23163                         | 2277883   | 8  | 0                                     | 1 (8)                                | 512 |
|  | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low                            | 37050                  | 2229999       | 37002.48                          | 2229207                        | 0                  | 120   | 22995                         | 2229499   | 4  | 4                                     | 0 (0)                                | 4   |
|  |  |           |           |                          |                   | Mid                            | 38449.92               | 2253331       | 38328.96                          | 2251315                        | 102                |       | 23076                         | 2252827   | 0  | 4                                     | 0 (0)                                | 106 |
|  |  |           |           |                          |                   | High                           | 39849.96               | 2276665       | 39439.56                          | 2269825                        | 504                |       | 23157                         | 2276155   | 6  | 3                                     | 0 (0)                                | 507 |
| Channel spacing CC1-CC2=99.96 MHz (Note 1) |  |           |           |                          |                   |                                |                        |               |                                   |                                |                    |       |                               |           |  |                                       |                                      |     |
| CC2  | 100  | 60        | 132       | Downlink & Uplink        | Low               | 37149.96                       | 2231665                | 37102.44      | 2230873                           | 0                              | 120                | 23001 | 2231227                       | 6         | 1  | 1 (8)                                 | 9                                    |     |
|  |  |           |           |                          | Mid               | 38549.88                       | 2254997                | 38428.92      | 2252981                           | 102                            |                    | 23082 | 2254555                       | 2         | 1  | 1 (8)                                 | 111                                  |     |
|  |  |           |           |                          | High              | 39949.92                       | 2278331                | 39539.52      | 2271491                           | 504                            |                    | 23163 | 2277883                       | 8         | 0  | 1 (8)                                 | 512                                  |     |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.6-2: NR Intra-Band contiguous CA configuration CA\_n260G (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

| CBW combination                            | CC  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 1 | offset ToPointA (SIB1) [PRBs] Note 1 |      |
|--|---|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|--|--------------------------------------|------|
| 50+100                                     | CC1                                       | 50        | 120       | 32                       | Downlink & Uplink | Low                         | 37025.04               | 2229583       | 37002                             | 2229199                        | 0                  | 120  | 22995                         | 2229499   | 6                                     | 2                                      | 0 (0)                                | 4    |
|  |   |           |           |                          |                   | Mid                         | 38450.04               | 2253333       | 38280.12                          | 2250501                        | 102                |      | 23078                         | 2253403   | 11                                    | 4                                      | 1 (4)                                | 220  |
|  |   |           |           |                          |                   | High                        | 39875.52               | 2277091       | 39126.72                          | 2264611                        | 504                |      | 23160                         | 2277019   | 0                                     | 3                                      | 0 (0)                                | 1014 |
|  | Channel spacing CC1-CC2=74.4 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |  |                                      |      |
|  | CC2                                       | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37099.44               | 2230823       | 37051.92                          | 2230031                        | 0                  | 120  | 22998                         | 2230363   | 10                                    | 3                                      | 0 (0)                                | 6    |
|  |   |           |           |                          |                   | Mid                         | 38524.44               | 2254573       | 38330.04                          | 2251333                        | 102                |      | 23081                         | 2254267   | 3                                     | 6                                      | 1 (4)                                | 224  |
|  |   |           |           |                          |                   | High                        | 39949.92               | 2278331       | 39176.64                          | 2265443                        | 504                |      | 23163                         | 2277883   | 4                                     | 0                                      | 1 (4)                                | 1016 |
|  | CC1                                       | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37050                  | 2229999       | 37002.48                          | 2229207                        | 0                  | 120  | 22995                         | 2229499   | 2                                     | 2                                      | 0 (0)                                | 4    |
|  |   |           |           |                          |                   | Mid                         | 38450.04               | 2253333       | 38255.64                          | 2250093                        | 102                |      | 23076                         | 2252827   | 11                                    | 1                                      | 0 (0)                                | 206  |
|  |   |           |           |                          |                   | High                        | 39849.96               | 2276665       | 39076.68                          | 2263777                        | 504                |      | 23157                         | 2276155   | 9                                     | 1                                      | 0 (0)                                | 1010 |
| Channel spacing CC1-CC2=99.96 MHz (Note 1) |   |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |  |                                      |      |
| 100+100                                    | CC2                                       | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37149.96               | 2231665       | 37102.44                          | 2230873                        | 0                  | 120  | 23001                         | 2231227   | 9                                     | 0                                      | 1 (4)                                | 8    |
|  |   |           |           |                          |                   | Mid                         | 38550                  | 2254999       | 38355.6                           | 2251759                        | 102                |      | 23082                         | 2254555   | 6                                     | 0                                      | 1 (4)                                | 212  |
|  |   |           |           |                          |                   | High                        | 39949.92               | 2278331       | 39176.64                          | 2265443                        | 504                |      | 23163                         | 2277883   | 4                                     | 0                                      | 1 (4)                                | 1016 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4.A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.4.7

## CA\_n260H

Table 4.3.1.2.3.4.7-1: NR Intra-Band contiguous CA configuration CA\_n260H (PCC=CC1 and SCC=CC2, CC3), SCS=60 kHz, nominal channel spacing

| CBW combination | CC   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |     |
|-----------------|--|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|--------------------------------------|-----|
| 50+100 +100     | CC1  | 50        | 60        | 66                       | Downlink & Uplink | Low                         | 37025.04               | 2229583       | 37001.28                          | 2229187                        | 0                  | 120  | 22995                         | 2229499   | 0                                     | 6                                     | 0 (0)                                | 6   |
|                 |  |           |           |                          |                   | Mid                         | 38400                  | 2252499       | 38302.8                           | 2250879                        | 102                |      | 23075                         | 2252539   | 4                                     | 8                                     | 1 (8)                                | 118 |
|                 |  |           |           |                          |                   | High                        | 39776.28               | 2275437       | 39389.64                          | 2268993                        | 504                |      | 23154                         | 2275291   | 10                                    | 0                                     | 0 (0)                                | 504 |
|                 | Channel spacing CC1-CC2=73.68 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |     |
|                 | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low                         | 37098.72               | 2230811       | 37051.2                           | 2230019                        | 0                  | 120  | 22998                         | 2230363   | 8                                     | 0                                     | 1 (8)                                | 8   |
|                 |  |           |           |                          |                   | Mid                         | 38473.68               | 2253727       | 38352.72                          | 2251711                        | 102                |      | 23078                         | 2253403   | 0                                     | 11                                    | 1 (8)                                | 121 |
|                 |  |           |           |                          |                   | High                        | 39849.96               | 2276665       | 39439.56                          | 2269825                        | 504                |      | 23157                         | 2276155   | 6                                     | 3                                     | 0 (0)                                | 507 |
|                 | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |     |
|                 | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low                         | 37198.68               | 2232477       | 37151.16                          | 2231685                        | 0                  | 120  | 23004                         | 2232091   | 10                                    | 5                                     | 1 (8)                                | 13  |
|                 |  |           |           |                          |                   | Mid                         | 38573.64               | 2255393       | 38452.68                          | 225377                         | 102                |      | 23083                         | 2254843   | 2                                     | 0                                     | 0 (0)                                | 102 |
|                 |  |           |           |                          |                   | High                        | 39949.92               | 2278331       | 39539.52                          | 2271491                        | 504                |      | 23163                         | 2277883   | 8                                     | 0                                     | 1 (8)                                | 512 |
| 100+100 +100    | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low                         | 37050                  | 2229999       | 37002.48                          | 2229207                        | 0                  | 120  | 22995                         | 2229499   | 4                                     | 4                                     | 0 (0)                                | 4   |
|                 |  |           |           |                          |                   | Mid                         | 38400                  | 2252499       | 38279.04                          | 2250483                        | 102                |      | 23073                         | 2251963   | 4                                     | 1                                     | 0 (0)                                | 103 |
|                 |  |           |           |                          |                   | High                        | 39750                  | 2274999       | 39339.6                           | 2268159                        | 504                |      | 23152                         | 2274715   | 4                                     | 14                                    | 1 (8)                                | 526 |
|                 | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |     |
|                 | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low                         | 37149.96               | 2231665       | 37102.44                          | 2230873                        | 0                  | 120  | 23001                         | 2231227   | 6                                     | 1                                     | 1 (8)                                | 9   |
|                 |  |           |           |                          |                   | Mid                         | 38499.96               | 2254165       | 38379                             | 2252149                        | 102                |      | 23079                         | 2253691   | 6                                     | 6                                     | 0 (0)                                | 108 |
|                 |  |           |           |                          |                   | High                        | 39849.96               | 2276665       | 39439.56                          | 2269825                        | 504                |      | 23157                         | 2276155   | 6                                     | 3                                     | 0 (0)                                | 507 |
|                 | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |     |
|                 | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low                         | 37249.92               | 2233331       | 37202.4                           | 2232539                        | 0                  | 120  | 23007                         | 2232955   | 8                                     | 6                                     | 1 (8)                                | 14  |
|                 |  |           |           |                          |                   | Mid                         | 38599.92               | 2255831       | 38478.96                          | 2253815                        | 102                |      | 23085                         | 2255419   | 8                                     | 3                                     | 1 (8)                                | 113 |
|                 |  |           |           |                          |                   | High                        | 39949.92               | 2278331       | 39539.52                          | 2271491                        | 504                |      | 23163                         | 2277883   | 8                                     | 0                                     | 1 (8)                                | 512 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.4.7-2: NR Intra-Band contiguous CA configuration CA\_n260H (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing

| CBW combination | CC   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |      |
|-----------------|--|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|--------------------------------------|------|
| 50+100 +100     | CC1  | 50        | 120       | 32                       | Downlink & Uplink | Low                         | 37025.04               | 2229583       | 37002                             | 2229199                        | 0                  | 120  | 22995                         | 2229499   | 6                                     | 2                                     | 0 (0)                                | 4    |
|                 |  |           |           |                          |                   | Mid                         | 38400                  | 2252499       | 38230.08                          | 2249667                        | 102                |      | 23075                         | 2252539   | 8                                     | 3                                     | 1 (4)                                | 218  |
|                 |  |           |           |                          |                   | High                        | 39775.56               | 2275425       | 39026.76                          | 2262945                        | 504                |      | 23154                         | 2275291   | 5                                     | 0                                     | 0 (0)                                | 1008 |
|                 | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |      |
|                 | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37099.44               | 2230823       | 37051.92                          | 2230031                        | 0                  | 120  | 22998                         | 2230363   | 10                                    | 3                                     | 0 (0)                                | 6    |
|                 |  |           |           |                          |                   | Mid                         | 38474.4                | 2253739       | 38280                             | 2250499                        | 102                |      | 23078                         | 2253403   | 0                                     | 5                                     | 1 (4)                                | 222  |
|                 |  |           |           |                          |                   | High                        | 39849.96               | 2276665       | 39076.68                          | 2263777                        | 504                |      | 23157                         | 2276155   | 9                                     | 1                                     | 0 (0)                                | 1010 |
|                 | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |      |
|                 | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37199.4                | 2232489       | 37151.88                          | 2231697                        | 0                  | 120  | 23004                         | 2232091   | 5                                     | 2                                     | 1 (4)                                | 12   |
|                 |  |           |           |                          |                   | Mid                         | 38574.36               | 2255405       | 38379.96                          | 2252165                        | 102                |      | 23084                         | 2255131   | 7                                     | 7                                     | 1 (4)                                | 226  |
|                 |  |           |           |                          |                   | High                        | 39949.92               | 2278331       | 39176.64                          | 2265443                        | 504                |      | 23163                         | 2277883   | 4                                     | 0                                     | 1 (4)                                | 1016 |
| 100+100 +100    | CC1  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37050                  | 2229999       | 37002.48                          | 2229207                        | 0                  | 120  | 22995                         | 2229499   | 2                                     | 2                                     | 0 (0)                                | 4    |
|                 |  |           |           |                          |                   | Mid                         | 38400                  | 2252499       | 38205.6                           | 2249259                        | 102                |      | 23073                         | 2251963   | 8                                     | 0                                     | 0 (0)                                | 204  |
|                 |  |           |           |                          |                   | High                        | 39750                  | 2274999       | 38976.72                          | 2262111                        | 504                |      | 23152                         | 2274715   | 2                                     | 7                                     | 1 (4)                                | 1030 |
|                 | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |      |
|                 | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37149.96               | 2231665       | 37102.44                          | 2230873                        | 0                  | 120  | 23001                         | 2231227   | 9                                     | 0                                     | 1 (4)                                | 8    |
|                 |  |           |           |                          |                   | Mid                         | 38499.96               | 2254165       | 38305.56                          | 2250925                        | 102                |      | 23079                         | 2253691   | 3                                     | 3                                     | 0 (0)                                | 210  |
|                 |  |           |           |                          |                   | High                        | 39849.96               | 2276665       | 39076.68                          | 2263777                        | 504                |      | 23157                         | 2276155   | 9                                     | 1                                     | 0 (0)                                | 1010 |
|                 | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |      |
|                 | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37249.92               | 2233331       | 37202.4                           | 2232539                        | 0                  | 120  | 23007                         | 2232955   | 4                                     | 3                                     | 1 (4)                                | 14   |
|                 |  |           |           |                          |                   | Mid                         | 38599.92               | 2255831       | 38405.52                          | 2252591                        | 102                |      | 23085                         | 2255419   | 10                                    | 1                                     | 1 (4)                                | 214  |
|                 |  |           |           |                          |                   | High                        | 39949.92               | 2278331       | 39176.64                          | 2265443                        | 504                |      | 23163                         | 2277883   | 4                                     | 0                                     | 1 (4)                                | 1016 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.4.8

## CA\_n260I

Table 4.3.1.2.3.4.8-1: NR Intra-Band contiguous CA configuration CA\_n260I (PCC=CC1, SCC=CC2, CC3, CC4), SCS=60 kHz, nominal channel spacing

| CBW combination                            | CC  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |
|--|-----|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|-----------|--|--|--------------------------------------|
| 50+100 +100+100                            | CC1 | 50        | 60        | 66                       | Downlink & Uplink | Low 37025.04                | 2229583                | 37001.28      | 2229187                           | 0                              | 120                | 22995 | 2229499                       | 0         | 6                                      | 0 (0)                                    | 6                                    |
|  |     |           |           |                          |                   | Mid 38349.96                | 2251665                | 38252.76      | 2250045                           | 102                            |                    | 23072 | 2251675                       | 10        | 5                                      | 1 (8)                                    | 115                                  |
|  |     |           |           |                          |                   | High 39676.32               | 2273771                | 39289.68      | 2267327                           | 504                            |                    | 23149 | 2273851                       | 8         | 11                                     | 1 (8)                                    | 523                                  |
| Channel spacing CC1-CC2=73.68 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|  | CC2 | 100       | 60        | 132                      | Downlink & Uplink | Low 37098.72                | 2230811                | 37051.2       | 2230019                           | 0                              | 120                | 22998 | 2230363                       | 8         | 0                                      | 1 (8)                                    | 8                                    |
|  |     |           |           |                          |                   | Mid 38423.64                | 2252893                | 38302.68      | 2250877                           | 102                            |                    | 23075 | 2252539                       | 6         | 8                                      | 1 (8)                                    | 118                                  |
|  |     |           |           |                          |                   | High 39750                  | 2274999                | 39339.6       | 2268159                           | 504                            |                    | 23152 | 2274715                       | 4         | 14                                     | 1 (8)                                    | 526                                  |
| Channel spacing CC2-CC3=99.96 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|  | CC3 | 100       | 60        | 132                      | Downlink & Uplink | Low 37198.68                | 2232477                | 37151.16      | 2231685                           | 0                              | 120                | 23004 | 2232091                       | 10        | 5                                      | 1 (8)                                    | 13                                   |
|  |     |           |           |                          |                   | Mid 38523.6                 | 2254559                | 38402.64      | 2252543                           | 102                            |                    | 23081 | 2254267                       | 8         | 13                                     | 1 (8)                                    | 123                                  |
|  |     |           |           |                          |                   | High 39849.96               | 2276665                | 39439.56      | 2269825                           | 504                            |                    | 23157 | 2276155                       | 6         | 3                                      | 0 (0)                                    | 507                                  |
| Channel spacing CC3-CC4=99.96 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|  | CC4 | 100       | 60        | 132                      | Downlink & Uplink | Low 37298.64                | 2234143                | 37251.12      | 2233351                           | 0                              | 120                | 23010 | 2233819                       | 0         | 11                                     | 1 (8)                                    | 19                                   |
|  |     |           |           |                          |                   | Mid 38623.56                | 2256225                | 38502.6       | 2254209                           | 102                            |                    | 23086 | 2255707                       | 10        | 2                                      | 0 (0)                                    | 104                                  |
|  |     |           |           |                          |                   | High 39949.92               | 2278331                | 39539.52      | 2271491                           | 504                            |                    | 23163 | 2277883                       | 8         | 0                                      | 1 (8)                                    | 512                                  |
|  | CC1 | 100       | 60        | 132                      | Downlink & Uplink | Low 37050                   | 2229999                | 37002.48      | 2229207                           | 0                              | 120                | 22995 | 2229499                       | 4         | 4                                      | 0 (0)                                    | 4                                    |
|  |     |           |           |                          |                   | Mid 38349.96                | 2251665                | 38229         | 2249649                           | 102                            |                    | 23071 | 2251387                       | 10        | 14                                     | 1 (8)                                    | 124                                  |
|  |     |           |           |                          |                   | High 39650.04               | 2273333                | 39239.64      | 2266493                           | 504                            |                    | 23146 | 2272987                       | 2         | 9                                      | 1 (8)                                    | 521                                  |
| Channel spacing CC1-CC2=99.96 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|  | CC2 | 100       | 60        | 132                      | Downlink & Uplink | Low 37149.96                | 2231665                | 37102.44      | 2230873                           | 0                              | 120                | 23001 | 2231227                       | 6         | 1                                      | 1 (8)                                    | 9                                    |
|  |     |           |           |                          |                   | Mid 38449.92                | 2253331                | 38328.96      | 2251315                           | 102                            |                    | 23076 | 2252827                       | 0         | 4                                      | 0 (0)                                    | 106                                  |
|  |     |           |           |                          |                   | High 39750                  | 2274999                | 39339.6       | 2268159                           | 504                            |                    | 23152 | 2274715                       | 4         | 14                                     | 1 (8)                                    | 526                                  |
| Channel spacing CC2-CC3=99.96 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|  | CC3 | 100       | 60        | 132                      | Downlink & Uplink | Low 37249.92                | 2233331                | 37202.4       | 2232539                           | 0                              | 120                | 23007 | 2232955                       | 8         | 6                                      | 1 (8)                                    | 14                                   |
|  |     |           |           |                          |                   | Mid 38549.88                | 2254997                | 38428.92      | 2252981                           | 102                            |                    | 23082 | 2254555                       | 2         | 1                                      | 1 (8)                                    | 111                                  |
|  |     |           |           |                          |                   | High 39849.96               | 2276665                | 39439.56      | 2269825                           | 504                            |                    | 23157 | 2276155                       | 6         | 3                                      | 0 (0)                                    | 507                                  |
| Channel spacing CC3-CC4=99.96 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|  | CC4 | 100       | 60        | 132                      | Downlink &        | Low 37349.88                | 2234997                | 37302.36      | 2234205                           | 0                              | 120                | 23013 | 2234683                       | 10        | 11                                     | 1 (8)                                    | 19                                   |
|  |     |           |           |                          |                   | Mid 38649.84                | 2256663                | 38528.88      | 2254647                           | 102                            |                    | 23088 | 2256283                       | 4         | 6                                      | 1 (8)                                    | 116                                  |

|   |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
|---|--|--|--|--|--------|------|----------|---------|----------|---------|-----|--|-------|---------|---|---|-------|-----|
|   |  |  |  |  | Uplink | High | 39949.92 | 2278331 | 39539.52 | 2271491 | 504 |  | 23163 | 2277883 | 8 | 0 | 1 (8) | 512 |
| Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
| Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
| Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
| Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |

Table 4.3.1.2.3.4.8-2: NR Intra-Band contiguous CA configuration CA\_n260I (PCC=CC1, SCC=CC2, CC3,CC4), SCS=120 kHz, nominal channel spacing

| CBW combination  | CC   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |      |
|------------------|--|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|------|
| 50+100 +100+100  | CC1  | 50        | 120       | 32                       | Downlink & Uplink | Low                         | 37025.04               | 2229583       | 37002                             | 2229199                        | 0                  | 120  | 22995                         | 2229499   | 6                                      | 2  | 0 (0)                                | 4    |
|                  |  |           |           |                          |                   | Mid                         | 38349.96               | 2251665       | 38180.04                          | 2248833                        | 102                |      | 23072                         | 2251675   | 5                                      | 2  | 1 (4)                                | 216  |
|                  |  |           |           |                          |                   | High                        | 39675.6                | 2273759       | 38926.8                           | 2261279                        | 504                |      | 23149                         | 2273851   | 10                                     | 5  | 1 (4)                                | 1026 |
|                  | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                  | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37099.44               | 2230823       | 37051.92                          | 2230031                        | 0                  | 120  | 22998                         | 2230363   | 10                                     | 3  | 0 (0)                                | 6    |
|                  |  |           |           |                          |                   | Mid                         | 38424.36               | 2252905       | 38229.96                          | 2249665                        | 102                |      | 23075                         | 2252539   | 9                                      | 3  | 1 (4)                                | 218  |
|                  |  |           |           |                          |                   | High                        | 39750                  | 2274999       | 38976.72                          | 2262111                        | 504                |      | 23152                         | 2274715   | 2                                      | 7  | 1 (4)                                | 1030 |
|                  | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                  | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37199.4                | 2232489       | 37151.88                          | 2231697                        | 0                  | 120  | 23004                         | 2232091   | 5                                      | 2  | 1 (4)                                | 12   |
|                  |  |           |           |                          |                   | Mid                         | 38524.32               | 2254571       | 38329.92                          | 2251331                        | 102                |      | 23081                         | 2254267   | 4                                      | 6  | 1 (4)                                | 224  |
|                  |  |           |           |                          |                   | High                        | 39849.96               | 2276665       | 39076.68                          | 2263777                        | 504                |      | 23157                         | 2276155   | 9                                      | 1  | 0 (0)                                | 1010 |
|                  | Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                  | CC4  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37299.36               | 2234155       | 37251.84                          | 2233363                        | 0                  | 120  | 23010                         | 2233819   | 0                                      | 5  | 1 (4)                                | 18   |
|                  |  |           |           |                          |                   | Mid                         | 38624.28               | 2256237       | 38429.88                          | 2252997                        | 102                |      | 23086                         | 2255707   | 11                                     | 0  | 0 (0)                                | 204  |
|                  |  |           |           |                          |                   | High                        | 39949.92               | 2278331       | 39176.64                          | 2265443                        | 504                |      | 23163                         | 2277883   | 4                                      | 0  | 1 (4)                                | 1016 |
| 100+100 +100+100 | CC1  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37050                  | 2229999       | 37002.48                          | 2229207                        | 0                  | 120  | 22995                         | 2229499   | 2                                      | 2  | 0 (0)                                | 4    |
|                  |  |           |           |                          |                   | Mid                         | 38349.96               | 2251665       | 38155.56                          | 2248425                        | 102                |      | 23071                         | 2251387   | 5                                      | 7  | 1 (4)                                | 226  |
|                  |  |           |           |                          |                   | High                        | 39650.04               | 2273333       | 38876.76                          | 2260445                        | 504                |      | 23146                         | 2272987   | 7                                      | 4  | 1 (4)                                | 1024 |
|                  | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                  | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37149.96               | 2231665       | 37102.44                          | 2230873                        | 0                  | 120  | 23001                         | 2231227   | 9                                      | 0  | 1 (4)                                | 8    |
|                  |  |           |           |                          |                   | Mid                         | 38449.92               | 2253331       | 38255.52                          | 2250091                        | 102                |      | 23076                         | 2252827   | 0                                      | 2  | 0 (0)                                | 208  |
|                  |  |           |           |                          |                   | High                        | 39750                  | 2274999       | 38976.72                          | 2262111                        | 504                |      | 23152                         | 2274715   | 2                                      | 7  | 1 (4)                                | 1030 |
|                  | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                  | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37249.92               | 2233331       | 37202.4                           | 2232539                        | 0                  | 120  | 23007                         | 2232955   | 4                                      | 3  | 1 (4)                                | 14   |
|                  |  |           |           |                          |                   | Mid                         | 38549.88               | 2254997       | 38355.48                          | 2251757                        | 102                |      | 23082                         | 2254555   | 7                                      | 0  | 1 (4)                                | 212  |
|                  |  |           |           |                          |                   | High                        | 39849.96               | 2276665       | 39076.68                          | 2263777                        | 504                |      | 23157                         | 2276155   | 9                                      | 1  | 0 (0)                                | 1010 |
|                  | Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                  | CC4  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37349.88               | 2234997       | 37302.36                          | 2234205                        | 0                  | 120  | 23013                         | 2234683   | 11                                     | 5  | 1 (4)                                | 18   |
|                  |  |           |           |                          |                   | Mid                         | 38649.84               | 2256663       | 38455.44                          | 2253423                        | 102                |      | 23088                         | 2256283   | 2                                      | 3  | 1 (4)                                | 218  |
|                  |  |           |           |                          |                   | High                        | 39949.92               | 2278331       | 39176.64                          | 2265443                        | 504                |      | 23163                         | 2277883   | 4                                      | 0  | 1 (4)                                | 1016 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

- Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.
- Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta f_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.
- Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.4.9

## CA\_n260J

**Table 4.3.1.2.3.4.9-1: NR Intra-Band contiguous CA configuration CA\_n260J (PCC=CC1, SCC=CC2, CC3, CC4, CC5), SCS=60 kHz, nominal channel spacing**

| CBW combination             | CC   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |
|-----------------------------|--|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|-----------|--|-------------------------|--------------------------------------|
| 50+100<br>+100+100<br>+100  | CC1  | 50        | 60        | 66                       | Downlink & Uplink | Low  | 37025.04                    | 2229583                | 37001.28      | 2229187                           | 0                              | 120                | 22995 | 2229499                       | 0         | 6                                      | 0 (0)                   | 6                                    |
|                             |  |           |           |                          |                   | Mid  | 38299.92                    | 2250831                | 38202.72      | 2249211                           | 102                            |                    | 23069 | 2250811                       | 4         | 3                                      | 1 (8)                   | 113                                  |
|                             |  |           |           |                          |                   | High | 39576.36                    | 2272105                | 39189.72      | 2265661                           | 504                            |                    | 23143 | 2272123                       | 6         | 6                                      | 1 (8)                   | 518                                  |
|                             | Channel spacing CC1-CC2=73.68 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |  |                         |                                      |
|                             | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 37098.72                    | 2230811                | 37051.2       | 2230019                           | 0                              | 120                | 22998 | 2230363                       | 8         | 0                                      | 1 (8)                   | 8                                    |
|                             |  |           |           |                          |                   | Mid  | 38373.6                     | 2252059                | 38252.64      | 2250043                           | 102                            |                    | 23072 | 2251675                       | 0         | 6                                      | 1 (8)                   | 116                                  |
|                             |  |           |           |                          |                   | High | 39650.04                    | 2273333                | 39239.64      | 2266493                           | 504                            |                    | 23146 | 2272987                       | 2         | 9                                      | 1 (8)                   | 521                                  |
|                             | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |  |                         |                                      |
|                             | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 37198.68                    | 2232477                | 37151.16      | 2231685                           | 0                              | 120                | 23004 | 2232091                       | 10        | 5                                      | 1 (8)                   | 13                                   |
|                             |  |           |           |                          |                   | Mid  | 38473.56                    | 2253725                | 38352.6       | 2251709                           | 102                            |                    | 23078 | 2253403                       | 2         | 11                                     | 1 (8)                   | 121                                  |
|                             |  |           |           |                          |                   | High | 39750                       | 2274999                | 39339.6       | 2268159                           | 504                            |                    | 23152 | 2274715                       | 4         | 14                                     | 1 (8)                   | 526                                  |
|                             | Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |  |                         |                                      |
|                             | CC4  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 37298.64                    | 2234143                | 37251.12      | 2233351                           | 0                              | 120                | 23010 | 2233819                       | 0         | 11                                     | 1 (8)                   | 19                                   |
|                             |  |           |           |                          |                   | Mid  | 38573.52                    | 2255391                | 38452.56      | 2253375                           | 102                            |                    | 23083 | 2254843                       | 4         | 0                                      | 0 (0)                   | 102                                  |
|                             |  |           |           |                          |                   | High | 39849.96                    | 2276665                | 39439.56      | 2269825                           | 504                            |                    | 23157 | 2276155                       | 6         | 3                                      | 0 (0)                   | 507                                  |
|                             | Channel spacing CC4-CC5=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |  |                         |                                      |
|                             | CC5  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 37398.6                     | 2235809                | 37351.08      | 2235017                           | 0                              | 120                | 23015 | 2235259                       | 2         | 0                                      | 0 (0)                   | 0                                    |
|                             |  |           |           |                          |                   | Mid  | 38673.48                    | 2257057                | 38552.52      | 2255041                           | 102                            |                    | 23089 | 2256571                       | 6         | 5                                      | 0 (0)                   | 107                                  |
|                             |  |           |           |                          |                   | High | 39949.92                    | 2278331                | 39539.52      | 2271491                           | 504                            |                    | 23163 | 2277883                       | 8         | 0                                      | 1 (8)                   | 512                                  |
| 100+100<br>+100+100<br>+100 | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 37050                       | 2229999                | 37002.48      | 2229207                           | 0                              | 120                | 22995 | 2229499                       | 4         | 4                                      | 0 (0)                   | 4                                    |
|                             |  |           |           |                          |                   | Mid  | 38299.92                    | 2250831                | 38178.96      | 2248815                           | 102                            |                    | 23068 | 2250523                       | 4         | 12                                     | 1 (8)                   | 122                                  |
|                             |  |           |           |                          |                   | High | 39550.08                    | 2271667                | 39139.68      | 2264827                           | 504                            |                    | 23140 | 2271259                       | 0         | 4                                      | 1 (8)                   | 516                                  |
|                             | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |  |                         |                                      |
|                             | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 37149.96                    | 2231665                | 37102.44      | 2230873                           | 0                              | 120                | 23001 | 2231227                       | 6         | 1                                      | 1 (8)                   | 9                                    |
|                             |  |           |           |                          |                   | Mid  | 38399.88                    | 2252497                | 38278.92      | 2250481                           | 102                            |                    | 23073 | 2251963                       | 6         | 1                                      | 0 (0)                   | 103                                  |
|                             |  |           |           |                          |                   | High | 39650.04                    | 2273333                | 39239.64      | 2266493                           | 504                            |                    | 23146 | 2272987                       | 2         | 9                                      | 1 (8)                   | 521                                  |
|                             | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 37249.92                    | 2233331                | 37202.4       | 2232539                           | 0                              | 120                | 23007 | 2232955                       | 8         | 6                                      | 1 (8)                   | 14                                   |
|                             |  |           |           |                          |                   | Mid  | 38499.84                    | 2254163                | 38378.88      | 2252147                           | 102                            |                    | 23079 | 2253691                       | 8         | 6                                      | 0 (0)                   | 108                                  |
|                             |  |           |           |                          |                   | High | 39750                       | 2274999                | 39339.6       | 2268159                           | 504                            |                    | 23152 | 2274715                       | 4         | 14                                     | 1 (8)                   | 526                                  |

| Channel spacing CC3-CC4=99.96 MHz (Note 1) |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |  |
|--|-----|----|-----|-------------------|------|----------|---------|----------|---------|-----|-----|-------|---------|----|----|-------|-----|--|
| CC4  | 100 | 60 | 132 | Downlink & Uplink | Low  | 37349.88 | 2234997 | 37302.36 | 2234205 | 0   | 120 | 23013 | 2234683 | 10 | 11 | 1 (8) | 19  |  |
|  |     |    |     |                   | Mid  | 38599.8  | 2255829 | 38478.84 | 2253813 | 102 |     | 23085 | 2255419 | 10 | 3  | 1 (8) | 113 |  |
|  |     |    |     |                   | High | 39849.96 | 2276665 | 39439.56 | 2269825 | 504 |     | 23157 | 2276155 | 6  | 3  | 0 (0) | 507 |  |
| Channel spacing CC4-CC5=99.96 MHz (Note 1) |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |  |
| CC5  | 100 | 60 | 132 | Downlink & Uplink | Low  | 37449.84 | 2236663 | 37402.32 | 2235871 | 0   | 120 | 23018 | 2236123 | 0  | 1  | 0 (0) | 1   |  |
|  |     |    |     |                   | Mid  | 38699.76 | 2257495 | 38578.8  | 2255479 | 102 |     | 23091 | 2257147 | 0  | 9  | 1 (8) | 119 |  |
|  |     |    |     |                   | High | 39949.92 | 2278331 | 39539.52 | 2271491 | 504 |     | 23163 | 2277883 | 8  | 0  | 1 (8) | 512 |  |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

**Table 4.3.1.2.3.4.9-2: NR Intra-Band contiguous CA configuration CA\_n260J (PCC=CC1, SCC=CC2, CC3, CC4, CC5), SCS=120 kHz, nominal channel spacing**

| CBW combination            | CC   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |      |
|----------------------------|--|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|------|
| 50+100<br>+100+100<br>+100 | CC1  | 50        | 120       | 32                       | Downlink & Uplink | Low                         | 37025.04               | 2229583       | 37002                             | 2229199                        | 0                  | 120  | 22995                         | 2229499   | 6                                      | 2  | 0 (0)                                | 4    |
|                            |  |           |           |                          |                   | Mid                         | 38300.04               | 2250833       | 38130.12                          | 2248001                        | 102                |      | 23069                         | 2250811   | 1                                      | 1  | 1 (4)                                | 214  |
|                            |  |           |           |                          |                   | High                        | 39575.64               | 2272093       | 38826.84                          | 2259613                        | 504                |      | 23143                         | 2272123   | 3                                      | 3  | 1 (4)                                | 1022 |
|                            | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                            | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37099.44               | 2230823       | 37051.92                          | 2230031                        | 0                  | 120  | 22998                         | 2230363   | 10                                     | 3  | 0 (0)                                | 6    |
|                            |  |           |           |                          |                   | Mid                         | 38374.44               | 2252073       | 38180.04                          | 2248833                        | 102                |      | 23072                         | 2251675   | 5                                      | 2  | 1 (4)                                | 216  |
|                            |  |           |           |                          |                   | High                        | 39650.04               | 2273333       | 38876.76                          | 2260445                        | 504                |      | 23146                         | 2272987   | 7                                      | 4  | 1 (4)                                | 1024 |
|                            | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                            | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37199.4                | 2232489       | 37151.88                          | 2231697                        | 0                  | 120  | 23004                         | 2232091   | 5                                      | 2  | 1 (4)                                | 12   |
|                            |  |           |           |                          |                   | Mid                         | 38474.4                | 2253739       | 38280                             | 2250499                        | 102                |      | 23078                         | 2253403   | 0                                      | 5  | 1 (4)                                | 222  |
|                            |  |           |           |                          |                   | High                        | 39750                  | 2274999       | 38976.72                          | 2262111                        | 504                |      | 23152                         | 2274715   | 2                                      | 7  | 1 (4)                                | 1030 |
|                            | Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                            | CC4  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37299.36               | 2234155       | 37251.84                          | 2233363                        | 0                  | 120  | 23010                         | 2233819   | 0                                      | 5  | 1 (4)                                | 18   |
|                            |  |           |           |                          |                   | Mid                         | 38574.36               | 2255405       | 38379.96                          | 2252165                        | 102                |      | 23084                         | 2255131   | 7                                      | 7  | 1 (4)                                | 226  |
|                            |  |           |           |                          |                   | High                        | 39849.96               | 2276665       | 39076.68                          | 2263777                        | 504                |      | 23157                         | 2276155   | 9                                      | 1  | 0 (0)                                | 1010 |
|                            | Channel spacing CC4-CC5=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                            | CC5  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37399.32               | 2235821       | 37351.8                           | 2235029                        | 0                  | 120  | 23016                         | 2235547   | 7                                      | 7  | 1 (4)                                | 22   |
|                            |  |           |           |                          |                   | Mid                         | 38674.32               | 2257071       | 38479.92                          | 2253831                        | 102                |      | 23089                         | 2256571   | 2                                      | 2  | 0 (0)                                | 208  |
|                            |  |           |           |                          |                   | High                        | 39949.92               | 2278331       | 39176.64                          | 2265443                        | 504                |      | 23163                         | 2277883   | 4                                      | 0  | 1 (4)                                | 1016 |
|                            | CC1  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37050                  | 2229999       | 37002.48                          | 2229207                        | 0                  | 120  | 22995                         | 2229499   | 2                                      | 2  | 0 (0)                                | 4    |
|                            |  |           |           |                          |                   | Mid                         | 38300.04               | 2250833       | 38105.64                          | 2247593                        | 102                |      | 23068                         | 2250523   | 1                                      | 6  | 1 (4)                                | 224  |
|                            |  |           |           |                          |                   | High                        | 39550.08               | 2271667       | 38776.8                           | 2258779                        | 504                |      | 23140                         | 2271259   | 0                                      | 2  | 1 (4)                                | 1020 |
|                            | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                            | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37149.96               | 2231665       | 37102.44                          | 2230873                        | 0                  | 120  | 23001                         | 2231227   | 9                                      | 0  | 1 (4)                                | 8    |
|                            |  |           |           |                          |                   | Mid                         | 38400                  | 2252499       | 38205.6                           | 2249259                        | 102                |      | 23073                         | 2251963   | 8                                      | 0  | 0 (0)                                | 204  |
|                            |  |           |           |                          |                   | High                        | 39650.04               | 2273333       | 38876.76                          | 2260445                        | 504                |      | 23146                         | 2272987   | 7                                      | 4  | 1 (4)                                | 1024 |
|                            | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                            | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 37249.92               | 2233331       | 37202.4                           | 2232539                        | 0                  | 120  | 23007                         | 2232955   | 4                                      | 3  | 1 (4)                                | 14   |
|                            |  |           |           |                          |                   | Mid                         | 38499.96               | 2254165       | 38305.56                          | 2250925                        | 102                |      | 23079                         | 2253691   | 3                                      | 3  | 0 (0)                                | 210  |
|                            |  |           |           |                          |                   | High                        | 39750                  | 2274999       | 38976.72                          | 2262111                        | 504                |      | 23152                         | 2274715   | 2                                      | 7  | 1 (4)                                | 1030 |

| Channel spacing CC3-CC4=99.96 MHz (Note 1) |     |     |    |                   |      |          |         |          |         |     |     |       |         |    |   |       |      |  |
|--|-----|-----|----|-------------------|------|----------|---------|----------|---------|-----|-----|-------|---------|----|---|-------|------|--|
| CC4  | 100 | 120 | 66 | Downlink & Uplink | Low  | 37349.88 | 2234997 | 37302.36 | 2234205 | 0   | 120 | 23013 | 2234683 | 11 | 5 | 1 (4) | 18   |  |
|  |     |     |    |                   | Mid  | 38599.92 | 2255831 | 38405.52 | 2252591 | 102 |     | 23085 | 2255419 | 10 | 1 | 1 (4) | 214  |  |
|  |     |     |    |                   | High | 39849.96 | 2276665 | 39076.68 | 2263777 | 504 |     | 23157 | 2276155 | 9  | 1 | 0 (0) | 1010 |  |
| Channel spacing CC4-CC5=99.96 MHz (Note 1) |     |     |    |                   |      |          |         |          |         |     |     |       |         |    |   |       |      |  |
| CC5  | 100 | 120 | 66 | Downlink & Uplink | Low  | 37449.84 | 2236663 | 37402.32 | 2235871 | 0   | 120 | 23018 | 2236123 | 6  | 0 | 0 (0) | 0    |  |
|  |     |     |    |                   | Mid  | 38699.88 | 2257497 | 38505.48 | 2254257 | 102 |     | 23091 | 2257147 | 5  | 4 | 1 (4) | 220  |  |
|  |     |     |    |                   | High | 39949.92 | 2278331 | 39176.64 | 2265443 | 504 |     | 23163 | 2277883 | 4  | 0 | 1 (4) | 1016 |  |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

4.3.1.2.3.4.10 CA\_n260K

FFS

4.3.1.2.3.4.11 CA\_n260L

FFS

4.3.1.2.3.4.12 CA\_n260M

FFS

## 4.3.1.2.3.4.13 CA\_n260O

Table 4.3.1.2.3.4.13-1: NR Intra-Band contiguous CA configuration CA\_n260O (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

| CBW combination   | CC         | CBW [MHz]  | SCS [kHz] | carrier bandwidth [PRBs] | Range                               | Carrier centre [MHz]<br>Note 2   | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs]<br>Note 3 | COR ESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|---|------------|------------|-----------|--------------------------|-------------------------------------|--|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|-----------|--|---|--------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 50+100  | CC1<br>CC2 | 50<br>100  | 60        | 66<br>132                | Downlink & Uplink<br>Low, Mid, High | Same values as for Low, Mid, High range in Table 4.3.1.2.3.4.6-1 for CBW combination 50+100, CC1, CC2 and SCS=60 kHz.  |                        |               |                                   |                                |                    |       |                               |           |  |   |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 100+50  | CC1        | 100        | 60        | 132                      | Downlink & Uplink<br>Low            | 37050  | 2229999                | 37002.48      | 2229207                           | 0                              | 120                | 22995 | 2229499                       | 4         | 4  | 0 (0)                                   | 4                                    |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   |            |            |           |                          |                                     | 38475  | 2253749                | 38354.04      | 2251733                           | 102                            |                    | 23078 | 2253403                       | 2         | 9  | 1 (8)                                   | 119                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   |            |            |           |                          |                                     | 39901.32   | 2277521                | 39490.92      | 2270681                           | 504                            |                    | 23160 | 2277019                       | 2         | 4  | 0 (0)                                   | 508                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Channel spacing CC1-CC2=73.68 MHz (Note 1)  |            |            |           |                          |                                     |  |                        |               |                                   |                                |                    |       |                               |           |  |   |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 100+100   | CC2        | 50         | 60        | 66                       | Downlink & Uplink<br>Mid            | 37123.68   | 2231227                | 37099.92      | 2230831                           | 0                              | 120                | 23001 | 2231227                       | 0         | 5  | 1 (8)                                   | 13                                   |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   |            |            |           |                          |                                     | 38548.68   | 2254977                | 38451.48      | 2253357                           | 102                            |                    | 23083 | 2254843                       | 10        | 1  | 0 (0)                                   | 103                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|   |            |            |           |                          |                                     | 39975  | 2278749                | 39588.36      | 2272305                           | 504                            |                    | 23166 | 2278747                       | 10        | 4  | 1 (8)                                   | 516                                  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 100+100   | CC1<br>CC2 | 100<br>100 | 60        | 132<br>132               | Downlink & Uplink<br>High           | Same values as for Low, Mid, High range in Table 4.3.1.2.3.4.6-1 for CBW combination 100+100, CC1, CC2 and SCS=60 kHz. |                        |               |                                   |                                |                    |       |                               |           |  |   |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  |            |            |           |                          |                                     |  |                        |               |                                   |                                |                    |       |                               |           |  |   |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  |            |            |           |                          |                                     |  |                        |               |                                   |                                |                    |       |                               |           |  |   |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |            |            |           |                          |                                     |  |                        |               |                                   |                                |                    |       |                               |           |  |   |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |            |            |           |                          |                                     |  |                        |               |                                   |                                |                    |       |                               |           |  |   |                                      |  |  |  |  |  |  |  |  |  |  |  |  |  |

Table 4.3.1.2.3.4.13-2: NR Intra-Band contiguous CA configuration CA\_n260O (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

| CBW combination   | CC  | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN]  | point A [MHz] | absoluteFrequencyPoint A [ARFCN] | offsetToPointA [Carrier PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |  |  |  |  |  |  |  |  |  |  |
|---|---|-----------|-----------|-------------------------|-------------------|-----------------------------|---|---------------|----------------------------------|-------------------------------|--------------------|------|------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|--|--|--|--|--|--|--|--|--|--|
| 50+100  |   |           |           |                         |                   |                             |   |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| 50+100  | CC1 CC2                                   | 50 100    | 120       | 32 66                   | Downlink & Uplink | Low, Mid, High              | Same values as for Low, Mid, High range in Table 4.3.1.2.3.4.6-2 for CBW combination 50+100, CC1, CC2 and SCS=120 kHz.  |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| 100+50  | CC1                                       | 100       | 120       | 66                      | Downlink & Uplink | Low                         | 37050   | 2229999       | 37002.48                         | 2229207                       | 0                  | 120  | 22995                        | 2229499   | 2                                     | 2                                     | 0 (0) 4                             |  |  |  |  |  |  |  |  |  |  |
|   |   |           |           |                         |                   | Mid                         | 38475   | 2253749       | 38280.6                          | 2250509                       | 102                |      | 23078                        | 2253403   | 7                                     | 4                                     | 1 (4) 220                           |  |  |  |  |  |  |  |  |  |  |
|   |   |           |           |                         |                   | High                        | 39900.6   | 2277509       | 39127.32                         | 2264621                       | 504                |      | 23160                        | 2277019   | 7                                     | 2                                     | 0 (0) 1012                          |  |  |  |  |  |  |  |  |  |  |
|   | Channel spacing CC1-CC2=74.4 MHz (Note 1) |           |           |                         |                   |                             |   |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| 100+100   | CC2                                       | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 37124.4   | 2231239       | 37101.36                         | 2230855                       | 0                  | 120  | 23001                        | 2231227   | 6                                     | 1                                     | 1 (4) 10                            |  |  |  |  |  |  |  |  |  |  |
|   |   |           |           |                         |                   | Mid                         | 38549.4   | 2254989       | 38379.48                         | 2252157                       | 102                |      | 23084                        | 2255131   | 11                                    | 7                                     | 1 (4) 226                           |  |  |  |  |  |  |  |  |  |  |
|   |   |           |           |                         |                   | High                        | 39975   | 2278749       | 39226.2                          | 2266269                       | 504                |      | 23166                        | 2278747   | 11                                    | 1                                     | 1 (4) 1018                          |  |  |  |  |  |  |  |  |  |  |
| 100+100   | CC1 CC2                                   | 100 100   | 120       | 66 66                   | Downlink & Uplink | Low, Mid, High              | Same values as for Low, Mid, High range in Table 4.3.1.2.3.4.6-2 for CBW combination 100+100, CC1, CC2 and SCS=120 kHz. |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  |   |           |           |                         |                   |                             |   |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  |   |           |           |                         |                   |                             |   |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |   |           |           |                         |                   |                             |   |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |   |           |           |                         |                   |                             |   |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |

## 4.3.1.2.3.4.14 CA\_n260P

Table 4.3.1.2.3.4.14-1: NR Intra-Band contiguous CA configuration CA\_n260P (PCC=CC1 and SCC=CC2, CC3), SCS=60 kHz, nominal channel spacing

| CBW combination                            | CC  | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absoluteFrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |
|--|-----|-----------|-----------|-------------------------|-------------------|-----------------------------|------------------------|---------------|----------------------------------|--------------------------------|--------------------|-------|------------------------------|-----------|--|--|--------------------------------------|
| 50+50 +50                                  | CC1 | 50        | 60        | 66                      | Downlink & Uplink | Low 37025.04                | 2229583                | 37001.28      | 2229187                          | 0                              | 120                | 22995 | 2229499                      | 0         | 6                                      | 0 (0)                                    | 6                                    |
|  |     |           |           |                         |                   | Mid 38449.92                | 2253331                | 38352.72      | 2251711                          | 102                            |                    | 23078 | 2253403                      | 0         | 11                                     | 1 (8)                                    | 121                                  |
|  |     |           |           |                         |                   | High 39875.16               | 2277085                | 39488.52      | 2270641                          | 504                            |                    | 23160 | 2277019                      | 6         | 7                                      | 0 (0)                                    | 511                                  |
| Channel spacing CC1-CC2=49.92 MHz (Note 1) |     |           |           |                         |                   |                             |                        |               |                                  |                                |                    |       |                              |           |  |  |                                      |
|  | CC2 | 50        | 60        | 66                      | Downlink & Uplink | Low 37074.96                | 2230415                | 37051.2       | 2230019                          | 0                              | 120                | 22998 | 2230363                      | 8         | 0                                      | 1 (8)                                    | 8                                    |
|  |     |           |           |                         |                   | Mid 38499.84                | 2254163                | 38402.64      | 2252543                          | 102                            |                    | 23081 | 2254267                      | 8         | 13                                     | 1 (8)                                    | 123                                  |
|  |     |           |           |                         |                   | High 39925.08               | 2277917                | 39538.44      | 2271473                          | 504                            |                    | 23163 | 2277883                      | 2         | 2                                      | 1 (8)                                    | 514                                  |
| Channel spacing CC2-CC3=49.92 MHz (Note 1) |     |           |           |                         |                   |                             |                        |               |                                  |                                |                    |       |                              |           |  |  |                                      |
|  | CC3 | 50        | 60        | 66                      | Downlink & Uplink | Low 37124.88                | 2231247                | 37101.12      | 2230851                          | 0                              | 120                | 23001 | 2231227                      | 4         | 3                                      | 1 (8)                                    | 11                                   |
|  |     |           |           |                         |                   | Mid 38549.76                | 2254995                | 38452.56      | 2253375                          | 102                            |                    | 23083 | 2254843                      | 4         | 0                                      | 0 (0)                                    | 102                                  |
|  |     |           |           |                         |                   | High 39975                  | 2278749                | 39588.36      | 2272305                          | 504                            |                    | 23166 | 2278747                      | 10        | 4                                      | 1 (8)                                    | 516                                  |
|  | CC1 | 50        | 60        | 66                      | Downlink & Uplink | Low 37025.04                | 2229583                | 37001.28      | 2229187                          | 0                              | 120                | 22995 | 2229499                      | 0         | 6                                      | 0 (0)                                    | 6                                    |
|  |     |           |           |                         |                   | Mid 38424.96                | 2252915                | 38327.76      | 2251295                          | 102                            |                    | 23076 | 2252827                      | 8         | 5                                      | 0 (0)                                    | 107                                  |
|  |     |           |           |                         |                   | High 39826.32               | 2276271                | 39439.68      | 2269827                          | 504                            |                    | 23157 | 2276155                      | 4         | 3                                      | 0 (0)                                    | 507                                  |
| Channel spacing CC1-CC2=49.92 MHz (Note 1) |     |           |           |                         |                   |                             |                        |               |                                  |                                |                    |       |                              |           |  |  |                                      |
|  | CC2 | 50        | 60        | 66                      | Downlink & Uplink | Low 37074.96                | 2230415                | 37051.2       | 2230019                          | 0                              | 120                | 22998 | 2230363                      | 8         | 0                                      | 1 (8)                                    | 8                                    |
|  |     |           |           |                         |                   | Mid 38474.88                | 2253747                | 38377.68      | 2252127                          | 102                            |                    | 23079 | 2253691                      | 4         | 0                                      | 1 (8)                                    | 110                                  |
|  |     |           |           |                         |                   | High 39876.24               | 2277103                | 39489.6       | 2270659                          | 504                            |                    | 23160 | 2277019                      | 0         | 6                                      | 0 (0)                                    | 510                                  |
| Channel spacing CC2-CC3=73.68 MHz (Note 1) |     |           |           |                         |                   |                             |                        |               |                                  |                                |                    |       |                              |           |  |  |                                      |
|  | CC3 | 100       | 60        | 132                     | Downlink & Uplink | Low 37148.64                | 2231643                | 37101.12      | 2230851                          | 0                              | 120                | 23001 | 2231227                      | 4         | 3                                      | 1 (8)                                    | 11                                   |
|  |     |           |           |                         |                   | Mid 38548.56                | 2254975                | 38427.6       | 2252959                          | 102                            |                    | 23082 | 2254555                      | 0         | 3                                      | 1 (8)                                    | 113                                  |
|  |     |           |           |                         |                   | High 39949.92               | 2278331                | 39539.52      | 2271491                          | 504                            |                    | 23163 | 2277883                      | 8         | 0                                      | 1 (8)                                    | 512                                  |
|  | CC1 | 50        | 60        | 66                      | Downlink & Uplink | Low 37025.04                | 2229583                | 37001.28      | 2229187                          | 0                              | 120                | 22995 | 2229499                      | 0         | 6                                      | 0 (0)                                    | 6                                    |
|  |     |           |           |                         |                   | Mid 38424.96                | 2252915                | 38327.76      | 2251295                          | 102                            |                    | 23076 | 2252827                      | 8         | 5                                      | 0 (0)                                    | 107                                  |
|  |     |           |           |                         |                   | High 39827.64               | 2276293                | 39441         | 2269849                          | 504                            |                    | 23157 | 2276155                      | 6         | 1                                      | 0 (0)                                    | 505                                  |
| Channel spacing CC1-CC2=73.68 MHz (Note 1) |     |           |           |                         |                   |                             |                        |               |                                  |                                |                    |       |                              |           |  |  |                                      |
|  | CC2 | 100       | 60        | 132                     | Downlink & Uplink | Low 37098.72                | 2230811                | 37051.2       | 2230019                          | 0                              | 120                | 22998 | 2230363                      | 8         | 0                                      | 1 (8)                                    | 8                                    |
|  |     |           |           |                         |                   | Mid 38498.64                | 2254143                | 38377.68      | 2252127                          | 102                            |                    | 23079 | 2253691                      | 4         | 0                                      | 1 (8)                                    | 110                                  |
|  |     |           |           |                         |                   | High 39901.32               | 2277521                | 39490.92      | 2270681                          | 504                            |                    | 23160 | 2277019                      | 2         | 4                                      | 0 (0)                                    | 508                                  |

| Channel spacing CC2-CC3=73.68 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|--|-----|-----|----|-----|-------------------|------|----------|---------|----------|---------|-----|-----|-------|---------|----|----|-------|-----|
|  | CC3 | 50  | 60 | 66  | Downlink & Uplink | Low  | 37172.4  | 2232039 | 37148.64 | 2231643 | 0   | 120 | 23004 | 2232091 | 4  | 9  | 1 (8) | 17  |
|  |     |     |    |     |                   | Mid  | 38572.32 | 2255371 | 38475.12 | 2253751 | 102 |     | 23085 | 2255419 | 0  | 9  | 1 (8) | 119 |
|  |     |     |    |     |                   | High | 39975    | 2278749 | 39588.36 | 2272305 | 504 |     | 23166 | 2278747 | 10 | 4  | 1 (8) | 516 |
| 50+100<br>+100                             | CC1 | 50  | 60 | 66  | Downlink & Uplink | Low  | 37025.04 | 2229583 | 37001.28 | 2229187 | 0   | 120 | 22995 | 2229499 | 0  | 6  | 0 (0) | 6   |
|  |     |     |    |     |                   | Mid  | 38400    | 2252499 | 38302.8  | 2250879 | 102 |     | 23075 | 2252539 | 4  | 8  | 1 (8) | 118 |
|  |     |     |    |     |                   | High | 39776.28 | 2275437 | 39389.64 | 2268993 | 504 |     | 23154 | 2275291 | 10 | 0  | 0 (0) | 504 |
| Channel spacing CC1-CC2=73.68 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|  | CC2 | 100 | 60 | 132 | Downlink & Uplink | Low  | 37098.72 | 2230811 | 37051.2  | 2230019 | 0   | 120 | 22998 | 2230363 | 8  | 0  | 1 (8) | 8   |
|  |     |     |    |     |                   | Mid  | 38473.68 | 2253727 | 38352.72 | 2251711 | 102 |     | 23078 | 2253403 | 0  | 11 | 1 (8) | 121 |
|  |     |     |    |     |                   | High | 39849.96 | 2276665 | 39439.56 | 2269825 | 504 |     | 23157 | 2276155 | 6  | 3  | 0 (0) | 507 |
| Channel spacing CC2-CC3=99.96 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|  | CC3 | 100 | 60 | 132 | Downlink & Uplink | Low  | 37198.68 | 2232477 | 37151.16 | 2231685 | 0   | 120 | 23004 | 2232091 | 10 | 5  | 1 (8) | 13  |
|  |     |     |    |     |                   | Mid  | 38573.64 | 2255393 | 38452.68 | 2253777 | 102 |     | 23083 | 2254843 | 2  | 0  | 0 (0) | 102 |
|  |     |     |    |     |                   | High | 39949.92 | 2278331 | 39539.52 | 2271491 | 504 |     | 23163 | 2277883 | 8  | 0  | 1 (8) | 512 |
| 100+50<br>+50                              | CC1 | 100 | 60 | 132 | Downlink & Uplink | Low  | 37050    | 2229999 | 37002.48 | 2229207 | 0   | 120 | 22995 | 2229499 | 4  | 4  | 0 (0) | 4   |
|  |     |     |    |     |                   | Mid  | 38449.92 | 2253331 | 38328.96 | 2251315 | 102 |     | 23076 | 2252827 | 0  | 4  | 0 (0) | 106 |
|  |     |     |    |     |                   | High | 39851.4  | 2276689 | 39441    | 2269849 | 504 |     | 23157 | 2276155 | 6  | 1  | 0 (0) | 505 |
| Channel spacing CC1-CC2=73.68 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|  | CC2 | 50  | 60 | 66  | Downlink & Uplink | Low  | 37123.68 | 2231227 | 37099.92 | 2230831 | 0   | 120 | 23001 | 2231227 | 0  | 5  | 1 (8) | 13  |
|  |     |     |    |     |                   | Mid  | 38523.6  | 2254559 | 38426.4  | 2252939 | 102 |     | 23082 | 2254555 | 8  | 4  | 1 (8) | 114 |
|  |     |     |    |     |                   | High | 39925.08 | 2277917 | 39538.44 | 2271473 | 504 |     | 23163 | 2277883 | 2  | 2  | 1 (8) | 514 |
| Channel spacing CC2-CC3=49.92 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|  | CC3 | 50  | 60 | 66  | Downlink & Uplink | Low  | 37173.6  | 2232059 | 37149.84 | 2231663 | 0   | 120 | 23004 | 2232091 | 8  | 7  | 1 (8) | 15  |
|  |     |     |    |     |                   | Mid  | 38573.52 | 2255391 | 38476.32 | 2253771 | 102 |     | 23085 | 2255419 | 4  | 7  | 1 (8) | 117 |
|  |     |     |    |     |                   | High | 39975    | 2278749 | 39588.36 | 2272305 | 504 |     | 23166 | 2278747 | 10 | 4  | 1 (8) | 516 |
| 100+50<br>+100                             | CC1 | 100 | 60 | 132 | Downlink & Uplink | Low  | 37050    | 2229999 | 37002.48 | 2229207 | 0   | 120 | 22995 | 2229499 | 4  | 4  | 0 (0) | 4   |
|  |     |     |    |     |                   | Mid  | 38424.96 | 2252915 | 38304    | 2250899 | 102 |     | 23075 | 2252539 | 8  | 6  | 1 (8) | 116 |
|  |     |     |    |     |                   | High | 39802.56 | 2275875 | 39392.16 | 2269035 | 504 |     | 23155 | 2275579 | 4  | 13 | 1 (8) | 525 |
| Channel spacing CC1-CC2=73.68 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|  | CC2 | 50  | 60 | 66  | Downlink & Uplink | Low  | 37123.68 | 2231227 | 37099.92 | 2230831 | 0   | 120 | 23001 | 2231227 | 0  | 5  | 1 (8) | 13  |
|  |     |     |    |     |                   | Mid  | 38498.64 | 2254143 | 38401.44 | 2252523 | 102 |     | 23081 | 2254267 | 4  | 15 | 1 (8) | 125 |
|  |     |     |    |     |                   | High | 39876.24 | 2277103 | 39489.6  | 2270659 | 504 |     | 23160 | 2277019 | 0  | 6  | 0 (0) | 510 |
| Channel spacing CC2-CC3=73.68 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|  | CC3 | 100 | 60 | 132 | Downlink & Uplink | Low  | 37197.36 | 2232455 | 37149.84 | 2231663 | 0   | 120 | 23004 | 2232091 | 8  | 7  | 1 (8) | 15  |
|  |     |     |    |     |                   | Mid  | 38572.32 | 2255371 | 38451.36 | 2253355 | 102 |     | 23083 | 2254843 | 0  | 2  | 0 (0) | 104 |
|  |     |     |    |     |                   | High | 39949.92 | 2278331 | 39539.52 | 2271491 | 504 |     | 23163 | 2277883 | 8  | 0  | 1 (8) | 512 |
| 100+100<br>+50                             | CC1 | 100 | 60 | 132 | Downlink & Uplink | Low  | 37050    | 2229999 | 37002.48 | 2229207 | 0   | 120 | 22995 | 2229499 | 4  | 4  | 0 (0) | 4   |
|  |     |     |    |     |                   | Mid  | 38424.96 | 2252915 | 38304    | 2250899 | 102 |     | 23075 | 2252539 | 8  | 6  | 1 (8) | 116 |
|  |     |     |    |     |                   | High | 39801.36 | 2275855 | 39390.96 | 2269015 | 504 |     | 23155 | 2275579 | 0  | 15 | 1 (8) | 527 |
| Channel spacing CC1-CC2=99.96 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|  | CC2 | 100 | 60 | 132 | Downlink          | Low  | 37149.96 | 2231665 | 37102.44 | 2230873 | 0   | 120 | 23001 | 2231227 | 6  | 1  | 1 (8) | 9   |
|  |     |     |    |     |                   | Mid  | 38476.32 | 2253727 | 38431.36 | 2251711 | 102 |     | 23081 | 2254267 | 4  | 15 | 1 (8) | 125 |

|  |     |     |    |                         | &<br>Uplink             | Mid                  | 38524.92  | 2254581  | 38403.96 | 2252565 | 102 |       | 23081   | 2254267 | 10 | 11    | 1 (8) | 121 |  |
|--|-----|-----|----|-------------------------|-------------------------|----------------------|---|----------|----------|---------|-----|-------|---------|---------|----|-------|-------|-----|--|
|  |     |     |    |                         | High                    | 39901.32             | 2277521   | 39490.92 | 2270681  | 504     |     |       | 23160   | 2277019 | 2  | 4     | 0 (0) | 508 |  |
| Channel spacing CC2-CC3=73.68 MHz (Note 1)   |     |     |    |                         |                         |                      |   |          |          |         |     |       |         |         |    |       |       |     |  |
| CC3  | 50  | 60  | 66 | Downlink<br>&<br>Uplink | Low                     | 37223.64             | 2232893   | 37199.88 | 2232497  | 0       | 120 | 23007 | 2232955 | 2       | 10 | 1 (8) | 18    |     |  |
|  |     |     |    |                         | Mid                     | 38598.6              | 2255809   | 38501.4  | 2254189  | 102     |     | 23086 | 2255707 | 6       | 4  | 0 (0) | 106   |     |  |
|  |     |     |    |                         | High                    | 39975                | 2278749   | 39588.36 | 2272305  | 504     |     | 23166 | 2278747 | 10      | 4  | 1 (8) | 516   |     |  |
| 100+100<br>+100  | CC1 | 100 | 60 | 132                     | Downlink<br>&<br>Uplink | Low,<br>Mid,<br>High | Same values as for Low, Mid, High range in Table 4.3.1.2.3.4.7-1 for CBW combination 100+100+100, CC1, CC2, CC3 and SCS=60 kHz. |          |          |         |     |       |         |         |    |       |       |     |  |
| <p>Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.</p> <p>Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.</p> <p>Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> |     |     |    |                         |                         |                      |   |          |          |         |     |       |         |         |    |       |       |     |  |

**Table 4.3.1.2.3.4.14-2: NR Intra-Band contiguous CA configuration CA\_n260P (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing**

| CBW combination | CC   | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |      |
|-----------------|--|-----------|-----------|-------------------------|-------------------|-----------------------------|------------------------|---------------|----------------------------------|--------------------------------|--------------------|------|------------------------------|-----------|--|--|--------------------------------------|------|
| 50+50 +50       | CC1  | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 37025.04               | 2229583       | 37002                            | 2229199                        | 0                  | 120  | 22995                        | 2229499   | 6                                      | 2                                      | 0 (0)                                | 4    |
|                 |  |           |           |                         |                   | Mid                         | 38450.04               | 2253333       | 38280.12                         | 2250501                        | 102                |      | 23078                        | 2253403   | 11                                     | 4                                      | 1 (4)                                | 220  |
|                 |  |           |           |                         |                   | High                        | 39875.16               | 2277085       | 39126.36                         | 2264605                        | 504                |      | 23160                        | 2277019   | 3                                      | 3                                      | 0 (0)                                | 1014 |
|                 | Channel spacing CC1-CC2=49.92 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC2  | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 37074.96               | 2230415       | 37051.92                         | 2230031                        | 0                  | 120  | 22998                        | 2230363   | 10                                     | 3                                      | 0 (0)                                | 6    |
|                 |  |           |           |                         |                   | Mid                         | 38499.96               | 2254165       | 38330.04                         | 2251333                        | 102                |      | 23081                        | 2254267   | 3                                      | 6                                      | 1 (4)                                | 224  |
|                 |  |           |           |                         |                   | High                        | 39925.08               | 2277917       | 39176.28                         | 2265437                        | 504                |      | 23163                        | 2277883   | 7                                      | 0                                      | 1 (4)                                | 1016 |
|                 | Channel spacing CC2-CC3=49.92 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC3  | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 37124.88               | 2231247       | 37101.84                         | 2230863                        | 0                  | 120  | 23001                        | 2231227   | 2                                      | 1                                      | 1 (4)                                | 10   |
|                 |  |           |           |                         |                   | Mid                         | 38549.88               | 2254997       | 38379.96                         | 2252165                        | 102                |      | 23084                        | 2255131   | 7                                      | 7                                      | 1 (4)                                | 226  |
|                 |  |           |           |                         |                   | High                        | 39975                  | 2278749       | 39226.2                          | 2266269                        | 504                |      | 23166                        | 2278747   | 11                                     | 1                                      | 1 (4)                                | 1018 |
| 50+50 +100      | CC1  | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 37025.04               | 2229583       | 37002                            | 2229199                        | 0                  | 120  | 22995                        | 2229499   | 6                                      | 2                                      | 0 (0)                                | 4    |
|                 |  |           |           |                         |                   | Mid                         | 38424.96               | 2252915       | 38255.04                         | 2250083                        | 102                |      | 23076                        | 2252827   | 4                                      | 2                                      | 0 (0)                                | 208  |
|                 |  |           |           |                         |                   | High                        | 39825.6                | 2276259       | 39076.8                          | 2263779                        | 504                |      | 23157                        | 2276155   | 8                                      | 1                                      | 0 (0)                                | 1010 |
|                 | Channel spacing CC1-CC2=49.92 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC2  | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 37074.96               | 2230415       | 37051.92                         | 2230031                        | 0                  | 120  | 22998                        | 2230363   | 10                                     | 3                                      | 0 (0)                                | 6    |
|                 |  |           |           |                         |                   | Mid                         | 38474.88               | 2253747       | 38304.96                         | 2250915                        | 102                |      | 23079                        | 2253691   | 8                                      | 3                                      | 0 (0)                                | 210  |
|                 |  |           |           |                         |                   | High                        | 39875.52               | 2277091       | 39126.72                         | 2264611                        | 504                |      | 23160                        | 2277019   | 0                                      | 3                                      | 0 (0)                                | 1014 |
|                 | Channel spacing CC2-CC3=74.4 MHz (Note 1)  |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC3  | 100       | 120       | 66                      | Downlink & Uplink | Low                         | 37149.36               | 2231655       | 37101.84                         | 2230863                        | 0                  | 120  | 23001                        | 2231227   | 2                                      | 1                                      | 1 (4)                                | 10   |
|                 |  |           |           |                         |                   | Mid                         | 38549.28               | 2254987       | 38354.88                         | 2251747                        | 102                |      | 23082                        | 2254555   | 0                                      | 1                                      | 1 (4)                                | 214  |
|                 |  |           |           |                         |                   | High                        | 39949.92               | 2278331       | 39176.64                         | 2265443                        | 504                |      | 23163                        | 2277883   | 4                                      | 0                                      | 1 (4)                                | 1016 |
| 50+100 +50      | CC1  | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 37025.04               | 2229583       | 37002                            | 2229199                        | 0                  | 120  | 22995                        | 2229499   | 6                                      | 2                                      | 0 (0)                                | 4    |
|                 |  |           |           |                         |                   | Mid                         | 38424.96               | 2252915       | 38255.04                         | 2250083                        | 102                |      | 23076                        | 2252827   | 4                                      | 2                                      | 0 (0)                                | 208  |
|                 |  |           |           |                         |                   | High                        | 39826.2                | 2276269       | 39077.4                          | 2263789                        | 504                |      | 23157                        | 2276155   | 3                                      | 1                                      | 0 (0)                                | 1010 |
|                 | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC2  | 100       | 120       | 66                      | Downlink & Uplink | Low                         | 37099.44               | 2230823       | 37051.92                         | 2230031                        | 0                  | 120  | 22998                        | 2230363   | 10                                     | 3                                      | 0 (0)                                | 6    |
|                 |  |           |           |                         |                   | Mid                         | 38499.36               | 2254155       | 38304.96                         | 2250915                        | 102                |      | 23079                        | 2253691   | 8                                      | 3                                      | 0 (0)                                | 210  |
|                 |  |           |           |                         |                   | High                        | 39900.6                | 2277509       | 39127.32                         | 2264621                        | 504                |      | 23160                        | 2277019   | 7                                      | 2                                      | 0 (0)                                | 1012 |
|                 | Channel spacing CC2-CC3=74.4 MHz (Note 1)  |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC3  | 50        | 120       | 32                      | Downlink          | Low                         | 37173.84               | 2232063       | 37150.8                          | 2231679                        | 0                  | 120  | 23004                        | 2232091   | 2                                      | 3                                      | 1 (4)                                | 14   |

|                |     |     |     |    |                         |  |          |         |          |         |     |       |         |         |    |       |       |      |
|----------------|-----|-----|-----|----|-------------------------|--|----------|---------|----------|---------|-----|-------|---------|---------|----|-------|-------|------|
|                |     |     |     |    | &<br>Uplink             | Mid  | 38573.76 | 2255395 | 38403.84 | 2252563 | 102 |       | 23085   | 2255419 | 0  | 3     | 1 (4) | 218  |
|                |     |     |     |    | High                    | 39975                                      | 2278749  | 39226.2 | 2266269  | 504     |     | 23166 | 2278747 | 11      | 1  | 1 (4) | 1018  |      |
| 50+100<br>+100 | CC1 | 50  | 120 | 32 | Downlink<br>&<br>Uplink | Low  | 37025.04 | 2229583 | 37002    | 2229199 | 0   | 120   | 22995   | 2229499 | 6  | 2     | 0 (0) | 4    |
|                |     |     |     |    |                         | Mid  | 38400    | 2252499 | 38230.08 | 2249667 | 102 |       | 23075   | 2252539 | 8  | 3     | 1 (4) | 218  |
|                |     |     |     |    |                         | High                                       | 39775.56 | 2275425 | 39026.76 | 2262945 | 504 |       | 23154   | 2275291 | 5  | 0     | 0 (0) | 1008 |
|                |     |     |     |    |                         | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |          |         |          |         |     |       |         |         |    |       |       |      |
|                | CC2 | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 37099.44 | 2230823 | 37051.92 | 2230031 | 0   | 120   | 22998   | 2230363 | 10 | 3     | 0 (0) | 6    |
|                |     |     |     |    |                         | Mid  | 38474.4  | 2253739 | 38280    | 2250499 | 102 |       | 23078   | 2253403 | 0  | 5     | 1 (4) | 222  |
|                |     |     |     |    |                         | High                                       | 39849.96 | 2276665 | 39076.68 | 2263777 | 504 |       | 23157   | 2276155 | 9  | 1     | 0 (0) | 1010 |
|                |     |     |     |    |                         | Channel spacing CC2-CC3=99.96 MHz (Note 1) |          |         |          |         |     |       |         |         |    |       |       |      |
|                | CC3 | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 37199.4  | 2232489 | 37151.88 | 2231697 | 0   | 120   | 23004   | 2232091 | 5  | 2     | 1 (4) | 12   |
|                |     |     |     |    |                         | Mid  | 38574.36 | 2255405 | 38379.96 | 2252165 | 102 |       | 23084   | 2255131 | 7  | 7     | 1 (4) | 226  |
|                |     |     |     |    |                         | High                                       | 39949.92 | 2278331 | 39176.64 | 2265443 | 504 |       | 23163   | 2277883 | 4  | 0     | 1 (4) | 1016 |
|                |     |     |     |    |                         | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |          |         |          |         |     |       |         |         |    |       |       |      |
| 100+50<br>+50  | CC1 | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 37050    | 2229999 | 37002.48 | 2229207 | 0   | 120   | 22995   | 2229499 | 2  | 2     | 0 (0) | 4    |
|                |     |     |     |    |                         | Mid  | 38450.04 | 2253333 | 38255.64 | 2250093 | 102 |       | 23076   | 2252827 | 11 | 1     | 0 (0) | 206  |
|                |     |     |     |    |                         | High                                       | 39850.68 | 2276677 | 39077.4  | 2263789 | 504 |       | 23157   | 2276155 | 3  | 1     | 0 (0) | 1010 |
|                |     |     |     |    |                         | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |          |         |          |         |     |       |         |         |    |       |       |      |
|                | CC2 | 50  | 120 | 32 | Downlink<br>&<br>Uplink | Low  | 37124.4  | 2231239 | 37101.36 | 2230855 | 0   | 120   | 23001   | 2231227 | 6  | 1     | 1 (4) | 10   |
|                |     |     |     |    |                         | Mid  | 38524.44 | 2254573 | 38354.52 | 2251741 | 102 |       | 23082   | 2254555 | 3  | 1     | 1 (4) | 214  |
|                |     |     |     |    |                         | High                                       | 39925.08 | 2277917 | 39176.28 | 2265437 | 504 |       | 23163   | 2277883 | 7  | 0     | 1 (4) | 1016 |
|                |     |     |     |    |                         | Channel spacing CC2-CC3=49.92 MHz (Note 1) |          |         |          |         |     |       |         |         |    |       |       |      |
|                | CC3 | 50  | 120 | 32 | Downlink<br>&<br>Uplink | Low  | 37174.32 | 2232071 | 37151.28 | 2231687 | 0   | 120   | 23004   | 2232091 | 10 | 2     | 1 (4) | 12   |
|                |     |     |     |    |                         | Mid  | 38574.36 | 2255405 | 38404.44 | 2252573 | 102 |       | 23085   | 2255419 | 7  | 2     | 1 (4) | 216  |
|                |     |     |     |    |                         | High                                       | 39975    | 2278749 | 39226.2  | 2266269 | 504 |       | 23166   | 2278747 | 11 | 1     | 1 (4) | 1018 |
|                |     |     |     |    |                         | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |          |         |          |         |     |       |         |         |    |       |       |      |
| 100+50<br>+100 | CC1 | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 37050    | 2229999 | 37002.48 | 2229207 | 0   | 120   | 22995   | 2229499 | 2  | 2     | 0 (0) | 4    |
|                |     |     |     |    |                         | Mid  | 38424.96 | 2252915 | 38230.56 | 2249675 | 102 |       | 23075   | 2252539 | 4  | 3     | 1 (4) | 218  |
|                |     |     |     |    |                         | High                                       | 39801.12 | 2275851 | 39027.84 | 2262963 | 504 |       | 23155   | 2275579 | 8  | 7     | 1 (4) | 1030 |
|                |     |     |     |    |                         | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |          |         |          |         |     |       |         |         |    |       |       |      |
|                | CC2 | 50  | 120 | 32 | Downlink<br>&<br>Uplink | Low  | 37124.4  | 2231239 | 37101.36 | 2230855 | 0   | 120   | 23001   | 2231227 | 6  | 1     | 1 (4) | 10   |
|                |     |     |     |    |                         | Mid  | 38499.36 | 2254155 | 38329.44 | 2251323 | 102 |       | 23081   | 2254267 | 8  | 6     | 1 (4) | 224  |
|                |     |     |     |    |                         | High                                       | 39875.52 | 2277091 | 39126.72 | 2264611 | 504 |       | 23160   | 2277019 | 0  | 3     | 0 (0) | 1014 |
|                |     |     |     |    |                         | Channel spacing CC2-CC3=74.4 MHz (Note 1)  |          |         |          |         |     |       |         |         |    |       |       |      |
|                | CC3 | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 37198.8  | 2232479 | 37151.28 | 2231687 | 0   | 120   | 23004   | 2232091 | 10 | 2     | 1 (4) | 12   |
|                |     |     |     |    |                         | Mid  | 38573.76 | 2255395 | 38379.36 | 2252155 | 102 |       | 23083   | 2254843 | 0  | 0     | 0 (0) | 204  |
|                |     |     |     |    |                         | High                                       | 39949.92 | 2278331 | 39176.64 | 2265443 | 504 |       | 23163   | 2277883 | 4  | 0     | 1 (4) | 1016 |
|                |     |     |     |    |                         | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |          |         |          |         |     |       |         |         |    |       |       |      |
| 100+100<br>+50 | CC1 | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 37050    | 2229999 | 37002.48 | 2229207 | 0   | 120   | 22995   | 2229499 | 2  | 2     | 0 (0) | 4    |
|                |     |     |     |    |                         | Mid  | 38424.96 | 2252915 | 38230.56 | 2249675 | 102 |       | 23075   | 2252539 | 4  | 3     | 1 (4) | 218  |
|                |     |     |     |    |                         | High                                       | 39800.64 | 2275843 | 39027.36 | 2262955 | 504 |       | 23154   | 2275291 | 0  | 0     | 0 (0) | 1008 |
|                |     |     |     |    |                         | Channel spacing CC1-CC2=99.96 MHz (Note 1) |          |         |          |         |     |       |         |         |    |       |       |      |
|                | CC2 | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 37149.96 | 2231665 | 37102.44 | 2230873 | 0   | 120   | 23001   | 2231227 | 9  | 0     | 1 (4) | 8    |
|                |     |     |     |    |                         | Mid  | 38524.92 | 2254581 | 38330.52 | 2251341 | 102 |       | 23081   | 2254267 | 11 | 5     | 1 (4) | 222  |
|                |     |     |     |    |                         | High                                       | 39900.6  | 2277509 | 39127.32 | 2264621 | 504 |       | 23160   | 2277019 | 7  | 2     | 0 (0) | 1012 |

|              | CC3               | 50                | 120 | 32             | Downlink & Uplink | Channel spacing CC2-CC3=74.4 MHz (Note 1) |  |         |          |         |     |     |       |         |    |   |       |      |  |  |  |
|--------------|-------------------|-------------------|-----|----------------|-------------------|---|--|---------|----------|---------|-----|-----|-------|---------|----|---|-------|------|--|--|--|
|              |                   |                   |     |                |                   | Low                                       | 37224.36   | 2232905 | 37201.32 | 2232521 | 0   | 120 | 23007 | 2232955 | 1  | 4 | 1 (4) | 16   |  |  |  |
|              |                   |                   |     |                |                   | Mid                                       | 38599.32   | 2255821 | 38429.4  | 2252989 | 102 |     | 23086 | 2255707 | 3  | 1 | 0 (0) | 206  |  |  |  |
|              |                   |                   |     |                |                   | High                                      | 39975  | 2278749 | 39226.2  | 2266269 | 504 |     | 23166 | 2278747 | 11 | 1 | 1 (4) | 1018 |  |  |  |
| 100+100 +100 | CC1<br>CC2<br>CC3 | 100<br>100<br>100 | 120 | 66<br>66<br>66 | Downlink & Uplink | Low,<br>Mid,<br>High                      | Same values as for Low, Mid, High range in Table 4.3.1.2.3.4.7-2 for CBW combination 100+100+100, CC1, CC2, CC3 and SCS=120 kHz. |         |          |         |     |     |       |         |    |   |       |      |  |  |  |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.4.15 CA\_n260Q

FFS

## 4.3.1.2.3.5 NR Intra-band contiguous CA configurations for CA\_n261

## 4.3.1.2.3.5.1 CA\_n261B

Editor's note: CBW=400 MHz for NR band n261 is only supported by for SCS 120kHz. Test frequencies for CA\_n261B are currently limited to SCS 120kHz for all CCs.

Test frequencies for mixed numerologies between CCs is FFS.

Table 4.3.1.2.3.5.1-1: NR Intra-Band contiguous CA configuration CA\_n261B (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

| CBW combination                             | CC  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET #0 Index Note 4 | offset ToPortA (SIB1) [PRBs] Note 4 |      |
|---|-----|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|-----------|---------------------------------------|-------------------------|-------------------------------------|------|
| 50+400                                      | CC1 | 50        | 120       | 32                       | Downlink & Uplink | Low                         | 27525                  | 2071249       | 27501.96                          | 2070865                        | 0                  | 120   | 22446                         | 2071387   | 9                                     | 7                       | 1 (4)                               | 22   |
|   |     |           |           |                          |                   | Mid                         | 27725.04               | 2074583       | 27555.12                          | 2071751                        | 102                |       | 22457                         | 2074555   | 10                                    | 0                       | 1 (4)                               | 212  |
|   |     |           |           |                          |                   | High                        | 27933                  | 2078049       | 27184.2                           | 206569                         | 504                |       | 22469                         | 2078011   | 5                                     | 0                       | 1 (4)                               | 1016 |
| Channel spacing CC1-CC2=216.96 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                         |                                     |      |
| CC2   | 400 | 120       | 264       | Downlink & Uplink        | Low               | 27741.96                    | 2074865                | 27551.88      | 2071697                           | 0                              | 120                | 22448 | 2071963                       | 1         | 1                                     | 0 (0)                   | 2                                   |      |
|   |     |           |           |                          | Mid               | 27942                       | 2078199                | 27605.04      | 2072583                           | 102                            |                    | 22460 | 2075419                       | 2         | 2                                     | 1 (4)                   | 216                                 |      |
|   |     |           |           |                          | High              | 28149.96                    | 2081665                | 27234.12      | 2066401                           | 504                            |                    | 22472 | 2078875                       | 9         | 1                                     | 1 (4)                   | 1018                                |      |
| 100+400                                     | CC1 | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27550.08               | 2071667       | 27502.56                          | 2070875                        | 0                  | 120   | 22446                         | 2071387   | 4                                     | 7                       | 1 (4)                               | 22   |
|   |     |           |           |                          |                   | Mid                         | 27725.04               | 2074583       | 27530.64                          | 2071343                        | 102                |       | 22456                         | 2074267   | 10                                    | 5                       | 1 (4)                               | 222  |
|   |     |           |           |                          |                   | High                        | 27907.44               | 2077623       | 27134.16                          | 2064735                        | 504                |       | 22466                         | 2077147   | 2                                     | 3                       | 0 (0)                               | 1014 |
| Channel spacing CC1-CC2=242.52 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                         |                                     |      |
| CC2   | 400 | 120       | 264       | Downlink & Uplink        | Low               | 27792.6                     | 2075709                | 27602.52      | 2072541                           | 0                              | 120                | 22451 | 2072827                       | 11        | 1                                     | 0 (0)                   | 2                                   |      |
|   |     |           |           |                          | Mid               | 27967.56                    | 2078625                | 27630.6       | 2073009                           | 102                            |                    | 22461 | 2075707                       | 5         | 0                                     | 0 (0)                   | 204                                 |      |
|   |     |           |           |                          | High              | 28149.96                    | 2081665                | 27234.12      | 2066401                           | 504                            |                    | 22472 | 2078875                       | 9         | 1                                     | 1 (4)                   | 1018                                |      |
| 200+400                                     | CC1 | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 27600                  | 2072499       | 27504.96                          | 2070915                        | 0                  | 120   | 22446                         | 2071387   | 8                                     | 5                       | 1 (4)                               | 18   |
|   |     |           |           |                          |                   | Mid                         | 27725.04               | 2074583       | 27483.12                          | 2070551                        | 102                |       | 22453                         | 2073403   | 10                                    | 2                       | 1 (4)                               | 216  |
|   |     |           |           |                          |                   | High                        | 27855                  | 2076749       | 27034.2                           | 2063069                        | 504                |       | 22460                         | 2075419   | 7                                     | 0                       | 0 (0)                               | 1008 |
| Channel spacing CC1-CC2=294.96 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                         |                                     |      |
| CC2   | 400 | 120       | 264       | Downlink & Uplink        | Low               | 27894.96                    | 2077415                | 27704.88      | 2074247                           | 0                              | 120                | 22457 | 2074555                       | 10        | 2                                     | 0 (0)                   | 4                                   |      |
|   |     |           |           |                          | Mid               | 28020                       | 2079499                | 27683.04      | 2073883                           | 102                            |                    | 22464 | 2076571                       | 0         | 0                                     | 0 (0)                   | 204                                 |      |
|   |     |           |           |                          | High              | 28149.96                    | 2081665                | 27234.12      | 2066401                           | 504                            |                    | 22472 | 2078875                       | 9         | 1                                     | 1 (4)                   | 1018                                |      |
| 400+400                                     | CC1 | 400       | 120       | 264                      | Downlink & Uplink | Low                         | 27700.08               | 2074167       | 27510                             | 2070999                        | 0                  | 120   | 22446                         | 2071387   | 2                                     | 2                       | 1 (4)                               | 12   |
|   |     |           |           |                          |                   | Mid                         | 27725.04               | 2074583       | 27388.08                          | 2068967                        | 102                |       | 22447                         | 2071675   | 10                                    | 0                       | 0 (0)                               | 204  |
|   |     |           |           |                          |                   | High                        | 27750                  | 2074999       | 26834.16                          | 2059735                        | 504                |       | 22449                         | 2072251   | 6                                     | 3                       | 1 (4)                               | 1022 |
| Channel spacing CC1-CC2=399.96 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                         |                                     |      |
| CC2   | 400 | 120       | 264       | Downlink & Uplink        | Low               | 28100.04                    | 2080833                | 27909.96      | 2077665                           | 0                              | 120                | 22469 | 2078011                       | 5         | 0                                     | 1 (4)                   | 8                                   |      |
|   |     |           |           |                          | Mid               | 28125                       | 2081249                | 27788.04      | 2075633                           | 102                            |                    | 22471 | 2078587                       | 1         | 7                                     | 1 (4)                   | 226                                 |      |
|   |     |           |           |                          | High              | 28149.96                    | 2081665                | 27234.12      | 2066401                           | 504                            |                    | 22472 | 2078875                       | 9         | 1                                     | 1 (4)                   | 1018                                |      |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4.A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter

$\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

#### 4.3.1.2.3.5.2 CA\_n261C

Editor's note: CBW=400 MHz for NR band n261 is only supported by for SCS 120kHz. Test frequencies for CA\_n261C are currently limited to SCS 120kHz for all CCs.  
Test frequencies for mixed numerologies between CCs is FFS.

**Table 4.3.1.2.3.5.2-1: NR Intra-Band contiguous CA configuration CA\_n261C (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing**

| CBW combination | CC  | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2                 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs ] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier COR ESET #0 [RBs] Note 3 | COR ESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |
|-----------------|-----|-----------|-----------|-------------------------|-------------------|---|------------------------|---------------|-----------------------------------|----------------------------------|--------------------|-------|-------------------------------|------------------|---|---|--------------------------------------|
| 50+400 +400     | CC1 | 50        | 120       | 32                      | Downlink & Uplink | Low 27525                                   | 2071249                | 27501.96      | 2070865                           | 0                                | 120                | 22446 | 2071387                       | 9                | 7                                       | 1 (4)                                   | 22                                   |
|                 |     |           |           |                         |                   | Mid 27525                                   | 2071249                | 27355.08      | 2068417                           | 102                              |                    | 22446 | 2071387                       | 9                | 7                                       | 1 (4)                                   | 226                                  |
|                 |     |           |           |                         |                   | High 27533.04                               | 2071383                | 26784.24      | 2058903                           | 504                              |                    | 22446 | 2071387                       | 2                | 2                                       | 1 (4)                                   | 1020                                 |
|                 |     |           |           |                         |                   | Channel spacing CC1-CC2=216.96 MHz (Note 1) |                        |               |                                   |                                  |                    |       |                               |                  |   |   |                                      |
|                 | CC2 | 400       | 120       | 264                     | Downlink & Uplink | Low 27741.96                                | 2074865                | 27551.88      | 2071697                           | 0                                | 120                | 22448 | 2071963                       | 1                | 1                                       | 0 (0)                                   | 2                                    |
|                 |     |           |           |                         |                   | Mid 27741.96                                | 2074865                | 27405         | 2069249                           | 102                              |                    | 22448 | 2071963                       | 1                | 1                                       | 0 (0)                                   | 206                                  |
|                 |     |           |           |                         |                   | High 27750                                  | 2074999                | 26834.16      | 2059735                           | 504                              |                    | 22449 | 2072251                       | 6                | 3                                       | 1 (4)                                   | 1022                                 |
|                 |     |           |           |                         |                   | Channel spacing CC2-CC3=399.96 MHz (Note 1) |                        |               |                                   |                                  |                    |       |                               |                  |   |   |                                      |
|                 | CC3 | 400       | 120       | 264                     | Downlink & Uplink | Low 28141.92                                | 2081531                | 27951.84      | 2078363                           | 0                                | 120                | 22472 | 2078875                       | 4                | 7                                       | 1 (4)                                   | 22                                   |
|                 |     |           |           |                         |                   | Mid 28141.92                                | 2081531                | 27804.96      | 2075915                           | 102                              |                    | 22472 | 2078875                       | 4                | 7                                       | 1 (4)                                   | 226                                  |
|                 |     |           |           |                         |                   | High 28149.96                               | 2081665                | 27234.12      | 2066401                           | 504                              |                    | 22472 | 2078875                       | 9                | 1                                       | 1 (4)                                   | 1018                                 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.5.3

## CA\_n261D

Table 4.3.1.2.3.5.3-1: NR Intra-Band contiguous CA configuration CA\_n261D (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

| CBW combination  | CC  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |     |
|--|---|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|--------------------------------------|-----|
| 50+200   | CC1   | 50        | 60        | 66                       | Downlink & Uplink | Low                         | 27525                  | 2071249       | 27501.24                          | 2070853                        | 0                  | 120  | 22446                         | 2071387   | 6                                     | 16                                    | 1 (8)                                | 24  |
|  |   |           |           |                          |                   | Mid                         | 27825                  | 2076249       | 27727.8                           | 2074629                        | 102                |      | 22463                         | 2076283   | 10                                    | 7                                     | 1 (8)                                | 117 |
|  |   |           |           |                          |                   | High                        | 28128.72               | 2081311       | 27742.08                          | 2074867                        | 504                |      | 22480                         | 2081179   | 0                                     | 2                                     | 0 (0)                                | 506 |
|  | Channel spacing CC1-CC2=121.2 MHz (Note 1)  |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |     |
|  | CC2   | 200       | 60        | 264                      | Downlink & Uplink | Low                         | 27646.2                | 2073269       | 27551.16                          | 2071685                        | 0                  | 120  | 22448                         | 2071963   | 2                                     | 3                                     | 0 (0)                                | 3   |
|  |   |           |           |                          |                   | Mid                         | 27946.2                | 2078269       | 27777.72                          | 2075461                        | 102                |      | 22466                         | 2077147   | 6                                     | 10                                    | 1 (8)                                | 120 |
|  |   |           |           |                          |                   | High                        | 28249.92               | 2083331       | 27792                             | 2075699                        | 504                |      | 22483                         | 2082043   | 8                                     | 4                                     | 0 (0)                                | 508 |
|  | CC1   | 100       | 60        | 132                      | Downlink & Uplink | Low                         | 27550.08               | 2071667       | 27502.56                          | 2070875                        | 0                  | 120  | 22446                         | 2071387   | 8                                     | 14                                    | 1 (8)                                | 22  |
|  |   |           |           |                          |                   | Mid                         | 27825                  | 2076249       | 27704.04                          | 2074233                        | 102                |      | 22461                         | 2075707   | 10                                    | 0                                     | 0 (0)                                | 102 |
|  |   |           |           |                          |                   | High                        | 28102.44               | 2080873       | 27692.04                          | 2074033                        | 504                |      | 22478                         | 2080603   | 6                                     | 15                                    | 1 (8)                                | 527 |
|  | Channel spacing CC1-CC2=147.48 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |     |
|  | CC2   | 200       | 60        | 264                      | Downlink & Uplink | Low                         | 27697.56               | 2074125       | 27602.52                          | 2072541                        | 0                  | 120  | 22451                         | 2072827   | 10                                    | 3                                     | 0 (0)                                | 3   |
|  |   |           |           |                          |                   | Mid                         | 27972.48               | 2078707       | 27804                             | 2075899                        | 102                |      | 22467                         | 2077435   | 0                                     | 6                                     | 0 (0)                                | 108 |
|  |   |           |           |                          |                   | High                        | 28249.92               | 2083331       | 27792                             | 2075699                        | 504                |      | 22483                         | 2082043   | 8                                     | 4                                     | 0 (0)                                | 508 |
|  | CC1   | 200       | 60        | 264                      | Downlink & Uplink | Low                         | 27600                  | 2072499       | 27504.96                          | 2070915                        | 0                  | 120  | 22446                         | 2071387   | 4                                     | 11                                    | 1 (8)                                | 19  |
|  |   |           |           |                          |                   | Mid                         | 27825                  | 2076249       | 27656.52                          | 2073441                        | 102                |      | 22459                         | 2075131   | 10                                    | 10                                    | 1 (8)                                | 120 |
|  |   |           |           |                          |                   | High                        | 28050                  | 2079999       | 27592.08                          | 2072367                        | 504                |      | 22472                         | 2078875   | 4                                     | 10                                    | 1 (8)                                | 522 |
|  | Channel spacing CC1-CC2=199.92 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |     |
|  | CC2   | 200       | 60        | 264                      | Downlink & Uplink | Low                         | 27799.92               | 2075831       | 27704.88                          | 2074247                        | 0                  | 120  | 22457                         | 2074555   | 8                                     | 5                                     | 0 (0)                                | 5   |
|  |   |           |           |                          |                   | Mid                         | 28024.92               | 2079581       | 27856.44                          | 2076773                        | 102                |      | 22470                         | 2078299   | 2                                     | 5                                     | 0 (0)                                | 107 |
|  |   |           |           |                          |                   | High                        | 28249.92               | 2083331       | 27792                             | 2075699                        | 504                |      | 22483                         | 2082043   | 8                                     | 4                                     | 0 (0)                                | 508 |
| <p>Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.</p> <p>Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.</p> <p>Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> |   |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |     |

Table 4.3.1.2.3.5.3-2: NR Intra-Band contiguous CA configuration CA\_n261D (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

| CBW combination  | CC  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |      |
|--|---|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|---------------------------------------|--------------------------------------|------|
| 50+200   | CC1   | 50        | 120       | 32                       | Downlink & Uplink | Low                         | 27525                  | 2071249       | 27501.96                          | 2070865                        | 0                  | 120  | 22446                         | 2071387   | 9                                     | 7                                     | 1 (4)                                | 22   |
|  |   |           |           |                          |                   | Mid                         | 27825                  | 2076249       | 27655.08                          | 2073417                        | 102                |      | 22463                         | 2076283   | 5                                     | 3                                     | 1 (4)                                | 218  |
|  |   |           |           |                          |                   | High                        | 28128                  | 2081299       | 27379.2                           | 2068819                        | 504                |      | 22480                         | 2081179   | 0                                     | 1                                     | 0 (0)                                | 1010 |
|  | Channel spacing CC1-CC2=121.92 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |      |
|  | CC2   | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 27646.92               | 2073281       | 27551.88                          | 2071697                        | 0                  | 120  | 22448                         | 2071963   | 1                                     | 1                                     | 0 (0)                                | 2    |
|  |   |           |           |                          |                   | Mid                         | 27946.92               | 2078281       | 27705                             | 2074249                        | 102                |      | 22466                         | 2077147   | 9                                     | 4                                     | 1 (4)                                | 220  |
|  |   |           |           |                          |                   | High                        | 28249.92               | 2083331       | 27429.12                          | 2069651                        | 504                |      | 22483                         | 2082043   | 4                                     | 2                                     | 0 (0)                                | 1012 |
|  | CC1   | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27550.08               | 2071667       | 27502.56                          | 2070875                        | 0                  | 120  | 22446                         | 2071387   | 4                                     | 7                                     | 1 (4)                                | 22   |
|  |   |           |           |                          |                   | Mid                         | 27825                  | 2076249       | 27630.6                           | 2073009                        | 102                |      | 22461                         | 2075707   | 5                                     | 0                                     | 0 (0)                                | 204  |
|  |   |           |           |                          |                   | High                        | 28102.44               | 2080873       | 27329.16                          | 2067985                        | 504                |      | 22478                         | 2080603   | 9                                     | 7                                     | 1 (4)                                | 1030 |
|  | Channel spacing CC1-CC2=147.48 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |      |
|  | CC2   | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 27697.56               | 2074125       | 27602.52                          | 2072541                        | 0                  | 120  | 22451                         | 2072827   | 11                                    | 1                                     | 0 (0)                                | 2    |
|  |   |           |           |                          |                   | Mid                         | 27972.48               | 2078707       | 27730.56                          | 2074675                        | 102                |      | 22467                         | 2077435   | 0                                     | 3                                     | 0 (0)                                | 210  |
|  |   |           |           |                          |                   | High                        | 28249.92               | 2083331       | 27429.12                          | 2069651                        | 504                |      | 22483                         | 2082043   | 4                                     | 2                                     | 0 (0)                                | 1012 |
|  | CC1   | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 27600                  | 2072499       | 27504.96                          | 2070915                        | 0                  | 120  | 22446                         | 2071387   | 8                                     | 5                                     | 1 (4)                                | 18   |
|  |   |           |           |                          |                   | Mid                         | 27825                  | 2076249       | 27583.08                          | 2072217                        | 102                |      | 22459                         | 2075131   | 5                                     | 5                                     | 1 (4)                                | 222  |
|  |   |           |           |                          |                   | High                        | 28050                  | 2079999       | 27229.2                           | 2066319                        | 504                |      | 22472                         | 2078875   | 2                                     | 5                                     | 1 (4)                                | 1026 |
|  | Channel spacing CC1-CC2=199.92 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |      |
|  | CC2   | 200       | 120       | 132                      | Downlink & Uplink | Low                         | 27799.92               | 2075831       | 27704.88                          | 2074247                        | 0                  | 120  | 22457                         | 2074555   | 10                                    | 2                                     | 0 (0)                                | 4    |
|  |   |           |           |                          |                   | Mid                         | 28024.92               | 2079581       | 27783                             | 2075549                        | 102                |      | 22470                         | 2078299   | 7                                     | 2                                     | 0 (0)                                | 208  |
|  |   |           |           |                          |                   | High                        | 28249.92               | 2083331       | 27429.12                          | 2069651                        | 504                |      | 22483                         | 2082043   | 4                                     | 2                                     | 0 (0)                                | 1012 |
| <p>Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.</p> <p>Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.</p> <p>Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> |   |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |                                       |                                      |      |

4.3.1.2.3.5.4 CA\_n261E

**Table 4.3.1.2.3.5.4-1: NR Intra-Band contiguous CA configuration CA\_n261E (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing.**

FFS

**Table 4.3.1.2.3.5.4-2: NR Intra-Band contiguous CA configuration CA\_n261E (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing.**

FFS

4.3.1.2.3.5.5 CA\_n261F

**Table 4.3.1.2.3.5.5-1: NR Intra-Band contiguous CA configuration CA\_n261F (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing.**

FFS

**Table 4.3.1.2.3.5.5-2: NR Intra-Band contiguous CA configuration CA\_n261F (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing.**

FFS

## 4.3.1.2.3.5.6

## CA\_n261G

Table 4.3.1.2.3.5.6-1: NR Intra-Band contiguous CA configuration CA\_n261G (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

| CBW combination | CC   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |
|-----------------|--|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|-----------|---------------------------------------|---------------------------------------|--------------------------------------|
| 50+100          | CC1  | 50        | 60        | 66                       | Downlink & Uplink | Low  | 27525                       | 2071249                | 27501.24      | 2070853                           | 0                              | 120                | 22446 | 2071387                       | 6         | 16                                    | 1 (8)                                 | 24                                   |
|                 |  |           |           |                          |                   | Mid  | 27874.92                    | 2077081                | 27777.72      | 2075461                           | 102                            |                    | 22466 | 2077147                       | 6         | 10                                    | 1 (8)                                 | 120                                  |
|                 |  |           |           |                          |                   | High | 28226.28                    | 2082937                | 27839.64      | 2076493                           | 504                            |                    | 22486 | 2082907                       | 6         | 2                                     | 1 (8)                                 | 514                                  |
|                 | Channel spacing CC1-CC2=73.68 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                                       |                                      |
|                 | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27598.68                    | 2072477                | 27551.16      | 2071685                           | 0                              | 120                | 22448 | 2071963                       | 2         | 3                                     | 0 (0)                                 | 3                                    |
|                 |  |           |           |                          |                   | Mid  | 27948.6                     | 2078309                | 27827.64      | 2076293                           | 102                            |                    | 22469 | 2078011                       | 2         | 13                                    | 1 (8)                                 | 123                                  |
|                 |  |           |           |                          |                   | High | 28299.96                    | 2084165                | 27889.56      | 2077325                           | 504                            |                    | 22489 | 2083771                       | 2         | 5                                     | 1 (8)                                 | 517                                  |
| 100+100         | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27550.08                    | 2071667                | 27502.56      | 2070875                           | 0                              | 120                | 22446 | 2071387                       | 8         | 14                                    | 1 (8)                                 | 22                                   |
|                 |  |           |           |                          |                   | Mid  | 27874.92                    | 2077081                | 27753.96      | 2075065                           | 102                            |                    | 22464 | 2076571                       | 6         | 3                                     | 0 (0)                                 | 105                                  |
|                 |  |           |           |                          |                   | High | 28200                       | 2082499                | 27789.6       | 2075659                           | 504                            |                    | 22483 | 2082043                       | 0         | 0                                     | 1 (8)                                 | 512                                  |
|                 | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                                       |                                      |
|                 | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27650.04                    | 2073333                | 27602.52      | 2072541                           | 0                              | 120                | 22451 | 2072827                       | 10        | 3                                     | 0 (0)                                 | 3                                    |
|                 |  |           |           |                          |                   | Mid  | 27974.88                    | 2078747                | 27853.92      | 2076731                           | 102                            |                    | 22470 | 2078299                       | 8         | 0                                     | 1 (8)                                 | 110                                  |
|                 |  |           |           |                          |                   | High | 28299.96                    | 2084165                | 27889.56      | 2077325                           | 504                            |                    | 22489 | 2083771                       | 2         | 5                                     | 1 (8)                                 | 517                                  |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 4.3.1.2.3.5.6-2: NR Intra-Band contiguous CA configuration CA\_n261G (PCC=CC1 and SCC=CC2), SCS=120 kHz, nominal channel spacing

| CBW combination                            | CC  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |      |
|--|---|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|--|--------------------------------------|------|
| 50+100                                     | CC1                                       | 50        | 120       | 32                       | Downlink & Uplink | Low                         | 27525                  | 2071249       | 27501.96                          | 2070865                        | 0                  | 120  | 22446                         | 2071387   | 9                                     | 7                                      | 1 (4)                                | 22   |
|  |   |           |           |                          |                   | Mid                         | 27875.04               | 2077083       | 27705.12                          | 2074251                        | 102                |      | 22466                         | 2077147   | 8                                     | 4                                      | 1 (4)                                | 220  |
|  |   |           |           |                          |                   | High                        | 28225.56               | 2082925       | 27476.76                          | 2070445                        | 504                |      | 22486                         | 2082907   | 3                                     | 1                                      | 1 (4)                                | 1018 |
|  | Channel spacing CC1-CC2=74.4 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |  |                                      |      |
|  | CC2                                       | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27599.4                | 2072489       | 27551.88                          | 2071697                        | 0                  | 120  | 22448                         | 2071963   | 1                                     | 1                                      | 0 (0)                                | 2    |
|  |   |           |           |                          |                   | Mid                         | 27949.44               | 2078323       | 27755.04                          | 2075083                        | 102                |      | 22469                         | 2078011   | 0                                     | 6                                      | 1 (4)                                | 224  |
|  |   |           |           |                          |                   | High                        | 28299.96               | 2084165       | 27526.68                          | 2071277                        | 504                |      | 22489                         | 2083771   | 7                                     | 2                                      | 1 (4)                                | 1020 |
|  | CC1                                       | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27550.08               | 2071667       | 27502.56                          | 2070875                        | 0                  | 120  | 22446                         | 2071387   | 4                                     | 7                                      | 1 (4)                                | 22   |
|  |   |           |           |                          |                   | Mid                         | 27875.04               | 2077083       | 27680.64                          | 2073843                        | 102                |      | 22464                         | 2076571   | 8                                     | 1                                      | 0 (0)                                | 206  |
|  |   |           |           |                          |                   | High                        | 28200                  | 2082499       | 27426.72                          | 2069611                        | 504                |      | 22483                         | 2082043   | 0                                     | 0                                      | 1 (4)                                | 1016 |
| Channel spacing CC1-CC2=99.96 MHz (Note 1) |   |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |  |                                      |      |
|  | CC2                                       | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27650.04               | 2073333       | 27602.52                          | 2072541                        | 0                  | 120  | 22451                         | 2072827   | 11                                    | 1                                      | 0 (0)                                | 2    |
|  |   |           |           |                          |                   | Mid                         | 27975                  | 2078749       | 27780.6                           | 2075509                        | 102                |      | 22470                         | 2078299   | 3                                     | 0                                      | 1 (4)                                | 212  |
|  |   |           |           |                          |                   | High                        | 28299.96               | 2084165       | 27526.68                          | 2071277                        | 504                |      | 22489                         | 2083771   | 7                                     | 2                                      | 1 (4)                                | 1020 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4.A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.5.7 CA\_n261H

Table 4.3.1.2.3.5.7-1: NR Intra-Band contiguous CA configuration CA\_n261H (PCC=CC1 and SCC=CC2, CC3), SCS=60 kHz, nominal channel spacing

| CBW combination   | CC   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |
|---|--|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|-----------|---------------------------------------|---------------------------------------|--------------------------------------|
| 50+100 +100   | CC1  | 50        | 60        | 66                       | Downlink & Uplink | Low  | 27525                       | 2071249                | 27501.24      | 2070853                           | 0                              | 120                | 22446 | 2071387                       | 6         | 16                                    | 1 (8)                                 | 24                                   |
|   |  |           |           |                          |                   | Mid  | 27825                       | 2076249                | 27727.8       | 2074629                           | 102                            |                    | 22463 | 2076283                       | 10        | 7                                     | 1 (8)                                 | 117                                  |
|   |  |           |           |                          |                   | High | 28126.32                    | 2081271                | 27739.68      | 2074827                           | 504                            |                    | 22480 | 2081179                       | 4         | 5                                     | 0 (0)                                 | 509                                  |
|   | Channel spacing CC1-CC2=73.68 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                                       |                                      |
|   | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27598.68                    | 2072477                | 27551.16      | 2071685                           | 0                              | 120                | 22448 | 2071963                       | 2         | 3                                     | 0 (0)                                 | 3                                    |
|   |  |           |           |                          |                   | Mid  | 27898.68                    | 2077477                | 27777.72      | 2075461                           | 102                            |                    | 22466 | 2077147                       | 6         | 10                                    | 1 (8)                                 | 120                                  |
|   |  |           |           |                          |                   | High | 28200                       | 2082499                | 27789.6       | 2075659                           | 504                            |                    | 22483 | 2082043                       | 0         | 0                                     | 1 (8)                                 | 512                                  |
|   | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                                       |                                      |
|   | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27698.64                    | 2074143                | 27651.12      | 2073351                           | 0                              | 120                | 22454 | 2073691                       | 4         | 0                                     | 1 (8)                                 | 8                                    |
|   |  |           |           |                          |                   | Mid  | 27998.64                    | 2079143                | 27877.68      | 2077127                           | 102                            |                    | 22472 | 2078875                       | 8         | 15                                    | 1 (8)                                 | 125                                  |
|   |  |           |           |                          |                   | High | 28299.96                    | 2084165                | 27889.56      | 2077325                           | 504                            |                    | 22489 | 2083771                       | 2         | 5                                     | 1 (8)                                 | 517                                  |
| 100+100 +100  | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27550.08                    | 2071667                | 27502.56      | 2070875                           | 0                              | 120                | 22446 | 2071387                       | 8         | 14                                    | 1 (8)                                 | 22                                   |
|   |  |           |           |                          |                   | Mid  | 27825                       | 2076249                | 27704.04      | 2074233                           | 102                            |                    | 22461 | 2075707                       | 10        | 0                                     | 0 (0)                                 | 102                                  |
|   |  |           |           |                          |                   | High | 28100.04                    | 2080833                | 27689.64      | 2073993                           | 504                            |                    | 22477 | 2080315                       | 10        | 2                                     | 0 (0)                                 | 506                                  |
|   | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                                       |                                      |
|   | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27650.04                    | 2073333                | 27602.52      | 2072541                           | 0                              | 120                | 22451 | 2072827                       | 10        | 3                                     | 0 (0)                                 | 3                                    |
|   |  |           |           |                          |                   | Mid  | 27924.96                    | 2077915                | 27804         | 2075899                           | 102                            |                    | 22467 | 2077435                       | 0         | 6                                     | 0 (0)                                 | 108                                  |
|   |  |           |           |                          |                   | High | 28200                       | 2082499                | 27789.6       | 2075659                           | 504                            |                    | 22483 | 2082043                       | 0         | 0                                     | 1 (8)                                 | 512                                  |
|   | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                                       |                                      |
|   | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27750                       | 2074999                | 27702.48      | 2074207                           | 0                              | 120                | 22457 | 2074555                       | 0         | 1                                     | 1 (8)                                 | 9                                    |
|   |  |           |           |                          |                   | Mid  | 28024.92                    | 2079581                | 27903.96      | 2077565                           | 102                            |                    | 22473 | 2079163                       | 2         | 3                                     | 1 (8)                                 | 113                                  |
|   |  |           |           |                          |                   | High | 28299.96                    | 2084165                | 27889.56      | 2077325                           | 504                            |                    | 22489 | 2083771                       | 2         | 5                                     | 1 (8)                                 | 517                                  |
| <p>Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.</p> <p>Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.</p> <p>Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> <p>Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> |  |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |                                       |                                       |                                      |

Table 4.3.1.2.3.5.7-2: NR Intra-Band contiguous CA configuration CA\_n261H (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing

| CBW combination | CC   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |      |
|-----------------|--|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|---------------------------------------|--|--------------------------------------|------|
| 50+100 +100     | CC1  | 50        | 120       | 32                       | Downlink & Uplink | Low                         | 27525                  | 2071249       | 27501.96                          | 2070865                        | 0                  | 120  | 22446                         | 2071387   | 9                                     | 7                                      | 1 (4)                                | 22   |
|                 |  |           |           |                          |                   | Mid                         | 27825                  | 2076249       | 27655.08                          | 2073417                        | 102                |      | 22463                         | 2076283   | 5                                     | 3                                      | 1 (4)                                | 218  |
|                 |  |           |           |                          |                   | High                        | 28125.6                | 2081259       | 27376.8                           | 2068779                        | 504                |      | 22480                         | 2081179   | 8                                     | 2                                      | 0 (0)                                | 1012 |
|                 | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |  |                                      |      |
|                 | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27599.4                | 2072489       | 27551.88                          | 2071697                        | 0                  | 120  | 22448                         | 2071963   | 1                                     | 1                                      | 0 (0)                                | 2    |
|                 |  |           |           |                          |                   | Mid                         | 27899.4                | 2077489       | 27705                             | 2074249                        | 102                |      | 22466                         | 2077147   | 9                                     | 4                                      | 1 (4)                                | 220  |
|                 |  |           |           |                          |                   | High                        | 28200                  | 2082499       | 27426.72                          | 2069611                        | 504                |      | 22483                         | 2082043   | 0                                     | 0                                      | 1 (4)                                | 1016 |
|                 | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |  |                                      |      |
|                 | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27699.36               | 2074155       | 27651.84                          | 2073363                        | 0                  | 120  | 22454                         | 2073691   | 8                                     | 3                                      | 0 (0)                                | 6    |
|                 |  |           |           |                          |                   | Mid                         | 27999.36               | 2079155       | 27804.96                          | 2075915                        | 102                |      | 22472                         | 2078875   | 4                                     | 7                                      | 1 (4)                                | 226  |
|                 |  |           |           |                          |                   | High                        | 28299.36               | 2084165       | 27526.68                          | 2071277                        | 504                |      | 22489                         | 2083771   | 7                                     | 2                                      | 1 (4)                                | 1020 |
| 100+100 +100    | CC1  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27550.08               | 2071667       | 27502.56                          | 2070875                        | 0                  | 120  | 22446                         | 2071387   | 4                                     | 7                                      | 1 (4)                                | 22   |
|                 |  |           |           |                          |                   | Mid                         | 27825                  | 2076249       | 27630.6                           | 2073009                        | 102                |      | 22461                         | 2075707   | 5                                     | 0                                      | 0 (0)                                | 204  |
|                 |  |           |           |                          |                   | High                        | 28100.04               | 2080833       | 27326.76                          | 2067945                        | 504                |      | 22477                         | 2080315   | 5                                     | 1                                      | 0 (0)                                | 1010 |
|                 | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |  |                                      |      |
|                 | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27650.04               | 2073333       | 27602.52                          | 2072541                        | 0                  | 120  | 22451                         | 2072827   | 11                                    | 1                                      | 0 (0)                                | 2    |
|                 |  |           |           |                          |                   | Mid                         | 27924.96               | 2077915       | 27730.56                          | 2074675                        | 102                |      | 22467                         | 2077435   | 0                                     | 3                                      | 0 (0)                                | 210  |
|                 |  |           |           |                          |                   | High                        | 28200                  | 2082499       | 27426.72                          | 2069611                        | 504                |      | 22483                         | 2082043   | 0                                     | 0                                      | 1 (4)                                | 1016 |
|                 | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |                                       |  |                                      |      |
|                 | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27750                  | 2074999       | 27702.48                          | 2074207                        | 0                  | 120  | 22457                         | 2074555   | 6                                     | 0                                      | 1 (4)                                | 8    |
|                 |  |           |           |                          |                   | Mid                         | 28024.92               | 2079581       | 27830.52                          | 2076341                        | 102                |      | 22473                         | 2079163   | 7                                     | 1                                      | 1 (4)                                | 214  |
|                 |  |           |           |                          |                   | High                        | 28299.36               | 2084165       | 27526.68                          | 2071277                        | 504                |      | 22489                         | 2083771   | 7                                     | 2                                      | 1 (4)                                | 1020 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta f_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.5.8

## CA\_n261I

Table 4.3.1.2.3.5.8-1: NR Intra-Band contiguous CA configuration CA\_n261I (PCC=CC1, SCC=CC2, CC3, CC4), SCS=60 kHz, nominal channel spacing

| CBW combination                            | CC  | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |
|--|-----|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|-----------|--|--|--------------------------------------|
| 50+100 +100+100                            | CC1 | 50        | 60        | 66                       | Downlink & Uplink | Low 27525                   | 2071249                | 27501.24      | 2070853                           | 0                              | 120                | 22446 | 2071387                       | 6         | 16                                     | 1 (8)                                    | 24                                   |
|  |     |           |           |                          |                   | Mid 27774.96                | 2075415                | 27677.76      | 2073795                           | 102                            |                    | 22460 | 2075419                       | 4         | 5                                      | 1 (8)                                    | 115                                  |
|  |     |           |           |                          |                   | High 28026.36               | 2079605                | 27639.72      | 2073161                           | 504                            |                    | 22474 | 2079451                       | 2         | 0                                      | 0 (0)                                    | 504                                  |
| Channel spacing CC1-CC2=73.68 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|  | CC2 | 100       | 60        | 132                      | Downlink & Uplink | Low 27598.68                | 2072477                | 27551.16      | 2071685                           | 0                              | 120                | 22448 | 2071963                       | 2         | 3                                      | 0 (0)                                    | 3                                    |
|  |     |           |           |                          |                   | Mid 27848.64                | 2076643                | 27727.68      | 2074627                           | 102                            |                    | 22463 | 2076283                       | 0         | 8                                      | 1 (8)                                    | 118                                  |
|  |     |           |           |                          |                   | High 28100.04               | 2080833                | 27689.64      | 2073993                           | 504                            |                    | 22477 | 2080315                       | 10        | 2                                      | 0 (0)                                    | 506                                  |
| Channel spacing CC2-CC3=99.96 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|  | CC3 | 100       | 60        | 132                      | Downlink & Uplink | Low 27698.64                | 2074143                | 27651.12      | 2073351                           | 0                              | 120                | 22454 | 2073691                       | 4         | 0                                      | 1 (8)                                    | 8                                    |
|  |     |           |           |                          |                   | Mid 27948.6                 | 2078309                | 27827.64      | 2076293                           | 102                            |                    | 22469 | 2078011                       | 2         | 13                                     | 1 (8)                                    | 123                                  |
|  |     |           |           |                          |                   | High 28200                  | 2082499                | 27789.6       | 2075659                           | 504                            |                    | 22483 | 2082043                       | 0         | 0                                      | 1 (8)                                    | 512                                  |
| Channel spacing CC3-CC4=99.96 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|  | CC4 | 100       | 60        | 132                      | Downlink & Uplink | Low 27798.6                 | 2075809                | 27751.08      | 2075017                           | 0                              | 120                | 22460 | 2075419                       | 6         | 5                                      | 1 (8)                                    | 13                                   |
|  |     |           |           |                          |                   | Mid 28048.56                | 2079975                | 27927.6       | 2077959                           | 102                            |                    | 22474 | 2079451                       | 4         | 2                                      | 0 (0)                                    | 104                                  |
|  |     |           |           |                          |                   | High 28299.96               | 2084165                | 27889.56      | 2077325                           | 504                            |                    | 22489 | 2083771                       | 2         | 5                                      | 1 (8)                                    | 517                                  |
|  | CC1 | 100       | 60        | 132                      | Downlink & Uplink | Low 27550.08                | 2071667                | 27502.56      | 2070875                           | 0                              | 120                | 22446 | 2071387                       | 8         | 14                                     | 1 (8)                                    | 22                                   |
|  |     |           |           |                          |                   | Mid 27774.96                | 2075415                | 27654         | 2073399                           | 102                            |                    | 22459 | 2075131                       | 4         | 14                                     | 1 (8)                                    | 124                                  |
|  |     |           |           |                          |                   | High 28000.08               | 2079167                | 27589.68      | 2072327                           | 504                            |                    | 22472 | 2078875                       | 8         | 13                                     | 1 (8)                                    | 525                                  |
| Channel spacing CC1-CC2=99.96 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|  | CC2 | 100       | 60        | 132                      | Downlink & Uplink | Low 27650.04                | 2073333                | 27602.52      | 2072541                           | 0                              | 120                | 22451 | 2072827                       | 10        | 3                                      | 0 (0)                                    | 3                                    |
|  |     |           |           |                          |                   | Mid 27874.92                | 2077081                | 27753.96      | 2075065                           | 102                            |                    | 22464 | 2076571                       | 6         | 3                                      | 0 (0)                                    | 105                                  |
|  |     |           |           |                          |                   | High 28100.04               | 2080833                | 27689.64      | 2073993                           | 504                            |                    | 22477 | 2080315                       | 10        | 2                                      | 0 (0)                                    | 506                                  |
| Channel spacing CC2-CC3=99.96 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|  | CC3 | 100       | 60        | 132                      | Downlink & Uplink | Low 27750                   | 2074999                | 27702.48      | 2074207                           | 0                              | 120                | 22457 | 2074555                       | 0         | 1                                      | 1 (8)                                    | 9                                    |
|  |     |           |           |                          |                   | Mid 27974.88                | 2078747                | 27853.92      | 2076731                           | 102                            |                    | 22470 | 2078299                       | 8         | 0                                      | 1 (8)                                    | 110                                  |
|  |     |           |           |                          |                   | High 28200                  | 2082499                | 27789.6       | 2075659                           | 504                            |                    | 22483 | 2082043                       | 0         | 0                                      | 1 (8)                                    | 512                                  |
| Channel spacing CC3-CC4=99.96 MHz (Note 1) |     |           |           |                          |                   |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|  | CC4 | 100       | 60        | 132                      | Downlink &        | Low 27849.96                | 2076665                | 27802.44      | 2075873                           | 0                              | 120                | 22463 | 2076283                       | 2         | 6                                      | 1 (8)                                    | 14                                   |
|  |     |           |           |                          |                   | Mid 28074.84                | 2080413                | 27953.88      | 2078397                           | 102                            |                    | 22476 | 2080027                       | 10        | 5                                      | 1 (8)                                    | 115                                  |

|   |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
|---|--|--|--|--|--------|------|----------|---------|----------|---------|-----|--|-------|---------|---|---|-------|-----|
|   |  |  |  |  | Uplink | High | 28299.96 | 2084165 | 27889.56 | 2077325 | 504 |  | 22489 | 2083771 | 2 | 5 | 1 (8) | 517 |
| Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
| Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
| Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |
| Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |  |  |  |  |        |      |          |         |          |         |     |  |       |         |   |   |       |     |

Table 4.3.1.2.3.5.8-2: NR Intra-Band contiguous CA configuration CA\_n261I (PCC=CC1, SCC=CC2, CC3,CC4), SCS=120 kHz, nominal channel spacing

| CBW combination  | CC   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |      |
|------------------|--|-----------|-----------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|------|
| 50+100 +100+100  | CC1  | 50        | 120       | 32                       | Downlink & Uplink | Low                         | 27525                  | 2071249       | 27501.96                          | 2070865                        | 0                  | 120  | 22446                         | 2071387   | 9                                      | 7  | 1 (4)                                | 22   |
|                  |  |           |           |                          |                   | Mid                         | 27774.96               | 2075415       | 27605.04                          | 2072583                        | 102                |      | 22460                         | 2075419   | 2                                      | 2  | 1 (4)                                | 216  |
|                  |  |           |           |                          |                   | High                        | 28025.64               | 2079593       | 27276.84                          | 2067113                        | 504                |      | 22474                         | 2079451   | 1                                      | 0  | 0 (0)                                | 1008 |
|                  | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                  | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27599.4                | 2072489       | 27551.88                          | 2071697                        | 0                  | 120  | 22448                         | 2071963   | 1                                      | 1  | 0 (0)                                | 2    |
|                  |  |           |           |                          |                   | Mid                         | 27849.36               | 2076655       | 27654.96                          | 2073415                        | 102                |      | 22463                         | 2076283   | 6                                      | 3  | 1 (4)                                | 218  |
|                  |  |           |           |                          |                   | High                        | 28100.04               | 2080833       | 27326.76                          | 2067945                        | 504                |      | 22477                         | 2080315   | 5                                      | 1  | 0 (0)                                | 1010 |
|                  | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                  | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27699.36               | 2074155       | 27651.84                          | 2073363                        | 0                  | 120  | 22454                         | 2073691   | 8                                      | 3  | 0 (0)                                | 6    |
|                  |  |           |           |                          |                   | Mid                         | 27949.32               | 2078321       | 27754.92                          | 2075081                        | 102                |      | 22469                         | 2078011   | 1                                      | 6  | 1 (4)                                | 224  |
|                  |  |           |           |                          |                   | High                        | 28200                  | 2082499       | 27426.72                          | 2069611                        | 504                |      | 22483                         | 2082043   | 0                                      | 0  | 1 (4)                                | 1016 |
|                  | Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                  | CC4  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27799.32               | 2075821       | 27751.8                           | 2075029                        | 0                  | 120  | 22460                         | 2075419   | 3                                      | 2  | 1 (4)                                | 12   |
|                  |  |           |           |                          |                   | Mid                         | 28049.28               | 2079987       | 27854.88                          | 2076747                        | 102                |      | 22474                         | 2079451   | 8                                      | 0  | 0 (0)                                | 204  |
|                  |  |           |           |                          |                   | High                        | 28299.96               | 2084165       | 27526.68                          | 2071277                        | 504                |      | 22489                         | 2083771   | 7                                      | 2  | 1 (4)                                | 1020 |
| 100+100 +100+100 | CC1  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27550.08               | 2071667       | 27502.56                          | 2070875                        | 0                  | 120  | 22446                         | 2071387   | 4                                      | 7  | 1 (4)                                | 22   |
|                  |  |           |           |                          |                   | Mid                         | 27774.96               | 2075415       | 27580.56                          | 2072175                        | 102                |      | 22459                         | 2075131   | 2                                      | 7  | 1 (4)                                | 226  |
|                  |  |           |           |                          |                   | High                        | 28000.08               | 2079167       | 27226.8                           | 2066279                        | 504                |      | 22472                         | 2078875   | 10                                     | 6  | 1 (4)                                | 1028 |
|                  | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                  | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27650.04               | 2073333       | 27602.52                          | 2072541                        | 0                  | 120  | 22451                         | 2072827   | 11                                     | 1  | 0 (0)                                | 2    |
|                  |  |           |           |                          |                   | Mid                         | 27874.92               | 2077081       | 27680.52                          | 2073841                        | 102                |      | 22464                         | 2076571   | 9                                      | 1  | 0 (0)                                | 206  |
|                  |  |           |           |                          |                   | High                        | 28100.04               | 2080833       | 27326.76                          | 2067945                        | 504                |      | 22477                         | 2080315   | 5                                      | 1  | 0 (0)                                | 1010 |
|                  | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                  | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27750                  | 2074999       | 27702.48                          | 2074207                        | 0                  | 120  | 22457                         | 2074555   | 6                                      | 0  | 1 (4)                                | 8    |
|                  |  |           |           |                          |                   | Mid                         | 27974.88               | 2078747       | 27780.48                          | 2075507                        | 102                |      | 22470                         | 2078299   | 4                                      | 0  | 1 (4)                                | 212  |
|                  |  |           |           |                          |                   | High                        | 28200                  | 2082499       | 27426.72                          | 2069611                        | 504                |      | 22483                         | 2082043   | 0                                      | 0  | 1 (4)                                | 1016 |
|                  | Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |                          |                   |                             |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                  | CC4  | 100       | 120       | 66                       | Downlink & Uplink | Low                         | 27849.96               | 2076665       | 27802.44                          | 2075873                        | 0                  | 120  | 22463                         | 2076283   | 1                                      | 3  | 1 (4)                                | 14   |
|                  |  |           |           |                          |                   | Mid                         | 28074.84               | 2080413       | 27880.44                          | 2077173                        | 102                |      | 22476                         | 2080027   | 11                                     | 2  | 1 (4)                                | 216  |
|                  |  |           |           |                          |                   | High                        | 28299.96               | 2084165       | 27526.68                          | 2071277                        | 504                |      | 22489                         | 2083771   | 7                                      | 2  | 1 (4)                                | 1020 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

- Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.
- Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta f_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.
- Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.5.9

## CA\_n261J

Table 4.3.1.2.3.5.9-1: NR Intra-Band contiguous CA configuration CA\_n261J (PCC=CC1, SCC=CC2, CC3, CC4), SCS=60 kHz, nominal channel spacing

| CBW combination             | CC   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |
|-----------------------------|--|-----------|-----------|--------------------------|-------------------|------|-----------------------------|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|-------|-------------------------------|-----------|--|--|--------------------------------------|
| 50+100<br>+100+100<br>+100  | CC1  | 50        | 60        | 66                       | Downlink & Uplink | Low  | 27525                       | 2071249                | 27501.24      | 2070853                           | 0                              | 120                | 22446 | 2071387                       | 6         | 16                                     | 1 (8)                                    | 24                                   |
|                             |  |           |           |                          |                   | Mid  | 27724.92                    | 2074581                | 27627.72      | 2072961                           | 102                            |                    | 22457 | 2074555                       | 10        | 2                                      | 1 (8)                                    | 112                                  |
|                             |  |           |           |                          |                   | High | 27926.4                     | 2077939                | 27539.76      | 2071495                           | 504                            |                    | 22469 | 2078011                       | 0         | 11                                     | 1 (8)                                    | 523                                  |
|                             | Channel spacing CC1-CC2=73.68 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|                             | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27598.68                    | 2072477                | 27551.16      | 2071685                           | 0                              | 120                | 22448 | 2071963                       | 2         | 3                                      | 0 (0)                                    | 3                                    |
|                             |  |           |           |                          |                   | Mid  | 27798.6                     | 2075809                | 27677.64      | 2073793                           | 102                            |                    | 22460 | 2075419                       | 6         | 5                                      | 1 (8)                                    | 115                                  |
|                             |  |           |           |                          |                   | High | 28000.08                    | 2079167                | 27589.68      | 2072327                           | 504                            |                    | 22472 | 2078875                       | 8         | 13                                     | 1 (8)                                    | 525                                  |
|                             | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|                             | CC3  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27698.64                    | 2074143                | 27651.12      | 2073351                           | 0                              | 120                | 22454 | 2073691                       | 4         | 0                                      | 1 (8)                                    | 8                                    |
|                             |  |           |           |                          |                   | Mid  | 27898.56                    | 2077475                | 27777.6       | 2075459                           | 102                            |                    | 22466 | 2077147                       | 8         | 10                                     | 1 (8)                                    | 120                                  |
|                             |  |           |           |                          |                   | High | 28100.04                    | 2080833                | 27689.64      | 2073993                           | 504                            |                    | 22477 | 2080315                       | 10        | 2                                      | 0 (0)                                    | 506                                  |
|                             | Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|                             | CC4  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27798.6                     | 2075809                | 27751.08      | 2075017                           | 0                              | 120                | 22460 | 2075419                       | 6         | 5                                      | 1 (8)                                    | 13                                   |
|                             |  |           |           |                          |                   | Mid  | 27998.52                    | 2079141                | 27877.56      | 2077125                           | 102                            |                    | 22472 | 2078875                       | 10        | 15                                     | 1 (8)                                    | 125                                  |
|                             |  |           |           |                          |                   | High | 28200                       | 2082499                | 27789.6       | 2075659                           | 504                            |                    | 22483 | 2082043                       | 0         | 0                                      | 1 (8)                                    | 512                                  |
|                             | Channel spacing CC4-CC5=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|                             | CC5  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27898.56                    | 2077475                | 27851.04      | 2076683                           | 0                              | 120                | 22466 | 2077147                       | 8         | 10                                     | 1 (8)                                    | 18                                   |
|                             |  |           |           |                          |                   | Mid  | 28098.48                    | 2080807                | 27977.52      | 2078791                           | 102                            |                    | 22477 | 2080315                       | 0         | 5                                      | 0 (0)                                    | 107                                  |
|                             |  |           |           |                          |                   | High | 28299.96                    | 2084165                | 27889.56      | 2077325                           | 504                            |                    | 22489 | 2083771                       | 2         | 5                                      | 1 (8)                                    | 517                                  |
| 100+100<br>+100+100<br>+100 | CC1  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27550.08                    | 2071667                | 27502.56      | 2070875                           | 0                              | 120                | 22446 | 2071387                       | 8         | 14                                     | 1 (8)                                    | 22                                   |
|                             |  |           |           |                          |                   | Mid  | 27724.92                    | 2074581                | 27603.96      | 2072565                           | 102                            |                    | 22456 | 2074267                       | 10        | 11                                     | 1 (8)                                    | 121                                  |
|                             |  |           |           |                          |                   | High | 27900.12                    | 2077501                | 27489.72      | 2070661                           | 504                            |                    | 22466 | 2077147                       | 6         | 8                                      | 1 (8)                                    | 520                                  |
|                             | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|                             | CC2  | 100       | 60        | 132                      | Downlink & Uplink | Low  | 27650.04                    | 2073333                | 27602.52      | 2072541                           | 0                              | 120                | 22451 | 2072827                       | 10        | 3                                      | 0 (0)                                    | 3                                    |
|                             |  |           |           |                          |                   | Mid  | 27824.88                    | 2076247                | 27703.92      | 2074231                           | 102                            |                    | 22461 | 2075707                       | 0         | 1                                      | 0 (0)                                    | 103                                  |
|                             |  |           |           |                          |                   | High | 28000.08                    | 2079167                | 27589.68      | 2072327                           | 504                            |                    | 22472 | 2078875                       | 8         | 13                                     | 1 (8)                                    | 525                                  |
|                             | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |      |                             |                        |               |                                   |                                |                    |       |                               |           |  |  |                                      |
|                             | CC3  | 100       | 60        | 132                      | Downlink &        | Low  | 27750                       | 2074999                | 27702.48      | 2074207                           | 0                              | 120                | 22457 | 2074555                       | 0         | 1                                      | 1 (8)                                    | 9                                    |
|                             |  |           |           |                          |                   | Mid  | 27924.84                    | 2077913                | 27803.88      | 2075897                           | 102                            |                    | 22467 | 2077435                       | 2         | 6                                      | 0 (0)                                    | 108                                  |

|  |  |    |     | Uplink                  | High | 28100.04 | 2080833 | 27689.64 | 2073993 | 504 |     | 22477 | 2080315 | 10 | 2  | 0 (0) | 506 |  |  |  |  |
|--|--|----|-----|-------------------------|------|----------|---------|----------|---------|-----|-----|-------|---------|----|----|-------|-----|--|--|--|--|
| Channel spacing CC3-CC4=99.96 MHz (Note 1) |  |    |     |                         |      |          |         |          |         |     |     |       |         |    |    |       |     |  |  |  |  |
| CC4  | 100  | 60 | 132 | Downlink<br>&<br>Uplink | Low  | 27849.96 | 2076665 | 27802.44 | 2075873 | 0   | 120 | 22463 | 2076283 | 2  | 6  | 1 (8) | 14  |  |  |  |  |
|  |  |    |     |                         | Mid  | 28024.8  | 2079579 | 27903.84 | 2077563 | 102 |     | 22473 | 2079163 | 4  | 3  | 1 (8) | 113 |  |  |  |  |
|  |  |    |     |                         | High | 28200    | 2082499 | 27789.6  | 2075659 | 504 |     | 22483 | 2082043 | 0  | 0  | 1 (8) | 512 |  |  |  |  |
| Channel spacing CC4-CC5=99.96 MHz (Note 1) |  |    |     |                         |      |          |         |          |         |     |     |       |         |    |    |       |     |  |  |  |  |
| CC5  | 100  | 60 | 132 | Downlink<br>&<br>Uplink | Low  | 27949.92 | 2078331 | 27902.4  | 2077539 | 0   | 120 | 22469 | 2078011 | 4  | 11 | 1 (8) | 19  |  |  |  |  |
|  |  |    |     |                         | Mid  | 28124.76 | 2081245 | 28003.8  | 2079229 | 102 |     | 22479 | 2080891 | 6  | 8  | 1 (8) | 118 |  |  |  |  |
|  |  |    |     |                         | High | 28299.96 | 2084165 | 27889.56 | 2077325 | 504 |     | 22489 | 2083771 | 2  | 5  | 1 (8) | 517 |  |  |  |  |
| Note 1:                                    | Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.   |    |     |                         |      |          |         |          |         |     |     |       |         |    |    |       |     |  |  |  |  |
| Note 2:                                    | CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.   |    |     |                         |      |          |         |          |         |     |     |       |         |    |    |       |     |  |  |  |  |
| Note 3:                                    | The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.  |    |     |                         |      |          |         |          |         |     |     |       |         |    |    |       |     |  |  |  |  |
| Note 4:                                    | The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |    |     |                         |      |          |         |          |         |     |     |       |         |    |    |       |     |  |  |  |  |

Table 4.3.1.2.3.5.9-2: NR Intra-Band contiguous CA configuration CA\_n261J (PCC=CC1, SCC=CC2, CC3, CC4), SCS=120 kHz, nominal channel spacing

| CBW combination             | CC   | CBW [MHz] | SCS [kHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2                | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs]) Note 4 | Offset ToPointA (SIB1) [PRBs] Note 4 |      |
|-----------------------------|--|-----------|-----------|--------------------------|-------------------|--|------------------------|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|--|--|--------------------------------------|------|
| 50+100<br>+100+100<br>+100  | CC1  | 50        | 120       | 32                       | Downlink & Uplink | Low  | 27525                  | 2071249       | 27501.96                          | 2070865                        | 0                  | 120  | 22446                         | 2071387   | 9                                      | 7  | 1 (4)                                | 22   |
|                             |  |           |           |                          |                   | Mid  | 27725.04               | 2074583       | 27555.12                          | 2071751                        | 102                |      | 22457                         | 2074555   | 10                                     | 0  | 1 (4)                                | 212  |
|                             |  |           |           |                          |                   | High                                       | 27925.68               | 2077927       | 27176.88                          | 2065447                        | 504                |      | 22469                         | 2078011   | 6                                      | 5  | 1 (4)                                | 1026 |
|                             | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |           |           |                          |                   |  |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                             | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 27599.4                | 2072489       | 27551.88                          | 2071697                        | 0                  | 120  | 22448                         | 2071963   | 1                                      | 1  | 0 (0)                                | 2    |
|                             |  |           |           |                          |                   | Mid  | 27799.44               | 2075823       | 27605.04                          | 2072583                        | 102                |      | 22460                         | 2075419   | 2                                      | 2  | 1 (4)                                | 216  |
|                             |  |           |           |                          |                   | High                                       | 28000.08               | 2079167       | 27226.8                           | 2066279                        | 504                |      | 22472                         | 2078875   | 10                                     | 6  | 1 (4)                                | 1028 |
|                             | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |  |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                             | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 27699.36               | 2074155       | 27651.84                          | 2073363                        | 0                  | 120  | 22454                         | 2073691   | 8                                      | 3  | 0 (0)                                | 6    |
|                             |  |           |           |                          |                   | Mid  | 27899.4                | 2077489       | 27705                             | 2074249                        | 102                |      | 22466                         | 2077147   | 9                                      | 4  | 1 (4)                                | 220  |
|                             |  |           |           |                          |                   | High                                       | 28100.04               | 2080833       | 27326.76                          | 2067945                        | 504                |      | 22477                         | 2080315   | 5                                      | 1  | 0 (0)                                | 1010 |
|                             | Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |                          |                   |  |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                             | CC4  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 27799.32               | 2075821       | 27751.8                           | 2075029                        | 0                  | 120  | 22460                         | 2075419   | 3                                      | 2  | 1 (4)                                | 12   |
|                             |  |           |           |                          |                   | Mid  | 27999.36               | 2079155       | 27804.96                          | 2075915                        | 102                |      | 22472                         | 2078875   | 4                                      | 7  | 1 (4)                                | 226  |
|                             |  |           |           |                          |                   | High                                       | 28200                  | 2082499       | 27426.72                          | 2069611                        | 504                |      | 22483                         | 2082043   | 0                                      | 0  | 1 (4)                                | 1016 |
|                             | Channel spacing CC4-CC5=99.96 MHz (Note 1) |           |           |                          |                   |  |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                             | CC5  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 27899.28               | 2077487       | 27851.76                          | 2076695                        | 0                  | 120  | 22466                         | 2077147   | 10                                     | 4  | 1 (4)                                | 16   |
|                             |  |           |           |                          |                   | Mid  | 28099.32               | 2080821       | 27904.92                          | 2077581                        | 102                |      | 22477                         | 2080315   | 11                                     | 1  | 0 (0)                                | 206  |
|                             |  |           |           |                          |                   | High                                       | 28299.96               | 2084165       | 27526.68                          | 2071277                        | 504                |      | 22489                         | 2083771   | 7                                      | 2  | 1 (4)                                | 1020 |
|                             |  |           |           |                          |                   | Channel spacing CC4-CC5=99.96 MHz (Note 1) |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
| 100+100<br>+100+100<br>+100 | CC1  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 27550.08               | 2071667       | 27502.56                          | 2070875                        | 0                  | 120  | 22446                         | 2071387   | 4                                      | 7  | 1 (4)                                | 22   |
|                             |  |           |           |                          |                   | Mid  | 27725.04               | 2074583       | 27530.64                          | 2071343                        | 102                |      | 22456                         | 2074267   | 10                                     | 5  | 1 (4)                                | 222  |
|                             |  |           |           |                          |                   | High                                       | 27900.12               | 2077501       | 27126.84                          | 2064613                        | 504                |      | 22466                         | 2077147   | 3                                      | 4  | 1 (4)                                | 1024 |
|                             | Channel spacing CC1-CC2=99.96 MHz (Note 1) |           |           |                          |                   |  |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                             | CC2  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 27650.04               | 2073333       | 27602.52                          | 2072541                        | 0                  | 120  | 22451                         | 2072827   | 11                                     | 1  | 0 (0)                                | 2    |
|                             |  |           |           |                          |                   | Mid  | 27825                  | 2076249       | 27630.6                           | 2073009                        | 102                |      | 22461                         | 2075707   | 5                                      | 0  | 0 (0)                                | 204  |
|                             |  |           |           |                          |                   | High                                       | 28000.08               | 2079167       | 27226.8                           | 2066279                        | 504                |      | 22472                         | 2078875   | 10                                     | 6  | 1 (4)                                | 1028 |
|                             | Channel spacing CC2-CC3=99.96 MHz (Note 1) |           |           |                          |                   |  |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |
|                             | CC3  | 100       | 120       | 66                       | Downlink & Uplink | Low  | 27750                  | 2074999       | 27702.48                          | 2074207                        | 0                  | 120  | 22457                         | 2074555   | 6                                      | 0  | 1 (4)                                | 8    |
|                             |  |           |           |                          |                   | Mid  | 27924.96               | 2077915       | 27730.56                          | 2074675                        | 102                |      | 22467                         | 2077435   | 0                                      | 3  | 0 (0)                                | 210  |
|                             |  |           |           |                          |                   | High                                       | 28100.04               | 2080833       | 27326.76                          | 2067945                        | 504                |      | 22477                         | 2080315   | 5                                      | 1  | 0 (0)                                | 1010 |
|                             | Channel spacing CC3-CC4=99.96 MHz (Note 1) |           |           |                          |                   |  |                        |               |                                   |                                |                    |      |                               |           |  |  |                                      |      |

|  |     |     |    |                         |      |          |         |          |         |     |     |       |         |   |   |       |      |
|--|-----|-----|----|-------------------------|------|----------|---------|----------|---------|-----|-----|-------|---------|---|---|-------|------|
| CC4  | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 27849.96 | 2076665 | 27802.44 | 2075873 | 0   | 120 | 22463 | 2076283 | 1 | 3 | 1 (4) | 14   |
|  |     |     |    |                         | Mid  | 28024.92 | 2079581 | 27830.52 | 2076341 | 102 |     | 22473 | 2079163 | 7 | 1 | 1 (4) | 214  |
|  |     |     |    |                         | High | 28200    | 2082499 | 27426.72 | 2069611 | 504 |     | 22483 | 2082043 | 0 | 0 | 1 (4) | 1016 |
| Channel spacing CC4-CC5=99.96 MHz (Note 1) |     |     |    |                         |      |          |         |          |         |     |     |       |         |   |   |       |      |
| CC5  | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 27949.92 | 2078331 | 27902.4  | 2077539 | 0   | 120 | 22469 | 2078011 | 8 | 5 | 1 (4) | 18   |
|  |     |     |    |                         | Mid  | 28124.88 | 2081247 | 27930.48 | 2078007 | 102 |     | 22479 | 2080891 | 2 | 4 | 1 (4) | 220  |
|  |     |     |    |                         | High | 28299.96 | 2084165 | 27526.68 | 2071277 | 504 |     | 22489 | 2083771 | 7 | 2 | 1 (4) | 1020 |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

## 4.3.1.2.3.5.10 CA\_n261K

FFS

## 4.3.1.2.3.5.11 CA\_n261L

FFS

## 4.3.1.2.3.5.12 CA\_n261M

FFS

## 4.3.1.2.3.5.13 CA\_n261O

Table 4.3.1.2.3.5.13-1: NR Intra-Band contiguous CA configuration CA\_n261O (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

| CBW combination   | CC      | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN]   | point A [MHz] | absoluteFrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |  |  |  |  |  |  |  |  |  |  |
|---|---------|-----------|-----------|-------------------------|-------------------|-----------------------------|--|---------------|----------------------------------|--------------------------------|--------------------|------|------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|--|--|--|--|--|--|--|--|--|--|
| 50+100  | CC1 CC2 | 50 100    | 60        | 66 132                  | Downlink & Uplink | Low, Mid, High              | Same values as for Low, Mid, High range in Table 4.3.1.2.3.5.6-1 for CBW combination 50+100, CC1, CC2 and SCS=60 kHz.  |               |                                  |                                |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| 100+50  | CC1     | 100       | 60        | 132                     | Downlink & Uplink | Low                         | 27550.08   | 2071667       | 27502.56                         | 2070875                        | 0                  | 120  | 22446                        | 2071387   | 8                                     | 14                                    | 1 (8) 22                            |  |  |  |  |  |  |  |  |  |  |
|   |         |           |           |                         |                   | Mid                         | 27900  | 2077499       | 27779.04                         | 2075483                        | 102                |      | 22466                        | 2077147   | 8                                     | 8                                     | 1 (8) 118                           |  |  |  |  |  |  |  |  |  |  |
|   |         |           |           |                         |                   | High                        | 28251.24   | 2083353       | 27840.84                         | 2076513                        | 504                |      | 22486                        | 2082907   | 10                                    | 0                                     | 1 (8) 512                           |  |  |  |  |  |  |  |  |  |  |
| Channel spacing CC1-CC2=73.68 MHz (Note 1)  |         |           |           |                         |                   |                             |  |               |                                  |                                |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| 100+100   | CC2     | 50        | 60        | 66                      | Downlink & Uplink | Low                         | 27623.76   | 2072895       | 27600                            | 2072499                        | 0                  | 120  | 22451                        | 2072827   | 4                                     | 7                                     | 0 (0) 7                             |  |  |  |  |  |  |  |  |  |  |
|   |         |           |           |                         |                   | Mid                         | 27973.68   | 2078727       | 27876.48                         | 2077107                        | 102                |      | 22471                        | 2078587   | 4                                     | 1                                     | 0 (0) 103                           |  |  |  |  |  |  |  |  |  |  |
|   |         |           |           |                         |                   | High                        | 28324.92   | 2084581       | 27938.28                         | 2078137                        | 504                |      | 22492                        | 2084635   | 6                                     | 9                                     | 1 (8) 521                           |  |  |  |  |  |  |  |  |  |  |
| 100+100   | CC1 CC2 | 100 100   | 60        | 132 132                 | Downlink & Uplink | Low, Mid, High              | Same values as for Low, Mid, High range in Table 4.3.1.2.3.5.6-1 for CBW combination 100+100, CC1, CC2 and SCS=60 kHz. |               |                                  |                                |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  |         |           |           |                         |                   |                             |  |               |                                  |                                |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  |         |           |           |                         |                   |                             |  |               |                                  |                                |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |         |           |           |                         |                   |                             |  |               |                                  |                                |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |         |           |           |                         |                   |                             |  |               |                                  |                                |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |

Table 4.3.1.2.3.5.13-2: NR Intra-Band contiguous CA configuration CA\_n261O (PCC=CC1 and SCC=CC2), SCS=60 kHz, nominal channel spacing

| CBW combination   | CC  | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN]   | point A [MHz] | absoluteFrequencyPoint A [ARFCN] | offsetToPointA [Carrier PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORESET#0 [RBs] Note 3 | CORESET#0 Index (Offset [RBs]) Note 4 | offsetToPointA (SIB1) [PRBs] Note 4 |  |  |  |  |  |  |  |  |  |  |
|---|---|-----------|-----------|-------------------------|-------------------|-----------------------------|--|---------------|----------------------------------|-------------------------------|--------------------|------|------------------------------|-----------|---------------------------------------|---------------------------------------|-------------------------------------|--|--|--|--|--|--|--|--|--|--|
| 50+100  |   |           |           |                         |                   |                             |  |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| 50+100  | CC1 CC2                                   | 50 100    | 120       | 32 66                   | Downlink & Uplink | Low, Mid, High              | Same values as for Low, Mid, High range in Table 4.3.1.2.3.5.6-2 for CBW combination 50+100, CC1, CC2 and SCS=120  |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| 100+50  | CC1                                       | 100       | 120       | 66                      | Downlink & Uplink | Low                         | 27550.08   | 2071667       | 27502.56                         | 2070875                       | 0                  | 120  | 22446                        | 2071387   | 4                                     | 7                                     | 1 (4) 22                            |  |  |  |  |  |  |  |  |  |  |
|   |   |           |           |                         |                   | Mid                         | 27900  | 2077499       | 27705.6                          | 2074259                       | 102                |      | 22466                        | 2077147   | 4                                     | 4                                     | 1 (4) 220                           |  |  |  |  |  |  |  |  |  |  |
|   |   |           |           |                         |                   | High                        | 28250.52   | 2083341       | 27477.24                         | 2070453                       | 504                |      | 22486                        | 2082907   | 11                                    | 0                                     | 1 (4) 1016                          |  |  |  |  |  |  |  |  |  |  |
|   | Channel spacing CC1-CC2=74.4 MHz (Note 1) |           |           |                         |                   |                             |  |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| 100+100   | CC2                                       | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 27624.48   | 2072907       | 27601.44                         | 2072523                       | 0                  | 120  | 22451                        | 2072827   | 8                                     | 2                                     | 0 (0) 4                             |  |  |  |  |  |  |  |  |  |  |
|   |   |           |           |                         |                   | Mid                         | 27974.4  | 2078739       | 27804.48                         | 2075907                       | 102                |      | 22472                        | 2078875   | 8                                     | 7                                     | 1 (4) 226                           |  |  |  |  |  |  |  |  |  |  |
|   |   |           |           |                         |                   | High                        | 28324.92   | 2084581       | 27576.12                         | 2072101                       | 504                |      | 22492                        | 2084635   | 3                                     | 4                                     | 1 (4) 1024                          |  |  |  |  |  |  |  |  |  |  |
| 100+100   | CC1 CC2                                   | 100 100   | 120       | 66 66                   | Downlink & Uplink | Low, Mid, High              | Same values as for Low, Mid, High range in Table 4.3.1.2.3.5.6-2 for CBW combination 100+100, CC1, CC2 and SCS=120 |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  |   |           |           |                         |                   |                             |  |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  |   |           |           |                         |                   |                             |  |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |   |           |           |                         |                   |                             |  |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |
| Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |   |           |           |                         |                   |                             |  |               |                                  |                               |                    |      |                              |           |                                       |                                       |                                     |  |  |  |  |  |  |  |  |  |  |

## 4.3.1.2.3.5.14 CA\_n261P

Table 4.3.1.2.3.5.14-1: NR Intra-Band contiguous CA configuration CA\_n261P (PCC=CC1 and SCC=CC2, CC3), SCS=60 kHz, nominal channel spacing

| CBW combination | CC   | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE ESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |
|-----------------|--|-----------|-----------|-------------------------|-------------------|-----------------------------|------------------------|---------------|----------------------------------|--------------------------------|--------------------|------|------------------------------|-----------|--|--|--------------------------------------|
| 50+50 +50       | CC1  | 50        | 60        | 66                      | Downlink & Uplink | Low                         | 27525                  | 2071249       | 27501.24                         | 2070853                        | 0                  | 120  | 22446                        | 2071387   | 6                                      | 16                                       | 1 (8) 24                             |
|                 |  |           |           |                         |                   | Mid                         | 27874.92               | 2077081       | 27777.72                         | 2075461                        | 102                |      | 22466                        | 2077147   | 6                                      | 10                                       | 1 (8) 120                            |
|                 |  |           |           |                         |                   | High                        | 28225.08               | 2082917       | 27838.44                         | 2076473                        | 504                |      | 22486                        | 2082907   | 2                                      | 4  | 1 (8) 516                            |
|                 | Channel spacing CC1-CC2=49.92 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |
|                 | CC2  | 50        | 60        | 66                      | Downlink & Uplink | Low                         | 27574.92               | 2072081       | 27551.16                         | 2071685                        | 0                  | 120  | 22448                        | 2071963   | 2                                      | 3  | 0 (0) 3                              |
|                 |  |           |           |                         |                   | Mid                         | 27924.84               | 2077913       | 27827.64                         | 2076293                        | 102                |      | 22469                        | 2078011   | 2                                      | 13                                       | 1 (8) 123                            |
|                 |  |           |           |                         |                   | High                        | 28275                  | 2083749       | 27888.36                         | 2077305                        | 504                |      | 22489                        | 2083771   | 10                                     | 6  | 1 (8) 518                            |
|                 | Channel spacing CC2-CC3=49.92 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |
|                 | CC3  | 50        | 60        | 66                      | Downlink & Uplink | Low                         | 27624.84               | 2072913       | 27601.08                         | 2072517                        | 0                  | 120  | 22451                        | 2072827   | 10                                     | 5  | 0 (0) 5                              |
|                 |  |           |           |                         |                   | Mid                         | 27974.76               | 2078745       | 27877.56                         | 2077125                        | 102                |      | 22472                        | 2078875   | 10                                     | 15                                       | 1 (8) 125                            |
|                 |  |           |           |                         |                   | High                        | 28324.92               | 2084581       | 27938.28                         | 2078137                        | 504                |      | 22492                        | 2084635   | 6                                      | 9  | 1 (8) 521                            |
| 50+50 +100      | CC1  | 50        | 60        | 66                      | Downlink & Uplink | Low                         | 27525                  | 2071249       | 27501.24                         | 2070853                        | 0                  | 120  | 22446                        | 2071387   | 6                                      | 16                                       | 1 (8) 24                             |
|                 |  |           |           |                         |                   | Mid                         | 27849.96               | 2076665       | 27752.76                         | 2075045                        | 102                |      | 22464                        | 2076571   | 2                                      | 5  | 0 (0) 107                            |
|                 |  |           |           |                         |                   | High                        | 28176.36               | 2082105       | 27789.72                         | 2075661                        | 504                |      | 22483                        | 2082043   | 10                                     | 7  | 0 (0) 511                            |
|                 | Channel spacing CC1-CC2=49.92 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |
|                 | CC2  | 50        | 60        | 66                      | Downlink & Uplink | Low                         | 27574.92               | 2072081       | 27551.16                         | 2071685                        | 0                  | 120  | 22448                        | 2071963   | 2                                      | 3  | 0 (0) 3                              |
|                 |  |           |           |                         |                   | Mid                         | 27899.88               | 2077497       | 27802.68                         | 2075877                        | 102                |      | 22467                        | 2077435   | 10                                     | 7  | 0 (0) 109                            |
|                 |  |           |           |                         |                   | High                        | 28226.28               | 2082937       | 27839.64                         | 2076493                        | 504                |      | 22486                        | 2082907   | 6                                      | 2  | 1 (8) 514                            |
|                 | Channel spacing CC2-CC3=73.68 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |
|                 | CC3  | 100       | 60        | 132                     | Downlink & Uplink | Low                         | 27648.6                | 2073309       | 27601.08                         | 2072517                        | 0                  | 120  | 22451                        | 2072827   | 10                                     | 5  | 0 (0) 5                              |
|                 |  |           |           |                         |                   | Mid                         | 27973.56               | 2078725       | 27852.6                          | 2076709                        | 102                |      | 22470                        | 2078299   | 6                                      | 2  | 1 (8) 112                            |
|                 |  |           |           |                         |                   | High                        | 28299.96               | 2084165       | 27889.56                         | 2077325                        | 504                |      | 22489                        | 2083771   | 2                                      | 5  | 1 (8) 517                            |
| 50+100 +50      | CC1  | 50        | 60        | 66                      | Downlink & Uplink | Low                         | 27525                  | 2071249       | 27501.24                         | 2070853                        | 0                  | 120  | 22446                        | 2071387   | 6                                      | 16                                       | 1 (8) 24                             |
|                 |  |           |           |                         |                   | Mid                         | 27849.96               | 2076665       | 27752.76                         | 2075045                        | 102                |      | 22464                        | 2076571   | 2                                      | 5  | 0 (0) 107                            |
|                 |  |           |           |                         |                   | High                        | 28177.56               | 2082125       | 27790.92                         | 2075681                        | 504                |      | 22483                        | 2082043   | 2                                      | 6  | 0 (0) 510                            |
|                 | Channel spacing CC1-CC2=73.68 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |
|                 | CC2  | 100       | 60        | 132                     | Downlink & Uplink | Low                         | 27598.68               | 2072477       | 27551.16                         | 2071685                        | 0                  | 120  | 22448                        | 2071963   | 2                                      | 3  | 0 (0) 3                              |
|                 |  |           |           |                         |                   | Mid                         | 27923.64               | 2077893       | 27802.68                         | 2075877                        | 102                |      | 22467                        | 2077435   | 10                                     | 7  | 0 (0) 109                            |
|                 |  |           |           |                         |                   | High                        | 28251.24               | 2083353       | 27840.84                         | 2076513                        | 504                |      | 22486                        | 2082907   | 10                                     | 0  | 1 (8) 512                            |

| Channel spacing CC2-CC3=73.68 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|--|-----|-----|----|-----|-------------------|------|----------|---------|----------|---------|-----|-----|-------|---------|----|----|-------|-----|
|  | CC3 | 50  | 60 | 66  | Downlink & Uplink | Low  | 27672.36 | 2073705 | 27648.6  | 2073309 | 0   | 120 | 22454 | 2073691 | 10 | 3  | 1 (8) | 11  |
|  |     |     |    |     |                   | Mid  | 27997.32 | 2079121 | 27900.12 | 2077501 | 102 |     | 22473 | 2079163 | 6  | 8  | 1 (8) | 118 |
|  |     |     |    |     |                   | High | 28324.92 | 2084581 | 27938.28 | 2078137 | 504 |     | 22492 | 2084635 | 6  | 9  | 1 (8) | 521 |
| 50+100<br>+100                             | CC1 | 50  | 60 | 66  | Downlink & Uplink | Low  | 27525    | 2071249 | 27501.24 | 2070853 | 0   | 120 | 22446 | 2071387 | 6  | 16 | 1 (8) | 24  |
|  |     |     |    |     |                   | Mid  | 27825    | 2076249 | 27727.8  | 2074629 | 102 |     | 22463 | 2076283 | 10 | 7  | 1 (8) | 117 |
|  |     |     |    |     |                   | High | 28126.32 | 2081271 | 27739.68 | 2074827 | 504 |     | 22480 | 2081179 | 4  | 5  | 0 (0) | 509 |
| Channel spacing CC1-CC2=73.68 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|  | CC2 | 100 | 60 | 132 | Downlink & Uplink | Low  | 27598.68 | 2072477 | 27551.16 | 2071685 | 0   | 120 | 22448 | 2071963 | 2  | 3  | 0 (0) | 3   |
|  |     |     |    |     |                   | Mid  | 27898.68 | 2077477 | 27777.72 | 2075461 | 102 |     | 22466 | 2077147 | 6  | 10 | 1 (8) | 120 |
|  |     |     |    |     |                   | High | 28200    | 2082499 | 27789.6  | 2075659 | 504 |     | 22483 | 2082043 | 0  | 0  | 1 (8) | 512 |
| Channel spacing CC2-CC3=99.96 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|  | CC3 | 100 | 60 | 132 | Downlink & Uplink | Low  | 27698.64 | 2074143 | 27651.12 | 2073351 | 0   | 120 | 22454 | 2073691 | 4  | 0  | 1 (8) | 8   |
|  |     |     |    |     |                   | Mid  | 27998.64 | 2079143 | 27877.68 | 2077127 | 102 |     | 22472 | 2078875 | 8  | 15 | 1 (8) | 125 |
|  |     |     |    |     |                   | High | 28299.96 | 2084165 | 27889.56 | 2077325 | 504 |     | 22489 | 2083771 | 2  | 5  | 1 (8) | 517 |
| 100+50<br>+50                              | CC1 | 100 | 60 | 132 | Downlink & Uplink | Low  | 27550.08 | 2071667 | 27502.56 | 2070875 | 0   | 120 | 22446 | 2071387 | 8  | 14 | 1 (8) | 22  |
|  |     |     |    |     |                   | Mid  | 27874.92 | 2077081 | 27753.96 | 2075065 | 102 |     | 22464 | 2076571 | 6  | 3  | 0 (0) | 105 |
|  |     |     |    |     |                   | High | 28201.32 | 2082521 | 27790.92 | 2075681 | 504 |     | 22483 | 2082043 | 2  | 6  | 0 (0) | 510 |
| Channel spacing CC1-CC2=73.68 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|  | CC2 | 50  | 60 | 66  | Downlink & Uplink | Low  | 27623.76 | 2072895 | 27600    | 2072499 | 0   | 120 | 22451 | 2072827 | 4  | 7  | 0 (0) | 7   |
|  |     |     |    |     |                   | Mid  | 27948.6  | 2078309 | 27851.4  | 2076689 | 102 |     | 22470 | 2078299 | 2  | 4  | 1 (8) | 114 |
|  |     |     |    |     |                   | High | 28275    | 2083749 | 27888.36 | 2077305 | 504 |     | 22489 | 2083771 | 10 | 6  | 1 (8) | 518 |
| Channel spacing CC2-CC3=49.92 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|  | CC3 | 50  | 60 | 66  | Downlink & Uplink | Low  | 27673.68 | 2073727 | 27649.92 | 2073331 | 0   | 120 | 22454 | 2073691 | 0  | 2  | 1 (8) | 10  |
|  |     |     |    |     |                   | Mid  | 27998.52 | 2079141 | 27901.32 | 2077521 | 102 |     | 22473 | 2079163 | 10 | 6  | 1 (8) | 116 |
|  |     |     |    |     |                   | High | 28324.92 | 2084581 | 27938.28 | 2078137 | 504 |     | 22492 | 2084635 | 6  | 9  | 1 (8) | 521 |
| 100+50<br>+100                             | CC1 | 100 | 60 | 132 | Downlink & Uplink | Low  | 27550.08 | 2071667 | 27502.56 | 2070875 | 0   | 120 | 22446 | 2071387 | 8  | 14 | 1 (8) | 22  |
|  |     |     |    |     |                   | Mid  | 27849.96 | 2076665 | 27729    | 2074649 | 102 |     | 22463 | 2076283 | 2  | 6  | 1 (8) | 116 |
|  |     |     |    |     |                   | High | 28152.6  | 2081709 | 27742.2  | 2074869 | 504 |     | 22480 | 2081179 | 10 | 1  | 0 (0) | 505 |
| Channel spacing CC1-CC2=73.68 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|  | CC2 | 50  | 60 | 66  | Downlink & Uplink | Low  | 27623.76 | 2072895 | 27600    | 2072499 | 0   | 120 | 22451 | 2072827 | 4  | 7  | 0 (0) | 7   |
|  |     |     |    |     |                   | Mid  | 27923.64 | 2077893 | 27826.44 | 2076273 | 102 |     | 22469 | 2078011 | 10 | 14 | 1 (8) | 124 |
|  |     |     |    |     |                   | High | 28226.28 | 2082937 | 27839.64 | 2076493 | 504 |     | 22486 | 2082907 | 6  | 2  | 1 (8) | 514 |
| Channel spacing CC2-CC3=73.68 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|  | CC3 | 100 | 60 | 132 | Downlink & Uplink | Low  | 27697.44 | 2074123 | 27649.92 | 2073331 | 0   | 120 | 22454 | 2073691 | 0  | 2  | 1 (8) | 10  |
|  |     |     |    |     |                   | Mid  | 27997.32 | 2079121 | 27876.36 | 2077105 | 102 |     | 22471 | 2078587 | 6  | 1  | 0 (0) | 103 |
|  |     |     |    |     |                   | High | 28324.96 | 2084165 | 27889.56 | 2077325 | 504 |     | 22489 | 2083771 | 2  | 5  | 1 (8) | 517 |
| 100+100<br>+50                             | CC1 | 100 | 60 | 132 | Downlink & Uplink | Low  | 27550.08 | 2071667 | 27502.56 | 2070875 | 0   | 120 | 22446 | 2071387 | 8  | 14 | 1 (8) | 22  |
|  |     |     |    |     |                   | Mid  | 27849.96 | 2076665 | 27729    | 2074649 | 102 |     | 22463 | 2076283 | 2  | 6  | 1 (8) | 116 |
|  |     |     |    |     |                   | High | 28151.28 | 2081687 | 27740.88 | 2074847 | 504 |     | 22480 | 2081179 | 8  | 3  | 0 (0) | 507 |
| Channel spacing CC1-CC2=99.96 MHz (Note 1) |     |     |    |     |                   |      |          |         |          |         |     |     |       |         |    |    |       |     |
|  | CC2 | 100 | 60 | 132 | Downlink          | Low  | 27650.04 | 2073333 | 27602.52 | 2072541 | 0   | 120 | 22451 | 2072827 | 10 | 3  | 0 (0) | 3   |
|  |     |     |    |     |                   | Mid  | 27949.96 | 2077893 | 27826.44 | 2076273 | 102 |     | 22469 | 2078011 | 10 | 14 | 1 (8) | 124 |

|  |   |     |    |                         | &<br>Uplink             | Mid                  | 27949.92  | 2078331  | 27828.96 | 2076315 | 102 |       | 22469   | 2078011 | 4  | 11    | 1 (8) | 121 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--|---|-----|----|-------------------------|-------------------------|----------------------|---|----------|----------|---------|-----|-------|---------|---------|----|-------|-------|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|  |   |     |    |                         | High                    | 28251.24             | 2083353   | 27840.84 | 2076513  | 504     |     |       | 22486   | 2082907 | 10 | 0     | 1 (8) | 512 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Channel spacing CC2-CC3=73.68 MHz (Note 1) |   |     |    |                         |                         |                      |   |          |          |         |     |       |         |         |    |       |       |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CC3  | 50  | 60  | 66 | Downlink<br>&<br>Uplink | Low                     | 27723.72             | 2074561   | 27699.96 | 2074165  | 0       | 120 | 22457 | 2074555 | 6       | 4  | 1 (8) | 12    |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |   |     |    |                         | Mid                     | 28023.6              | 2079559   | 27926.4  | 2077939  | 102     |     | 22474 | 2079451 | 0       | 4  | 0 (0) | 106   |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |   |     |    |                         | High                    | 28324.92             | 2084581   | 27938.28 | 2078137  | 504     |     | 22492 | 2084635 | 6       | 9  | 1 (8) | 521   |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 100+100<br>+100                            | CC1   | 100 | 60 | 132                     | Downlink<br>&<br>Uplink | Low,<br>Mid,<br>High | Same values as for Low, Mid, High range in Table 4.3.1.2.3.5.7-1 for CBW combination 100+100+100, CC1, CC2, CC3 and SCS=60 kHz. |          |          |         |     |       |         |         |    |       |       |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Note 1:                                    | Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.  |     |    |                         |                         |                      |   |          |          |         |     |       |         |         |    |       |       |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Note 2:                                    | CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.  |     |    |                         |                         |                      |   |          |          |         |     |       |         |         |    |       |       |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Note 3:                                    | The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs.   |     |    |                         |                         |                      |   |          |          |         |     |       |         |         |    |       |       |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Note 4:                                    | The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-7 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |     |    |                         |                         |                      |   |          |          |         |     |       |         |         |    |       |       |     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Table 4.3.1.2.3.5.14-2: NR Intra-Band contiguous CA configuration CA\_n261P (PCC=CC1 and SCC=CC2, CC3), SCS=120 kHz, nominal channel spacing**

| CBW combination | CC   | CBW [MHz] | SCS [kHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORESET #0 Index (Offset [RBs]) Note 4 | offset ToPointA (SIB1) [PRBs] Note 4 |      |
|-----------------|--|-----------|-----------|-------------------------|-------------------|-----------------------------|------------------------|---------------|----------------------------------|--------------------------------|--------------------|------|------------------------------|-----------|--|--|--------------------------------------|------|
| 50+50 +50       | CC1  | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 27525                  | 2071249       | 27501.96                         | 2070865                        | 0                  | 120  | 22446                        | 2071387   | 9                                      | 7                                      | 1 (4)                                | 22   |
|                 |  |           |           |                         |                   | Mid                         | 27875.04               | 2077083       | 27705.12                         | 2074251                        | 102                |      | 22466                        | 2077147   | 8                                      | 4                                      | 1 (4)                                | 220  |
|                 |  |           |           |                         |                   | High                        | 28225.08               | 2082917       | 27476.28                         | 2070437                        | 504                |      | 22486                        | 2082907   | 7                                      | 1                                      | 1 (4)                                | 1018 |
|                 | Channel spacing CC1-CC2=49.92 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC2  | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 27574.92               | 2072081       | 27551.88                         | 2071697                        | 0                  | 120  | 22448                        | 2071963   | 1                                      | 1                                      | 0 (0)                                | 2    |
|                 |  |           |           |                         |                   | Mid                         | 27924.96               | 2077915       | 27755.04                         | 2075083                        | 102                |      | 22469                        | 2078011   | 0                                      | 6                                      | 1 (4)                                | 224  |
|                 |  |           |           |                         |                   | High                        | 28275                  | 2083749       | 27526.2                          | 2071269                        | 504                |      | 22489                        | 2083771   | 11                                     | 2                                      | 1 (4)                                | 1020 |
|                 | Channel spacing CC2-CC3=49.92 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC3  | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 27624.84               | 2072913       | 27601.8                          | 2072529                        | 0                  | 120  | 22451                        | 2072827   | 5                                      | 2                                      | 0 (0)                                | 4    |
|                 |  |           |           |                         |                   | Mid                         | 27974.88               | 2078747       | 27804.96                         | 2075915                        | 102                |      | 22472                        | 2078875   | 4                                      | 7                                      | 1 (4)                                | 226  |
|                 |  |           |           |                         |                   | High                        | 28324.92               | 2084581       | 27576.12                         | 2072101                        | 504                |      | 22492                        | 2084635   | 3                                      | 4                                      | 1 (4)                                | 1024 |
| 50+50 +100      | CC1  | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 27525                  | 2071249       | 27501.96                         | 2070865                        | 0                  | 120  | 22446                        | 2071387   | 9                                      | 7                                      | 1 (4)                                | 22   |
|                 |  |           |           |                         |                   | Mid                         | 27849.96               | 2076665       | 27680.04                         | 2073833                        | 102                |      | 22464                        | 2076571   | 1                                      | 2                                      | 0 (0)                                | 208  |
|                 |  |           |           |                         |                   | High                        | 28175.64               | 2082093       | 27426.84                         | 2069613                        | 504                |      | 22483                        | 2082043   | 11                                     | 3                                      | 0 (0)                                | 1014 |
|                 | Channel spacing CC1-CC2=49.92 MHz (Note 1) |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC2  | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 27574.92               | 2072081       | 27551.88                         | 2071697                        | 0                  | 120  | 22448                        | 2071963   | 1                                      | 1                                      | 0 (0)                                | 2    |
|                 |  |           |           |                         |                   | Mid                         | 27899.88               | 2077497       | 27729.96                         | 2074665                        | 102                |      | 22467                        | 2077435   | 5                                      | 3                                      | 0 (0)                                | 210  |
|                 |  |           |           |                         |                   | High                        | 28225.56               | 2082925       | 27476.76                         | 2070445                        | 504                |      | 22486                        | 2082907   | 3                                      | 1                                      | 1 (4)                                | 1018 |
|                 | Channel spacing CC2-CC3=74.4 MHz (Note 1)  |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC3  | 100       | 120       | 66                      | Downlink & Uplink | Low                         | 27649.32               | 2073321       | 27601.8                          | 2072529                        | 0                  | 120  | 22451                        | 2072827   | 5                                      | 2                                      | 0 (0)                                | 4    |
|                 |  |           |           |                         |                   | Mid                         | 27974.28               | 2078737       | 27779.88                         | 2075497                        | 102                |      | 22470                        | 2078299   | 9                                      | 0                                      | 1 (4)                                | 212  |
|                 |  |           |           |                         |                   | High                        | 28299.96               | 2084165       | 27526.68                         | 2071277                        | 504                |      | 22489                        | 2083771   | 7                                      | 2                                      | 1 (4)                                | 1020 |
| 50+100 +50      | CC1  | 50        | 120       | 32                      | Downlink & Uplink | Low                         | 27525                  | 2071249       | 27501.96                         | 2070865                        | 0                  | 120  | 22446                        | 2071387   | 9                                      | 7                                      | 1 (4)                                | 22   |
|                 |  |           |           |                         |                   | Mid                         | 27849.96               | 2076665       | 27680.04                         | 2073833                        | 102                |      | 22464                        | 2076571   | 1                                      | 2                                      | 0 (0)                                | 208  |
|                 |  |           |           |                         |                   | High                        | 28176.12               | 2082101       | 27427.32                         | 2069621                        | 504                |      | 22483                        | 2082043   | 7                                      | 3                                      | 0 (0)                                | 1014 |
|                 | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC2  | 100       | 120       | 66                      | Downlink & Uplink | Low                         | 27599.4                | 2072489       | 27551.88                         | 2071697                        | 0                  | 120  | 22448                        | 2071963   | 1                                      | 1                                      | 0 (0)                                | 2    |
|                 |  |           |           |                         |                   | Mid                         | 27924.36               | 2077905       | 27729.96                         | 2074665                        | 102                |      | 22467                        | 2077435   | 5                                      | 3                                      | 0 (0)                                | 210  |
|                 |  |           |           |                         |                   | High                        | 28250.52               | 2083341       | 27477.24                         | 2070453                        | 504                |      | 22486                        | 2082907   | 11                                     | 0                                      | 1 (4)                                | 1016 |
|                 | Channel spacing CC2-CC3=74.4 MHz (Note 1)  |           |           |                         |                   |                             |                        |               |                                  |                                |                    |      |                              |           |  |  |                                      |      |
|                 | CC3  | 50        | 120       | 32                      | Downlink          | Low                         | 27673.8                | 2073729       | 27650.76                         | 2073345                        | 0                  | 120  | 22454                        | 2073691   | 5                                      | 0                                      | 1 (4)                                | 8    |

|                |     |     |     |    |                         |  |          |          |          |         |     |       |         |         |    |       |       |      |
|----------------|-----|-----|-----|----|-------------------------|--|----------|----------|----------|---------|-----|-------|---------|---------|----|-------|-------|------|
|                |     |     |     |    | &<br>Uplink             | Mid  | 27998.76 | 2079145  | 27828.84 | 2076313 | 102 |       | 22473   | 2079163 | 9  | 2     | 1 (4) | 216  |
|                |     |     |     |    | High                    | 28324.92                                   | 2084581  | 27576.12 | 2072101  | 504     |     | 22492 | 2084635 | 3       | 4  | 1 (4) | 1024  |      |
| 50+100<br>+100 | CC1 | 50  | 120 | 32 | Downlink<br>&<br>Uplink | Low  | 27525    | 2071249  | 27501.96 | 2070865 | 0   | 120   | 22446   | 2071387 | 9  | 7     | 1 (4) | 22   |
|                |     |     |     |    |                         | Mid  | 27825    | 2076249  | 27655.08 | 2073417 | 102 |       | 22463   | 2076283 | 5  | 3     | 1 (4) | 218  |
|                |     |     |     |    |                         | High                                       | 28125.6  | 2081259  | 27376.8  | 2068779 | 504 |       | 22480   | 2081179 | 8  | 2     | 0 (0) | 1012 |
|                |     |     |     |    |                         | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |          |          |          |         |     |       |         |         |    |       |       |      |
|                | CC2 | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 27599.4  | 2072489  | 27551.88 | 2071697 | 0   | 120   | 22448   | 2071963 | 1  | 1     | 0 (0) | 2    |
|                |     |     |     |    |                         | Mid  | 27899.4  | 2077489  | 27705    | 2074249 | 102 |       | 22466   | 2077147 | 9  | 4     | 1 (4) | 220  |
|                |     |     |     |    |                         | High                                       | 28200    | 2082499  | 27426.72 | 2069611 | 504 |       | 22483   | 2082043 | 0  | 0     | 1 (4) | 1016 |
|                |     |     |     |    |                         | Channel spacing CC2-CC3=99.96 MHz (Note 1) |          |          |          |         |     |       |         |         |    |       |       |      |
|                | CC3 | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 27699.36 | 2074155  | 27651.84 | 2073363 | 0   | 120   | 22454   | 2073691 | 8  | 3     | 0 (0) | 6    |
|                |     |     |     |    |                         | Mid  | 27999.36 | 2079155  | 27804.96 | 2075915 | 102 |       | 22472   | 2078875 | 4  | 7     | 1 (4) | 226  |
|                |     |     |     |    |                         | High                                       | 28299.96 | 2084165  | 27526.68 | 2071277 | 504 |       | 22489   | 2083771 | 7  | 2     | 1 (4) | 1020 |
|                |     |     |     |    |                         | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |          |          |          |         |     |       |         |         |    |       |       |      |
| 100+50<br>+50  | CC1 | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 27550.08 | 2071667  | 27502.56 | 2070875 | 0   | 120   | 22446   | 2071387 | 4  | 7     | 1 (4) | 22   |
|                |     |     |     |    |                         | Mid  | 27875.04 | 2077083  | 27680.64 | 2073483 | 102 |       | 22464   | 2076571 | 8  | 1     | 0 (0) | 206  |
|                |     |     |     |    |                         | High                                       | 28200.6  | 2082509  | 27427.32 | 2069621 | 504 |       | 22483   | 2082043 | 7  | 3     | 0 (0) | 1014 |
|                |     |     |     |    |                         | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |          |          |          |         |     |       |         |         |    |       |       |      |
|                | CC2 | 50  | 120 | 32 | Downlink<br>&<br>Uplink | Low  | 27624.48 | 2072907  | 27601.44 | 2072523 | 0   | 120   | 22451   | 2072827 | 8  | 2     | 0 (0) | 4    |
|                |     |     |     |    |                         | Mid  | 27949.44 | 2078323  | 27779.52 | 2075491 | 102 |       | 22470   | 2078299 | 0  | 1     | 1 (4) | 214  |
|                |     |     |     |    |                         | High                                       | 28275    | 2083749  | 27526.2  | 2071269 | 504 |       | 22489   | 2083771 | 11 | 2     | 1 (4) | 1020 |
|                |     |     |     |    |                         | Channel spacing CC2-CC3=49.92 MHz (Note 1) |          |          |          |         |     |       |         |         |    |       |       |      |
|                | CC3 | 50  | 120 | 32 | Downlink<br>&<br>Uplink | Low  | 27674.4  | 2073739  | 27651.36 | 2073355 | 0   | 120   | 22454   | 2073691 | 0  | 0     | 1 (4) | 8    |
|                |     |     |     |    |                         | Mid  | 27999.36 | 2079155  | 27829.44 | 2076323 | 102 |       | 22473   | 2079163 | 4  | 2     | 1 (4) | 216  |
|                |     |     |     |    |                         | High                                       | 28324.92 | 2084581  | 27576.12 | 2072101 | 504 |       | 22492   | 2084635 | 3  | 4     | 1 (4) | 1024 |
|                |     |     |     |    |                         | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |          |          |          |         |     |       |         |         |    |       |       |      |
| 100+50<br>+100 | CC1 | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 27550.08 | 2071667  | 27502.56 | 2070875 | 0   | 120   | 22446   | 2071387 | 4  | 7     | 1 (4) | 22   |
|                |     |     |     |    |                         | Mid  | 27849.96 | 2076665  | 27655.56 | 2073425 | 102 |       | 22463   | 2076283 | 1  | 3     | 1 (4) | 218  |
|                |     |     |     |    |                         | High                                       | 28151.16 | 2081685  | 27377.88 | 2068797 | 504 |       | 22480   | 2081179 | 11 | 1     | 0 (0) | 1010 |
|                |     |     |     |    |                         | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |          |          |          |         |     |       |         |         |    |       |       |      |
|                | CC2 | 50  | 120 | 32 | Downlink<br>&<br>Uplink | Low  | 27624.48 | 2072907  | 27601.44 | 2072523 | 0   | 120   | 22451   | 2072827 | 8  | 2     | 0 (0) | 4    |
|                |     |     |     |    |                         | Mid  | 27924.36 | 2077905  | 27754.44 | 2075073 | 102 |       | 22469   | 2078011 | 5  | 6     | 1 (4) | 224  |
|                |     |     |     |    |                         | High                                       | 28225.56 | 2082925  | 27476.76 | 2070445 | 504 |       | 22486   | 2082907 | 3  | 1     | 1 (4) | 1018 |
|                |     |     |     |    |                         | Channel spacing CC2-CC3=74.4 MHz (Note 1)  |          |          |          |         |     |       |         |         |    |       |       |      |
|                | CC3 | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 27698.88 | 2074147  | 27651.36 | 2073355 | 0   | 120   | 22454   | 2073691 | 0  | 0     | 1 (4) | 8    |
|                |     |     |     |    |                         | Mid  | 27998.76 | 2079145  | 27804.36 | 2075905 | 102 |       | 22472   | 2078875 | 9  | 7     | 1 (4) | 226  |
|                |     |     |     |    |                         | High                                       | 28299.96 | 2084165  | 27526.68 | 2071277 | 504 |       | 22489   | 2083771 | 7  | 2     | 1 (4) | 1020 |
|                |     |     |     |    |                         | Channel spacing CC1-CC2=74.4 MHz (Note 1)  |          |          |          |         |     |       |         |         |    |       |       |      |
| 100+100<br>+50 | CC1 | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 27550.08 | 2071667  | 27502.56 | 2070875 | 0   | 120   | 22446   | 2071387 | 4  | 7     | 1 (4) | 22   |
|                |     |     |     |    |                         | Mid  | 27849.96 | 2076665  | 27655.56 | 2073425 | 102 |       | 22463   | 2076283 | 1  | 3     | 1 (4) | 218  |
|                |     |     |     |    |                         | High                                       | 28150.56 | 2081675  | 27377.28 | 2068787 | 504 |       | 22480   | 2081179 | 4  | 2     | 0 (0) | 1012 |
|                |     |     |     |    |                         | Channel spacing CC1-CC2=99.96 MHz (Note 1) |          |          |          |         |     |       |         |         |    |       |       |      |
|                | CC2 | 100 | 120 | 66 | Downlink<br>&<br>Uplink | Low  | 27650.04 | 2073333  | 27602.52 | 2072541 | 0   | 120   | 22451   | 2072827 | 11 | 1     | 0 (0) | 2    |
|                |     |     |     |    |                         | Mid  | 27949.92 | 2078331  | 27755.52 | 2075091 | 102 |       | 22469   | 2078011 | 8  | 5     | 1 (4) | 222  |
|                |     |     |     |    |                         | High                                       | 28250.52 | 2083341  | 27477.24 | 2070453 | 504 |       | 22486   | 2082907 | 11 | 0     | 1 (4) | 1016 |

|              | CC3               | 50                | 120 | 32             | Downlink & Uplink | Channel spacing CC2-CC3=74.4 MHz (Note 1) |  |         |          |         |     |     |       |         |   |   |       |      |  |  |  |
|--------------|-------------------|-------------------|-----|----------------|-------------------|---|--|---------|----------|---------|-----|-----|-------|---------|---|---|-------|------|--|--|--|
|              |                   |                   |     |                |                   | Low                                       | 27724.44   | 2074573 | 27701.4  | 2074189 | 0   | 120 | 22457 | 2074555 | 3 | 1 | 1 (4) | 10   |  |  |  |
|              |                   |                   |     |                |                   | Mid                                       | 28024.32   | 2079571 | 27854.4  | 2076739 | 102 |     | 22474 | 2079451 | 0 | 1 | 0 (0) | 206  |  |  |  |
|              |                   |                   |     |                |                   | High                                      | 28324.92   | 2084581 | 27576.12 | 2072101 | 504 |     | 22492 | 2084635 | 3 | 4 | 1 (4) | 1024 |  |  |  |
| 100+100 +100 | CC1<br>CC2<br>CC3 | 100<br>100<br>100 | 120 | 66<br>66<br>66 | Downlink & Uplink | Low,<br>Mid,<br>High                      | Same values as for Low, Mid, High range in Table 4.3.1.2.3.5.7-2 for CBW combination 100+100+100, CC1, CC2, CC3 and SCS=120 kHz. |         |          |         |     |     |       |         |   |   |       |      |  |  |  |

Note 1: Corresponds to nominal channel spacing in accordance with TS 38.101-2 [8], clause 5.4A.1 for the channel bandwidths of the two respective NR component carriers.

Note 2: CCs are specified in increasing frequency order. CC1 is used as PCell if nothing else is specified in the test case.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Note 4: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

#### 4.3.1.2.3.5.15 CA\_n261Q

FFS

#### 4.3.1.2.4 NR intra-band non-contiguous CA configurations in FR2

##### 4.3.1.2.4.1 NR Intra-band non-contiguous CA configurations for CA\_n257

##### 4.3.1.2.4.2 NR Intra-band non-contiguous CA configurations for CA\_n258

##### 4.3.1.2.4.3 FFS

##### 4.3.1.2.4.4 NR Intra-band non-contiguous CA configurations for CA\_n260

##### 4.3.1.2.4.4.1 CA\_n260(XA)

Editor's note: This clause is reserved for test frequencies for CA\_n260(XA) configurations where x is  $\geq 2$ , e.g. CA\_n260(2A), CA\_n260(3A) and CA\_n260(4A)

##### 4.3.1.2.4.4.2 CA\_n260(A-I)

Editor's note: CBW=400 MHz for NR band n260 is only supported by for SCS 120kHz. Test frequencies for CA\_n260(A-I) are currently limited to SCS 120kHz for all CCs. Test frequencies for mixed numerologies between CCs is FFS.

**Table 4.3.1.2.4.4.2-1: NR Intra-Band non-contiguous CA configuration CA\_n260(A-I), SCS=120 kHz, Max Wgap**

| CBW combination                           | CC  | Band width [MHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz] | Carrier centre [ARFCN]   | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | CORE SET#0 Offset [RBs] | CORE SET#0 Index | offset ToPo intA (SIB1) [PRBs] |
|---|-----|------------------|--------------------------|-------------------|----------------------|--|---------------|-----------------------------------|--------------------------------|--------------------|------|-------------------------------|-----------|-------------------------|------------------|--------------------------------|
| CA_n260(A-I); A (400MHz) - I (350-400MHz) |     |                  |                          |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
| 400,<br>50+100+<br>100+100                | CC1 | 400              | 264                      | Downlink & Uplink | Max Wgap             | Same test frequencies as n260 for Low range and channel bandwidth=400 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.               |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC2 | 50               | 32                       |                   |                      | Same test frequencies as for CA_n260I for High range, CBW combination 50+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC3 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC4 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC5 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
| 400,<br>100+100+<br>100+50                | CC1 | 400              | 264                      | Downlink & Uplink | Max Wgap             | Same test frequencies as n260 for Low range and channel bandwidth=400 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.               |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC2 | 100              | 66                       |                   |                      | Same test frequencies as for CA_n260I for High range, CBW combination 100+100+100+50 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC3 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC4 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC5 | 50               | 32                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
| 400,<br>100+100+<br>100+100               | CC1 | 400              | 264                      | Downlink & Uplink | Max Wgap             | Same test frequencies as n260 for Low range and channel bandwidth=400 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.               |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC2 | 100              | 66                       |                   |                      | Same test frequencies as for CA_n260I for High range, CBW combination 100+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2. |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC3 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC4 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC5 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
| CA_n260(A-I); I (350-400MHz) – A (400MHz) |     |                  |                          |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
| 50+100+<br>100+100,<br>400                | CC1 | 50               | 32                       | Downlink & Uplink | Max Wgap             | Same test frequencies as CA_n260I for Low range, CBW combination 50+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.       |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC2 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC3 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC4 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC5 | 400              | 264                      |                   |                      | Same test frequencies as for n260 for High range and channel bandwidth=400 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.          |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
| 100+100+<br>100+50,<br>400                | CC1 | 100              | 66                       | Downlink & Uplink | Max Wgap             | Same test frequencies as for CA_n260I for Low range, CBW combination 100+100+100+50 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.   |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC2 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC3 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC4 | 50               | 32                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC5 | 400              | 264                      |                   |                      | Same test frequencies as for n260 for High range and channel bandwidth=400 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.          |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
| 100+100+<br>100+100,<br>400               | CC1 | 100              | 66                       | Downlink & Uplink | Max Wgap             | Same test frequencies as for CA_n260I for Low range, CBW combination 100+100+100+100 and SCS=120kHz in Table 4.3.1.2.3.4.8-2.  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC2 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC3 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC4 | 100              | 66                       |                   |                      |  |               |                                   |                                |                    |      |                               |           |                         |                  |                                |
|   | CC5 | 400              | 264                      |                   |                      | Same test frequencies as for n260 for High range and channel bandwidth=400 MHz and SCS=120kHz in Table 4.3.1.2.1.4-2.          |               |                                   |                                |                    |      |                               |           |                         |                  |                                |

4.3.1.2.4.5 NR Intra-band non-contiguous CA configurations for CA\_n261

4.3.1.2.4.5.1 CA\_n261(XA)

**Table 4.3.1.2.4.5.1-1: NR Intra-Band non-contiguous CA configuration CA\_n261(2A), SCS=120 kHz, Max Wgap**

| CBW combination                                   | CC  | Bandwidth [MHz] | Range             |          | Test frequencies and signalling parameters  |
|---|-----|-----------------|-------------------|----------|---|
| <b>CA_n260(2A); A (50-400MHz) - A (50-400MHz)</b> |     |                 |                   |          |   |
| CBW1+CBW2   | CC1 | CBW1            | Downlink & Uplink | Max Wgap | Table 4.3.1.2.1.4-2: Low range for CBW=CBW1, where CBW1= 50 MHz, 100 MHz, 200 MHz or 400 MHz  |
|   | CC2 | CBW2            | Downlink & Uplink |          | Table 4.3.1.2.1.4-2: High range for CBW=CBW2, where CBW2= 50 MHz, 100 MHz, 200 MHz or 400 MHz |

### 4.3.1.3 Test frequencies for NR band combinations between FR1 and FR2

#### 4.3.1.3.1 NR inter-band CA configurations between FR1 and FR2

#### 4.3.1.3.2 NR-DC configurations between FR1 and FR2

##### 4.3.1.3.2.1 NR-DC configurations between FR1 and FR2 (two bands)

**Table 4.3.1.3.2.1-1: NR-DC configurations between FR1 and FR2 (two bands)**

| NR CA configuration | UL configuration | NR downlink configuration 1 | NR downlink configuration 2 | NR uplink configuration 1 | NR uplink configuration 2 | Applicable for protocol testing (Note 1) |
|---------------------|------------------|-----------------------------|-----------------------------|---------------------------|---------------------------|--|
| DC_n78A-n257A       | DC_n78A-n257A    | n78A                        | n257A                       | n78A                      | n257A                     | Yes                                      |
| DC_n78A-n257G       | DC_n78A-n257A    | n78A                        | CA_n257G                    | n78A                      | n257A                     | No                                       |
| DC_n78A-n257H       | DC_n78A-n257A    | n78A                        | CA_n257H                    | n78A                      | n257A                     | No                                       |
| DC_n78A-n257I       | DC_n78A-n257A    | n78A                        | CA_n257I                    | n78A                      | n257A                     | No                                       |
| DC_n79A-n257A       | DC_n79A-n257A    | n79A                        | n257A                       | n79A                      | n257A                     | Yes                                      |
| DC_n79A-n257G       | DC_n79A-n257A    | n79A                        | CA_n257G                    | n79A                      | n257A                     | No                                       |
| DC_n79A-n257H       | DC_n79A-n257A    | n79A                        | CA_n257H                    | n79A                      | n257A                     | No                                       |
| DC_n79A-n257I       | DC_n79A-n257A    | n79A                        | CA_n257I                    | n79A                      | n257A                     | No                                       |

Note 1: Protocol testing is limited to NR-DC configurations with 2CC.

### 4.3.1.4 Test frequencies for EN-DC band combinations within FR1

#### 4.3.1.4.1 Inter-band EN-DC configurations within FR1

##### 4.3.1.4.1.1 General

For inter-band EN-DC configurations as listed in this clause, the following apply:

For the E-UTRA band and E-UTRA CA configurations, test frequencies as specified in TS 36.508 [2], clause 4.3.1 are used.

For the NR band and NR CA configurations, test frequencies as specified in clause 4.3.1.1 are used.

For the EN-DC inter-band configuration that includes an EN-DC contiguous configuration (e.g. DC\_2A-(n)71AA) the EN-DC contiguous configuration is listed in the NR configuration column and the test frequencies as specified in clause 4.3.1.4.2 are used.

For the secondary NR band in inter-band signalling test cases, the band selected is based on the subset of NR bands supported within the EN-DC configurations specified in Table 4.3.1.4.1.2-1 for NR FR1 and 4.3.1.5.1.2-1 for NR FR2.

## 4.3.1.4.1.2

Inter-band EN-DC configurations within FR1 (two bands)

**Table 4.3.1.4.1.2-1: Inter-band EN-DC configurations within FR1 (two bands)**

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_1A_n3A           | DC_1A_n3A                  | 1A                                  | n3A                             | 1A                                | n3A                           | Yes                                      |
| DC_1A_n28A          | DC_1A_n28A                 | 1A                                  | n28A                            | 1A                                | n28A                          | Yes                                      |
| DC_1A_n40A          | DC_1A_n40A                 | 1A                                  | n40A                            | 1A                                | n40A                          | Yes                                      |
| DC_1A_n51A          | DC_1A_n51A                 | 1A                                  | n51A                            | 1A                                | n51A                          | Yes                                      |
| DC_1A_n77A          | DC_1A_n77A                 | 1A                                  | n77A                            | 1A                                | n77A                          | Yes                                      |
| DC_1A_n77C          | DC_1A_n77A                 | 1A                                  | CA_n77C                         | 1A                                | n77A                          | FFS (NR 2CC)                             |
| DC_1A_n78A          | DC_1A_n78A                 | 1A                                  | n78A                            | 1A                                | n78A                          | Yes                                      |
| DC_1A_n78C          | DC_1A_n78A                 | 1A                                  | CA_n78C                         | 1A                                | n78A                          | Yes (NR 2CC)                             |
| DC_1A_n79A          | DC_1A_n79A                 | 1A                                  | n79A                            | 1A                                | n79A                          | Yes                                      |
| DC_1A_n79C          | DC_1A_n79A                 | 1A                                  | CA_n79C                         | 1A                                | n79A                          | FFS (NR 2CC)                             |
| DC_2A_n5A           | DC_2A_n5A                  | 2A                                  | n5A                             | 2A                                | n5A                           | Yes                                      |
| DC_2A_n41A          | DC_2A_n41A                 | 2A                                  | n41A                            | 2A                                | n41A                          | Yes                                      |
| DC_2C_n41A          | DC_2A_n41A                 | CA_2C                               | n41A                            | 2A                                | n41A                          | No                                       |
|                     | DC_2C_n41A                 | CA_2C                               | n41A                            | CA_2C                             | n41A                          | No                                       |
| DC_2A_n66A          | DC_2A_n66A                 | 2A                                  | n66A                            | 2A                                | n66A                          | Yes                                      |
| DC_2A_n71A          | DC_2A_n71A                 | 2A                                  | n71A                            | 2A                                | n71A                          | Yes                                      |
| DC_2A_n78A          | DC_2A_n78A                 | 2A                                  | n78A                            | 2A                                | n78A                          | Yes                                      |
| DC_3A_n1A           | DC_3A_n1A                  | 3A                                  | n1A                             | 3A                                | n1A                           | Yes                                      |
| DC_3A_n7A           | DC_3A_n7A                  | 3A                                  | n7A                             | 3A                                | n7A                           | Yes                                      |
| DC_3A_n28A          | DC_3A_n28A                 | 3A                                  | n28A                            | 3A                                | n28A                          | Yes                                      |
| DC_3A_n40A          | DC_3A_n40A                 | 3A                                  | n40A                            | 3A                                | n40A                          | Yes                                      |
| DC_3A_n41A          | DC_3A_n41A                 | 3A                                  | n41A                            | 3A                                | n41A                          | Yes                                      |
| DC_3A_n51A          | DC_3A_n51A                 | 3A                                  | n51A                            | 3A                                | n51A                          | Yes                                      |
| DC_3A_n77A          | DC_3A_n77A                 | 3A                                  | n77A                            | 3A                                | n77A                          | Yes                                      |
| DC_3A_n77C          | DC_3A_n77A                 | 3A                                  | CA_n77C                         | 3A                                | n77A                          | FFS (NR 2CC)                             |
| DC_3A_n78A          | DC_3A_n78A                 | 3A                                  | n78A                            | 3A                                | n78A                          | Yes                                      |
| DC_3A_n78C          | DC_3A_n78A                 | 3A                                  | CA_n78C                         | 3A                                | n78A                          | Yes (NR 2CC)                             |
| DC_3C_n78A          | DC_3A_n78A                 | CA_3C                               | n78A                            | 3A                                | n78A                          | No                                       |
| DC_3A_n79A          | DC_3A_n79A                 | 3A                                  | n79A                            | 3A                                | n79A                          | Yes                                      |
| DC_3A_n79C          | DC_3A_n79A                 | 3A                                  | CA_n79C                         | 3A                                | n79A                          | FFS (NR 2CC)                             |
| DC_5A_n2A           | DC_5A_n2A                  | 5A                                  | n2A                             | 5A                                | n2A                           | Yes                                      |
| DC_5A_n40A          | DC_5A_n40A                 | 5A                                  | n40A                            | 5A                                | n40A                          | Yes                                      |
| DC_5A_n66A          | DC_5A_n66A                 | 5A                                  | n66A                            | 5A                                | n66A                          | Yes                                      |
| DC_5A_n78A          | DC_5A_n78A                 | 5A                                  | n78A                            | 5A                                | n78A                          | Yes                                      |
| DC_7A-7A_n78A       | DC_7A_n78A                 | CA_7A-7A                            | n78A                            | 7A                                | n78A                          | No                                       |
| DC_7A_n1A           | DC_7A_n1A                  | 7A                                  | n1A                             | 7A                                | n1A                           | Yes                                      |
| DC_7A_n3A           | DC_7A_n3A                  | 7A                                  | n3A                             | 7A                                | n3A                           | Yes                                      |
| DC_7A_n28A          | DC_7A_n28A                 | 7A                                  | n28A                            | 7A                                | n28A                          | Yes                                      |
| DC_7A_n51A          | DC_7A_n51A                 | 7A                                  | n51A                            | 7A                                | n51A                          | Yes                                      |
| DC_7A_n66A          | DC_7A_n66A                 | 7A                                  | n66A                            | 7A                                | n66A                          | Yes                                      |
| DC_7A_n78A          | DC_7A_n78A                 | 7A                                  | n78A                            | 7A                                | n78A                          | Yes                                      |
| DC_7C_n66A          | DC_7A_n66A                 | CA_7C                               | n66A                            | 7A                                | n66A                          | No                                       |
| DC_7C_n78A          | DC_7A_n78A                 | CA_7C                               | n78A                            | 7A                                | n78A                          | No                                       |
| DC_8A_n1A           | DC_8A_n1A                  | 8A                                  | n1A                             | 8A                                | n1A                           | Yes                                      |
| DC_8A_n3A           | DC_8A_n3A                  | 8A                                  | n3A                             | 8A                                | n3A                           | Yes                                      |
| DC_8A_n40A          | DC_8A_n40A                 | 8A                                  | n40A                            | 8A                                | n40A                          | Yes                                      |
| DC_8A_n41A          | DC_8A_n41A                 | 8A                                  | n41A                            | 8A                                | n41A                          | Yes                                      |
| DC_8A_n77A          | DC_8A_n77A                 | 8A                                  | n77A                            | 8A                                | n77A                          | Yes                                      |
| DC_8A_n78A          | DC_8A_n78A                 | 8A                                  | n78A                            | 8A                                | n78A                          | Yes                                      |
| DC_8A_n79A          | DC_8A_n79A                 | 8A                                  | n79A                            | 8A                                | n79A                          | Yes                                      |
| DC_11A_n77A         | DC_11A_n77A                | 11A                                 | n77A                            | 11A                               | n77A                          | Yes                                      |
| DC_11A_n78A         | DC_11A_n78A                | 11A                                 | n78A                            | 11A                               | n78A                          | Yes                                      |
| DC_11A_n79A         | DC_11A_n79A                | 11A                                 | n79A                            | 11A                               | n79A                          | Yes                                      |
| DC_12A_n5A          | DC_12A_n5A                 | 12A                                 | n5A                             | 12A                               | n5A                           | Yes                                      |
| DC_12A_n66A         | DC_12A_n66A                | 12A                                 | n66A                            | 12A                               | n66A                          | Yes                                      |
| DC_12A_n78A         | DC_12A_n78A                | 12A                                 | n78A                            | 12A                               | n78A                          | Yes                                      |
| DC_13A_n2A          | DC_13A_n2A                 | 13A                                 | n2A                             | 13A                               | n2A                           | Yes                                      |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_13A_n66A         | DC_13A_n66A                | 13A                                 | n66A                            | 13A                               | n66A                          | Yes                                      |
| DC_14A_n2A          | DC_14A_n2A                 | 14A                                 | n2A                             | 14A                               | n2A                           | Yes                                      |
| DC_14A_n66A         | DC_14A_n66A                | 14A                                 | n66A                            | 14A                               | n66A                          | Yes                                      |
| DC_18A_n77A         | DC_18A_n77A                | 18A                                 | n77A                            | 18A                               | n77A                          | Yes                                      |
| DC_18A_n78A         | DC_18A_n78A                | 18A                                 | n78A                            | 18A                               | n78A                          | Yes                                      |
| DC_18A_n79A         | DC_18A_n79A                | 18A                                 | n79A                            | 18A                               | n79A                          | Yes                                      |
| DC_19A_n77A         | DC_19A_n77A                | 19A                                 | n77A                            | 19A                               | n77A                          | Yes                                      |
| DC_19A_n77C         | DC_19A_n77A                | 19A                                 | CA_n77C                         | 19A                               | n77A                          | FFS (NR 2CC)                             |
| DC_19A_n78A         | DC_19A_n78A                | 19A                                 | n78A                            | 19A                               | n78A                          | Yes                                      |
| DC_19A_n78C         | DC_19A_n78A                | 19A                                 | CA_n78C                         | 19A                               | n78A                          | Yes (NR 2CC)                             |
| DC_19A_n79A         | DC_19A_n79A                | 19A                                 | n79A                            | 19A                               | n79A                          | Yes                                      |
| DC_19A_n79C         | DC_19A_n79A                | 19A                                 | CA_n79C                         | 19A                               | n79A                          | FFS (NR 2CC)                             |
| DC_20A_n1A          | DC_20A_n1A                 | 20A                                 | n1A                             | 20A                               | n1A                           | Yes                                      |
| DC_20A_n3A          | DC_20A_n3A                 | 20A                                 | n3A                             | 20A                               | n3A                           | Yes                                      |
| DC_20A_n8A          | DC_20A_n8A                 | 20A                                 | n8A                             | 20A                               | n8A                           | Yes                                      |
| DC_20A_n28A         | DC_20A_n28A                | 20A                                 | n28A                            | 20A                               | n28A                          | Yes                                      |
| DC_20A_n51A         | DC_20A_n51A                | 20A                                 | n51A                            | 20A                               | n51A                          | Yes                                      |
| DC_20A_n77A         | DC_20A_n77A                | 20A                                 | n77A                            | 20A                               | n77A                          | Yes                                      |
| DC_20A_n78A         | DC_20A_n78A                | 20A                                 | n78A                            | 20A                               | n78A                          | Yes                                      |
| DC_21A_n77A         | DC_21A_n77A                | 21A                                 | n77A                            | 21A                               | n77A                          | Yes                                      |
| DC_21A_n77C         | DC_21A_n77A                | 21A                                 | CA_n77C                         | 21A                               | n77A                          | FFS (NR 2CC)                             |
| DC_21A_n78A         | DC_21A_n78A                | 21A                                 | n78A                            | 21A                               | n78A                          | Yes                                      |
| DC_21A_n78C         | DC_21A_n78A                | 21A                                 | CA_n78C                         | 21A                               | n78A                          | Yes (NR 2CC)                             |
| DC_21A_n79A         | DC_21A_n79A                | 21A                                 | n79A                            | 21A                               | n79A                          | Yes                                      |
| DC_21A_n79C         | DC_21A_n79A                | 21A                                 | CA_n79C                         | 21A                               | n79A                          | FFS (NR 2CC)                             |
| DC_25A_n41A         | DC_25A_n41A                | 25A                                 | n41A                            | 25A                               | n41A                          | Yes                                      |
| DC_26A_n41A         | DC_26A_n41A                | 26A                                 | n41A                            | 26A                               | n41A                          | Yes                                      |
| DC_26A_n77A         | DC_26A_n77A                | 26A                                 | n77A                            | 26A                               | n77A                          | Yes                                      |
| DC_26A_n78A         | DC_26A_n78A                | 26A                                 | n78A                            | 26A                               | n78A                          | Yes                                      |
| DC_26A_n79A         | DC_26A_n79A                | 26A                                 | n79A                            | 26A                               | n79A                          | Yes                                      |
| DC_28A_n3A          | DC_28A_n3A                 | 28A                                 | n3A                             | 28A                               | n3A                           | Yes                                      |
| DC_28A_n51A         | DC_28A_n51A                | 28A                                 | n51A                            | 28A                               | n51A                          | Yes                                      |
| DC_28A_n77A         | DC_28A_n77A                | 28A                                 | n77A                            | 28A                               | n77A                          | Yes                                      |
| DC_28A_n77C         | DC_28A_n77A                | 28A                                 | CA_n77C                         | 28A                               | n77A                          | FFS (NR 2CC)                             |
| DC_28A_n78A         | DC_28A_n78A                | 28A                                 | n78A                            | 28A                               | n78A                          | Yes                                      |
| DC_28A_n78C         | DC_28A_n78A                | 28A                                 | CA_n78C                         | 28A                               | n78A                          | Yes (NR 2CC)                             |
| DC_28A_n79A         | DC_28A_n79A                | 28A                                 | n79A                            | 28A                               | n79A                          | Yes                                      |
| DC_28A_n79C         | DC_28A_n79A                | 28A                                 | CA_n79C                         | 28A                               | n79A                          | FFS (NR 2CC)                             |
| DC_30A_n5A          | DC_30A_n5A                 | 30A                                 | n5A                             | 30A                               | n5A                           | Yes                                      |
| DC_30A_n66A         | DC_30A_n66A                | 30A                                 | n66A                            | 30A                               | n66A                          | Yes                                      |
| DC_38A_n78A         | -                          | 38A                                 | n78A                            | -                                 | -                             | Yes                                      |
| DC_39A_n78A         | DC_39A_n78A                | 39A                                 | n78A                            | 39A                               | n78A                          | Yes                                      |
| DC_39A_n41A         | DC_39A_n41A                | 39A                                 | n41A                            | 39A                               | n41A                          | Yes                                      |
| DC_39A_n79A         | DC_39A_n79A                | 39A                                 | n79A                            | 39A                               | n79A                          | Yes                                      |
| DC_40A_n1A          | DC_40A_n1A                 | 40A                                 | n1A                             | 40A                               | n1A                           | Yes                                      |
| DC_40A_n41A         | DC_40A_n41A                | 40A                                 | n41A                            | 40A                               | n41A                          | Yes                                      |
| DC_40A_n77A         | -                          | 40A                                 | n77A                            | -                                 | -                             | Yes                                      |
| DC_40A_n78A         | DC_40A_n78A                | 40A                                 | n78A                            | 40A                               | n78A                          | Yes                                      |
| DC_40C_n78A         | DC_40A_n78A                | CA_40C                              | n78A                            | 40A                               | n78A                          | No                                       |
|                     | DC_40C_n78A                | CA_40C                              | n78A                            | CA_40C                            | n78A                          | No                                       |
| DC_41A_n77A         | DC_41A_n77A                | 41A                                 | n77A                            | 41A                               | n77A                          | Yes                                      |
| DC_41C_n77A         | DC_41A_n77A                | CA_41C                              | n77A                            | 41A                               | n77A                          | No                                       |
| DC_41A_n78A         | DC_41A_n78A                | 41A                                 | n78A                            | 41A                               | n78A                          | Yes                                      |
| DC_41C_n78A         | DC_41A_n78A                | CA_41C                              | n78A                            | 41A                               | n78A                          | No                                       |
| DC_41A_n79A         | DC_41A_n79A                | 41A                                 | n79A                            | 41A                               | n79A                          | Yes                                      |
| DC_41C_n79A         | DC_41A_n79A                | CA_41C                              | n79A                            | 41A                               | n79A                          | No                                       |
| DC_42A_n51A         | DC_42A_n51A                | 42A                                 | n51A                            | 42A                               | n51A                          | Yes                                      |
| DC_42A_n77A         | -                          | 42A                                 | n77A                            | -                                 | -                             | Yes                                      |
| DC_42A_n77C         | -                          | 42A                                 | CA_n77C                         | -                                 | -                             | FFS (NR 2CC)                             |
| DC_42C_n77A         | -                          | CA_42C                              | n77A                            | -                                 | -                             | No                                       |
| DC_42C_n77C         | -                          | CA_42C                              | CA_n77C                         | -                                 | -                             | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_42D_n77A         | -                          | CA_42D                              | n77A                            | -                                 | -                             | No                                       |
| DC_42E_n77A         | -                          | CA_42E                              | n77A                            | -                                 | -                             | No                                       |
| DC_42A_n78A         | -                          | 42A                                 | n78A                            | -                                 | -                             | Yes                                      |
| DC_42A_n78C         | -                          | 42A                                 | CA_n78C                         | -                                 | -                             | Yes (NR 2CC)                             |
| DC_42C_n78A         | -                          | CA_42C                              | n78A                            | -                                 | -                             | No                                       |
| DC_42C_n78C         | -                          | CA_42C                              | CA_n78C                         | -                                 | -                             | No                                       |
| DC_42D_n78A         | -                          | CA_42D                              | n78A                            | -                                 | -                             | No                                       |
| DC_42E_n78A         | -                          | CA_42E                              | n78A                            | -                                 | -                             | No                                       |
| DC_42A_n79A         | -                          | 42A                                 | n79A                            | -                                 | -                             | Yes                                      |
| DC_42A_n79C         | -                          | 42A                                 | CA_n79C                         | -                                 | -                             | FFS (NR 2CC)                             |
| DC_42C_n79A         | -                          | CA_42C                              | n79A                            | -                                 | -                             | No                                       |
| DC_42C_n79C         | -                          | CA_42C                              | CA_n79C                         | -                                 | -                             | No                                       |
| DC_42D_n79A         | -                          | CA_42D                              | n79A                            | -                                 | -                             | No                                       |
| DC_42E_n79A         | -                          | CA_42E                              | n79A                            | -                                 | -                             | No                                       |
| DC_46A_n78A         | -                          | 46A                                 | n78A                            | -                                 | -                             | No                                       |
| DC_46C_n78A         | -                          | CA_46C                              | n78A                            | -                                 | -                             | No                                       |
| DC_46D_n78A         | -                          | CA_46D                              | n78A                            | -                                 | -                             | No                                       |
| DC_46E_n78A         | -                          | CA_46E                              | n78A                            | -                                 | -                             | No                                       |
| DC_48A_n5A          | DC_48A_n5A                 | 48A                                 | n5A                             | 48A                               | n5A                           | Yes                                      |
| DC_48A_n66A         | DC_48A_n66A                | 48A                                 | n66A                            | 48A                               | n66A                          | Yes                                      |
| DC_66A_n2A          | DC_66A_n2A                 | 66A                                 | n2A                             | 66A                               | n2A                           | Yes                                      |
| DC_66A_n5A          | DC_66A_n5A                 | 66A                                 | n5A                             | 66A                               | n5A                           | Yes                                      |
| DC_66A_n41A         | DC_66A_n41A                | 66A                                 | n41A                            | 66A                               | n41A                          | Yes                                      |
| DC_66A_n71A         | DC_66A_n71A                | 66A                                 | n71A                            | 66A                               | n71A                          | Yes                                      |
| DC_66A_n78A         | DC_66A_n78A                | 66A                                 | n78A                            | 66A                               | n78A                          | Yes                                      |

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

## 4.3.1.4.1.3

Inter-band EN-DC configurations within FR1 (three bands)

**Table 4.3.1.4.1.3-1: Inter-band EN-DC configurations within FR1 (three bands)**

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_1A-3A_n28A       | DC_1A_n28A                 | CA_1A-3A                            | n28A                            | 1A                                | n28A                          | No                                       |
|                     | DC_3A_n28A                 | CA_1A-3A                            | n28A                            | 3A                                | n28A                          | No                                       |
| DC_1A-3A_n78A       | DC_1A_n78A                 | CA_1A-3A                            | n78A                            | 1A                                | n78A                          | No                                       |
|                     | DC_3A_n78A                 | CA_1A-3A                            | n78A                            | 3A                                | n78A                          | No                                       |
| DC_1A-3C_n78A       | DC_1A_n78A                 | CA_1A-3C                            | n78A                            | 1A                                | n78A                          | No                                       |
|                     | DC_3A_n78A                 | CA_1A-3C                            | n78A                            | 3A                                | n78A                          | No                                       |
| DC_1A-3A_n79A       | DC_1A_n79A                 | CA_1A-3A                            | n79A                            | 1A                                | n79A                          | No                                       |
|                     | DC_3A_n79A                 | CA_1A-3A                            | n79A                            | 3A                                | n79A                          | No                                       |
| DC_1A-7A_n3A        | DC_1A_n3A                  | CA_1A-7A                            | n3A                             | 1A                                | n3A                           | No                                       |
|                     | DC_7A_n3A                  | CA_1A-7A                            | n3A                             | 7A                                | n3A                           | No                                       |
| DC_1A-7A_n78A       | DC_1A_n78A                 | CA_1A-7A                            | n78A                            | 1A                                | n78A                          | No                                       |
|                     | DC_7A_n78A                 | CA_1A-7A                            | n78A                            | 7A                                | n78A                          | No                                       |
| DC_1A-8A_n3A        | DC_1A_n3A                  | CA_1A-8A                            | n3A                             | 1A                                | n3A                           | No                                       |
|                     | DC_8A_n3A                  | CA_1A-8A                            | n3A                             | 8A                                | n3A                           | No                                       |
| DC_1A-19A_n78A      | DC_1A_n78A                 | CA_1A-19A                           | n78A                            | 1A                                | n78A                          | No                                       |
|                     | DC_19A_n78A                | CA_1A-19A                           | n78A                            | 19A                               | n78A                          | No                                       |
| DC_1A-19A_n79A      | DC_1A_n79A                 | CA_1A-19A                           | n79A                            | 1A                                | n79A                          | No                                       |
|                     | DC_19A_n79A                | CA_1A-19A                           | n79A                            | 19A                               | n79A                          | No                                       |
| DC_1A-20A_n3A       | DC_1A_n3A                  | CA_1A-20A                           | n3A                             | 1A                                | n3A                           | No                                       |
|                     | DC_20A_n3A                 | CA_1A-20A                           | n3A                             | 20A                               | n3A                           | No                                       |
| DC_1A-20A_n78A      | DC_1A_n78A                 | CA_1A-20A                           | n78A                            | 1A                                | n78A                          | No                                       |
|                     | DC_20A_n78A                | CA_1A-20A                           | n78A                            | 20A                               | n78A                          | No                                       |
| DC_1A-21A_n78A      | DC_1A_n78A                 | CA_1A-21A                           | n78A                            | 1A                                | n78A                          | No                                       |
|                     | DC_21A_n78A                | CA_1A-21A                           | n78A                            | 21A                               | n78A                          | No                                       |
| DC_1A-21A_n79A      | DC_1A_n79A                 | CA_1A-21A                           | n79A                            | 1A                                | n79A                          | No                                       |
|                     | DC_21A_n79A                | CA_1A-21A                           | n79A                            | 21A                               | n79A                          | No                                       |
| DC_1A-21A_n79A      | DC_1A_n79A                 | CA_1A-21A                           | n79A                            | 1A                                | n79A                          | No                                       |
|                     | DC_21A_n79A                | CA_1A-21A                           | n79A                            | 21A                               | n79A                          | No                                       |
| DC_1A-28A_n3A       | DC_1A_n3A                  | CA_1A-28A                           | n3A                             | 1A                                | n3A                           | No                                       |
|                     | DC_28A_n3A                 | CA_1A-28A                           | n3A                             | 28A                               | n3A                           | No                                       |
| DC_1A_n28A-n78A     | DC_1A_n28A                 | 1A                                  | CA_n28A-n78A                    | 1A                                | n28A                          | Yes (NR 2CC)                             |
|                     | DC_1A_n78A                 | 1A                                  | CA_n28A-n78A                    | 1A                                | n78A                          | No                                       |
| DC_1A-42A_n78A      | DC_1A_n78A                 | CA_1A-42A                           | n78A                            | 1A                                | n78A                          | No                                       |
| DC_1A-42C_n78A      | DC_1A_n78A                 | CA_1A-42C                           | n78A                            | 1A                                | n78A                          | No                                       |
| DC_1A-42D_n78A      | DC_1A_n78A                 | CA_1A-42D                           | n78A                            | 1A                                | n78A                          | No                                       |
| DC_1A-42E_n78A      | DC_1A_n78A                 | CA_1A-42E                           | n78A                            | 1A                                | n78A                          | No                                       |
| DC_1A-42A_n79A      | DC_1A_n79A                 | CA_1A-42A                           | n79A                            | 1A                                | n79A                          | No                                       |
| DC_1A-42C_n79A      | DC_1A_n79A                 | CA_1A-42C                           | n79A                            | 1A                                | n79A                          | No                                       |
| DC_1A-42D_n79A      | DC_1A_n79A                 | CA_1A-42D                           | n79A                            | 1A                                | n79A                          | No                                       |
| DC_1A-42E_n79A      | DC_1A_n79A                 | CA_1A-42E                           | n79A                            | 1A                                | n79A                          | No                                       |
| DC_1A_n78A-n79A     | DC_1A_n78A                 | 1A                                  | CA_n78A-n79A                    | 1A                                | n78A                          | Yes (NR 2CC)                             |
|                     | DC_1A_n79A                 | 1A                                  | CA_n78A-n79A                    | 1A                                | n79A                          | No                                       |
| DC_2A-2A-14A_n66A   | DC_2A_n66A                 | CA_2A-2A-14A                        | n66A                            | 2A                                | n66A                          | No                                       |
|                     | DC_14A_n66A                | CA_2A-2A-14A                        | n66A                            | 14A                               | n66A                          | No                                       |
| DC_2A-14A_n2A       | DC_2A_n2A                  | CA_2A-14A                           | n2A                             | 2A                                | n2A                           | No                                       |
|                     | DC_14A_n2A                 | CA_2A-14A                           | n2A                             | 14A                               | n2A                           | No                                       |
| DC_2A-14A_n66A      | DC_2A_n66A                 | CA_2A-14A                           | n66A                            | 2A                                | n66A                          | No                                       |
|                     | DC_14A_n66A                | CA_2A-14A                           | n66A                            | 14A                               | n66A                          | No                                       |
| DC_2A-66A_n5A       | DC_2A_n5A                  | CA_2A-66A                           | n5A                             | 2A                                | n5A                           | No                                       |
|                     | DC_66A_n5A                 | CA_2A-66A                           | n5A                             | 66A                               | n5A                           | No                                       |
| DC_2A-66A_n41A      | DC_2A_n41A                 | CA_2A-66A                           | n41A                            | 2A                                | n41A                          | No                                       |
|                     | DC_66A_n41A                | CA_2A-66A                           | n41A                            | 66A                               | n41A                          | No                                       |
| DC_2A-66A_n71A      | DC_2A_n71A                 | CA_2A-66A                           | n71A                            | 2A                                | n71A                          | No                                       |
|                     | DC_66A_n71A                | CA_2A-66A                           | n71A                            | 66A                               | n71A                          | No                                       |
| DC_2A-(n)71AA       | DC_2A_n71A                 | 2A                                  | DC_(n)71AA                      | 2A                                | n71A                          | No                                       |
|                     | DC_(n)71AA                 | 2A                                  | DC_(n)71AA                      | -                                 | DC_(n)71AA                    | No                                       |
| DC_3A-7A_n1A        | DC_3A_n1A                  | CA_3A-7A                            | n1A                             | 3A                                | n1A                           | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
|                     | DC_7A_n1A                  | CA_3A-7A                            | n1A                             | 7A                                | n1A                           | No                                       |
| DC_3A-7A_n78A       | DC_3A_n78A                 | CA_3A-7A                            | n78A                            | 1A                                | n78A                          | No                                       |
|                     | DC_7A_n78A                 | CA_3A-7A                            | n78A                            | 7A                                | n78A                          | No                                       |
| DC_3A-8A_n1A        | DC_3A_n1A                  | CA_3A-8A                            | n1A                             | 3A                                | n1A                           | No                                       |
|                     | DC_8A_n1A                  | CA_3A-8A                            | n1A                             | 8A                                | n1A                           | No                                       |
| DC_3A-19A_n78A      | DC_3A_n78A                 | CA_3A-19A                           | n78A                            | 3A                                | n78A                          | No                                       |
|                     | DC_19A_n78A                | CA_3A-19A                           | n78A                            | 19A                               | n78A                          | No                                       |
| DC_3A-19A_n79A      | DC_3A_n79A                 | CA_3A-19A                           | n79A                            | 3A                                | n79A                          | No                                       |
|                     | DC_19A_n79A                | CA_3A-19A                           | n79A                            | 19A                               | n79A                          | No                                       |
| DC_3A-20A_n1A       | DC_3A_n1A                  | CA_3A-20A                           | n1A                             | 3A                                | n1A                           | No                                       |
|                     | DC_20A_n1A                 | CA_3A-20A                           | n1A                             | 20A                               | n1A                           | No                                       |
| DC_3A-21A_n78A      | DC_3A_n78A                 | CA_3A-21A                           | n78A                            | 3A                                | n78A                          | No                                       |
|                     | DC_21A_n78A                | CA_3A-21A                           | n78A                            | 21A                               | n78A                          | No                                       |
| DC_3A-21A_n79A      | DC_3A_n79A                 | CA_3A-21A                           | n79A                            | 3A                                | n79A                          | No                                       |
|                     | DC_21A_n79A                | CA_3A-21A                           | n79A                            | 21A                               | n79A                          | No                                       |
| DC_3A_n28A-n78A     | DC_3A_n28A                 | 3A                                  | CA_n28A-n78A                    | 3A                                | n28A                          | Yes (NR 2CC)                             |
|                     | DC_3A_n78A                 | 3A                                  | CA_n28A-n78A                    | 3A                                | n78A                          | No                                       |
| DC_3A-40A_n1A       | DC_3A_n1A                  | CA_3A-40A                           | n1A                             | 3A                                | n1A                           | No                                       |
|                     | DC_40A_n1A                 | CA_3A-40A                           | n1A                             | 40A                               | n1A                           | No                                       |
| DC_3A-42A_n78A      | DC_3A_n78A                 | CA_3A-42A                           | n78A                            | 3A                                | n78A                          | No                                       |
| DC_3A-42C_n78A      | DC_3A_n78A                 | CA_3A-42C                           | n78A                            | 3A                                | n78A                          | No                                       |
| DC_3A-42D_n78A      | DC_3A_n78A                 | CA_3A-42D                           | n78A                            | 3A                                | n78A                          | No                                       |
| DC_3A-42E_n78A      | DC_3A_n78A                 | CA_3A-42E                           | n78A                            | 3A                                | n78A                          | No                                       |
| DC_3A-42A_n79A      | DC_3A_n79A                 | CA_3A-42A                           | n79A                            | 3A                                | n79A                          | No                                       |
| DC_3A-42C_n79A      | DC_3A_n79A                 | CA_3A-42C                           | n79A                            | 3A                                | n79A                          | No                                       |
| DC_3A-42D_n79A      | DC_3A_n79A                 | CA_3A-42D                           | n79A                            | 3A                                | n79A                          | No                                       |
| DC_3A-42E_n79A      | DC_3A_n79A                 | CA_3A-42E                           | n79A                            | 3A                                | n79A                          | No                                       |
| DC_3A_n78A-n79A     | DC_3A_n78A                 | 3A                                  | CA_n78A-n79A                    | 3A                                | n78A                          | Yes (NR 2CC)                             |
|                     | DC_3A_n79A                 | 3A                                  | CA_n78A-n79A                    | 3A                                | n79A                          | No                                       |
| DC_5A-7A_n78A       | DC_5A_n78A                 | CA_5A-7A                            | n78A                            | 5A                                | n78A                          | No                                       |
|                     | DC_7A_n78A                 | CA_5A-7A                            | n78A                            | 7A                                | n78A                          | No                                       |
| DC_7A-8A_n1A        | DC_7A_n1A                  | CA_7A-8A                            | n1A                             | 7A                                | n1A                           | No                                       |
|                     | DC_8A_n1A                  | CA_7A-8A                            | n1A                             | 8A                                | n1A                           | No                                       |
| DC_7A-20A_n1A       | DC_7A_n1A                  | CA_7A-20A                           | n1A                             | 7A                                | n1A                           | No                                       |
|                     | DC_20A_n1A                 | CA_7A-20A                           | n1A                             | 20A                               | n1A                           | No                                       |
| DC_7A-20A_n3A       | DC_7A_n3A                  | CA_7A-20A                           | n3A                             | 7A                                | n3A                           | No                                       |
|                     | DC_20A_n3A                 | CA_7A-20A                           | n3A                             | 20A                               | n3A                           | No                                       |
| DC_7A-20A_n78A      | DC_7A_n78A                 | CA_7A-20A                           | n78A                            | 7A                                | n78A                          | No                                       |
|                     | DC_20A_n78A                | CA_7A-20A                           | n78A                            | 20A                               | n78A                          | No                                       |
| DC_7A-28A_n3A       | DC_7A_n3A                  | CA_7A-28A                           | n3A                             | 7A                                | n3A                           | No                                       |
|                     | DC_28A_n3A                 | CA_7A-28A                           | n3A                             | 28A                               | n3A                           | No                                       |
| DC_7A_n28A-n78A     | DC_7A_n28A                 | 7A                                  | CA_n28A-n78A                    | 7A                                | n28A                          | Yes (NR 2CC)                             |
|                     | DC_7A_n78A                 | 7A                                  | CA_n28A-n78A                    | 7A                                | n78A                          | No                                       |
| DC_14A-66A_n2A      | DC_14A_n2A                 | CA_14A-66A                          | n2A                             | 14A                               | n2A                           | No                                       |
|                     | DC_66A_n2A                 | CA_14A-66A                          | n2A                             | 66A                               | n2A                           | No                                       |
| DC_14A-66A_n66A     | DC_14A_n66A                | CA_14A-66A                          | n66A                            | 14A                               | n66A                          | No                                       |
|                     | DC_66A_n66A                | CA_14A-66A                          | n66A                            | 66A                               | n66A                          | No                                       |
| DC_14A-66A-66A_n2A  | DC_14A_n2A                 | CA_14A-66A-66A                      | n2A                             | 14A                               | n2A                           | No                                       |
|                     | DC_66A_n2A                 | CA_14A-66A-66A                      | n2A                             | 66A                               | n2A                           | No                                       |
| DC_19A-21A_n78A     | DC_19A_n78A                | CA_19A-21A                          | n78A                            | 19A                               | n78A                          | No                                       |
|                     | DC_21A_n78A                | CA_19A-21A                          | n78A                            | 21A                               | n78A                          | No                                       |
| DC_19A-21A_n79A     | DC_19A_n79A                | CA_19A-21A                          | n79A                            | 19A                               | n79A                          | No                                       |
|                     | DC_21A_n79A                | CA_19A-21A                          | n79A                            | 21A                               | n79A                          | No                                       |
| DC_19A-42A_n78A     | DC_19A_n78A                | CA_19A-42A                          | n78A                            | 19A                               | n78A                          | No                                       |
| DC_19A-42A_n79A     | DC_19A_n79A                | CA_19A-42A                          | n79A                            | 19A                               | n79A                          | No                                       |
| DC_19A-42C_n78A     | DC_19A_n78A                | CA_19A-42C                          | n78A                            | 19A                               | n78A                          | No                                       |
| DC_19A-42C_n79A     | DC_19A_n79A                | CA_19A-42C                          | n79A                            | 19A                               | n79A                          | No                                       |
| DC_19A_n78A-n79A    | DC_19A_n78A                | 19A                                 | CA_n78A-n79A                    | 19A                               | n78A                          | Yes (NR 2CC)                             |
|                     | DC_19A_n79A                | 19A                                 | CA_n78A-n79A                    | 19A                               | n79A                          | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_20A_n28A-n78A    | DC_20A_n28A                | 20A                                 | CA_n28A-n78A                    | 20A                               | n28A                          | Yes (NR 2CC)                             |
|                     | DC_20A_n78A                | 20A                                 | CA_n28A-n78A                    | 20A                               | n78A                          | No                                       |
| DC_21A-42A_n78A     | DC_21A_n78A                | CA_21A-42A                          | n78A                            | 21A                               | n78A                          | No                                       |
| DC_21A-42C_n78A     | DC_21A_n78A                | CA_21A-42C                          | n78A                            | 21A                               | n78A                          | No                                       |
| DC_21A-42A_n79A     | DC_21A_n79A                | CA_21A-42A                          | n79A                            | 21A                               | n79A                          | No                                       |
| DC_21A-42C_n79A     | DC_21A_n79A                | CA_21A-42C                          | n79A                            | 21A                               | n79A                          | No                                       |
| DC_21A_n78A-n79A    | DC_21A_n78A                | 21A                                 | CA_n78A-n79A                    | 21A                               | n78A                          | Yes (NR 2CC)                             |
|                     | DC_21A_n79A                | 21A                                 | CA_n78A-n79A                    | 21A                               | n79A                          | No                                       |
| DC_66A_(n)71AA      | DC_66A_n71A                | 66A                                 | DC_(n)71AA                      | 66A                               | n71A                          | No                                       |
|                     | DC_(n)71AA                 | 66A                                 | DC_(n)71AA                      | -                                 | DC_(n)71AA                    | No                                       |

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

## 4.3.1.4.1.4

Inter-band EN-DC configurations within FR1 (four bands)

**Table 4.3.1.4.1.4-1: Inter-band EN-DC configurations within FR1 (four bands)**

| <b>EN-DC configuration</b> | <b>Uplink EN-DC Configuration</b> | <b>EN-DC E-UTRA downlink configuration</b> | <b>EN-DC NR downlink configuration</b> | <b>EN-DC E-UTRA uplink configuration</b> | <b>EN-DC NR uplink configuration</b> |
|----------------------------|-----------------------------------|--|--|--|--------------------------------------|
| DC_1A-3A-7A_n28A           | DC_1A_n28A                        | CA_1A-3A-7A                                | n28A                                   | 1A                                       | n28A                                 |
|                            | DC_3A_n28A                        | CA_1A-3A-7A                                | n28A                                   | 3A                                       | n28A                                 |
|                            | DC_7A_n28A                        | CA_1A-3A-7A                                | n28A                                   | 7A                                       | n28A                                 |
| DC_1A-3A-7A_n78A           | DC_1A_n78A                        | CA_1A-3A-7A                                | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A-7A                                | n78A                                   | 3A                                       | n78A                                 |
|                            | DC_7A_n78A                        | CA_1A-3A-7A                                | n78A                                   | 7A                                       | n78A                                 |
| DC_1A-3A-19A_n78A          | DC_1A_n78A                        | CA_1A-3A-19A                               | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A-19A                               | n78A                                   | 3A                                       | n78A                                 |
|                            | DC_19A_n78A                       | CA_1A-3A-19A                               | n78A                                   | 19A                                      | n78A                                 |
| DC_1A-3A-19A_n79A          | DC_1A_n79A                        | CA_1A-3A-19A                               | n79A                                   | 1A                                       | n79A                                 |
|                            | DC_3A_n79A                        | CA_1A-3A-19A                               | n79A                                   | 3A                                       | n79A                                 |
|                            | DC_19A_n79A                       | CA_1A-3A-19A                               | n79A                                   | 19A                                      | n79A                                 |
| DC_1A-3A-20A_n78A          | DC_1A_n78A                        | CA_1A-3A-20A                               | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A-20A                               | n78A                                   | 3A                                       | n78A                                 |
|                            | DC_20A_n78A                       | CA_1A-3A-20A                               | n78A                                   | 20A                                      | n78A                                 |
| DC_1A-3A-21A_n78A          | DC_1A_n78A                        | CA_1A-3A-21A                               | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A-21A                               | n78A                                   | 3A                                       | n78A                                 |
|                            | DC_21A_n78A                       | CA_1A-3A-21A                               | n78A                                   | 21A                                      | n78A                                 |
| DC_1A-3A-21A_n79A          | DC_1A_n79A                        | CA_1A-3A-21A                               | n79A                                   | 1A                                       | n79A                                 |
|                            | DC_3A_n79A                        | CA_1A-3A-21A                               | n79A                                   | 3A                                       | n79A                                 |
|                            | DC_21A_n79A                       | CA_1A-3A-21A                               | n79A                                   | 21A                                      | n79A                                 |
| DC_1A-3A_n28A-n78A         | DC_1A_n28A                        | CA_1A-3A                                   | CA_n28A-n78A                           | 1A                                       | n28A                                 |
|                            | DC_1A_n78A                        | CA_1A-3A                                   | CA_n28A-n78A                           | 1A                                       | n78A                                 |
|                            | DC_3A_n28A                        | CA_1A-3A                                   | CA_n28A-n78A                           | 3A                                       | n28A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A                                   | CA_n28A-n78A                           | 3A                                       | n78A                                 |
| DC_1A-3A-42A_n78A          | DC_1A_n78A                        | CA_1A-3A-42A                               | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A-42A                               | n78A                                   | 3A                                       | n78A                                 |
| DC_1A-3A-42C_n78A          | DC_1A_n78A                        | CA_1A-3A-42C                               | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A-42C                               | n78A                                   | 3A                                       | n78A                                 |
| DC_1A-3A-42D_n78A          | DC_1A_n78A                        | CA_1A-3A-42D                               | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A-42D                               | n78A                                   | 3A                                       | n78A                                 |
| DC_1A-3A-42A_n79A          | DC_1A_n79A                        | CA_1A-3A-42A                               | n79A                                   | 1A                                       | n79A                                 |
|                            | DC_3A_n79A                        | CA_1A-3A-42A                               | n79A                                   | 3A                                       | n79A                                 |
| DC_1A-3A-42C_n79A          | DC_1A_n79A                        | CA_1A-3A-42C                               | n79A                                   | 1A                                       | n79A                                 |
|                            | DC_3A_n79A                        | CA_1A-3A-42C                               | n79A                                   | 3A                                       | n79A                                 |
| DC_1A-3A-42D_n79A          | DC_1A_n79A                        | CA_1A-3A-42D                               | n79A                                   | 1A                                       | n79A                                 |
|                            | DC_3A_n79A                        | CA_1A-3A-42D                               | n79A                                   | 3A                                       | n79A                                 |
| DC_1A-7A-20A_n78A          | DC_1A_n78A                        | CA_1A-7A-20A                               | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_7A_n78A                        | CA_1A-7A-20A                               | n78A                                   | 7A                                       | n78A                                 |
|                            | DC_20A_n78A                       | CA_1A-7A-20A                               | n78A                                   | 20A                                      | n78A                                 |
| DC_1A-7A_n28A-n78A         | DC_1A_n28A                        | CA_1A-7A                                   | CA_n28A-n78A                           | 1A                                       | n28A                                 |
|                            | DC_1A_n78A                        | CA_1A-7A                                   | CA_n28A-n78A                           | 1A                                       | n78A                                 |
|                            | DC_7A_n28A                        | CA_1A-7A                                   | CA_n28A-n78A                           | 7A                                       | n28A                                 |
|                            | DC_7A_n78A                        | CA_1A-7A                                   | CA_n28A-n78A                           | 7A                                       | n78A                                 |
| DC_1A-19A-21A_n78A         | DC_1A_n78A                        | CA_1A-19A-21A                              | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_19A_n78A                       | CA_1A-19A-21A                              | n78A                                   | 19A                                      | n78A                                 |
|                            | DC_21A_n78A                       | CA_1A-19A-21A                              | n78A                                   | 21A                                      | n78A                                 |
| DC_1A-19A-21A_n79A         | DC_1A_n79A                        | CA_1A-19A-21A                              | n79A                                   | 1A                                       | n79A                                 |
|                            | DC_19A_n79A                       | CA_1A-19A-21A                              | n79A                                   | 19A                                      | n79A                                 |
|                            | DC_21A_n79A                       | CA_1A-19A-21A                              | n79A                                   | 21A                                      | n79A                                 |
| DC_1A-19A-42A_n78A         | DC_1A_n78A                        | CA_1A-19A-42A                              | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_19A_n78A                       | CA_1A-19A-42A                              | n78A                                   | 19A                                      | n78A                                 |
| DC_1A-19A-42C_n78A         | DC_1A_n78A                        | CA_1A-19A-42C                              | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_19A_n78A                       | CA_1A-19A-42C                              | n78A                                   | 19A                                      | n78A                                 |
| DC_1A-19A-42A_n79A         | DC_1A_n79A                        | CA_1A-19A-42A                              | n79A                                   | 1A                                       | n79A                                 |
|                            | DC_19A_n79A                       | CA_1A-19A-42A                              | n79A                                   | 19A                                      | n79A                                 |
| DC_1A-19A-42C_n79A         | DC_1A_n79A                        | CA_1A-19A-42C                              | n79A                                   | 1A                                       | n79A                                 |
|                            | DC_19A_n79A                       | CA_1A-19A-42C                              | n79A                                   | 19A                                      | n79A                                 |

| EN-DC configuration   | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration |
|-----------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|
| DC_1A-20A_n28A-n78A   | DC_1A_n28A                 | CA_1A-20A                           | CA_n28A-n78A                    | 1A                                | n28A                          |
|                       | DC_1A_n78A                 | CA_1A-20A                           | CA_n28A-n78A                    | 1A                                | n78A                          |
|                       | DC_20A_n28A                | CA_1A-20A                           | CA_n28A-n78A                    | 20A                               | n28A                          |
|                       | DC_20A_n78A                | CA_1A-20A                           | CA_n28A-n78A                    | 20A                               | n78A                          |
| DC_1A-21A-42A_n78A    | DC_1A_n78A                 | CA_1A-21A-42A                       | n78A                            | 1A                                | n78A                          |
|                       | DC_21A_n78A                | CA_1A-21A-42A                       | n78A                            | 21A                               | n78A                          |
| DC_1A-21A-42C_n78A    | DC_1A_n78A                 | CA_1A-21A-42C                       | n78A                            | 1A                                | n78A                          |
|                       | DC_21A_n78A                | CA_1A-21A-42C                       | n78A                            | 21A                               | n78A                          |
| DC_1A-21A-42A_n79A    | DC_1A_n79A                 | CA_1A-21A-42A                       | n79A                            | 1A                                | n79A                          |
|                       | DC_21A_n79A                | CA_1A-21A-42A                       | n79A                            | 21A                               | n79A                          |
| DC_1A-21A-42C_n79A    | DC_1A_n79A                 | CA_1A-21A-42C                       | n79A                            | 1A                                | n79A                          |
|                       | DC_21A_n79A                | CA_1A-21A-42C                       | n79A                            | 21A                               | n79A                          |
| DC_2A-2A-14A-66A_n66A | DC_2A_n66A                 | CA_2A-2A-14A-66A                    | n66A                            | 2A                                | n66A                          |
|                       | DC_14A_n66A                | CA_2A-2A-14A-66A                    | n66A                            | 14A                               | n66A                          |
|                       | DC_66A_n66A                | CA_2A-2A-14A-66A                    | n66A                            | 66A                               | n66A                          |
| DC_2A-7A-7A-13A_n66A  | DC_2A_n66A                 | CA_2A-7A-7A-13A                     | n66A                            | 2A                                | n66A                          |
|                       | DC_7A_n66A                 | CA_2A-7A-7A-13A                     | n66A                            | 7A                                | n66A                          |
|                       | DC_13A_n66A                | CA_2A-7A-7A-13A                     | n66A                            | 13A                               | n66A                          |
| DC_2A-7A-7A-66A_n66A  | DC_2A_n66A                 | CA_2A-7A-7A-66A                     | n66A                            | 2A                                | n66A                          |
|                       | DC_7A_n66A                 | CA_2A-7A-7A-66A                     | n66A                            | 7A                                | n66A                          |
|                       | DC_66A_n66A                | CA_2A-7A-7A-66A                     | n66A                            | 66A                               | n66A                          |
| DC_2A-7A-7A-66A_n78A  | DC_2A_n78A                 | CA_2A-7A-7A-66A                     | n78A                            | 2A                                | n78A                          |
|                       | DC_7A_n78A                 | CA_2A-7A-7A-66A                     | n78A                            | 7A                                | n78A                          |
|                       | DC_66A_n78A                | CA_2A-7A-7A-66A                     | n78A                            | 66A                               | n78A                          |
| DC_2A-7A-13A_n66A     | DC_2A_n66A                 | CA_2A-7A-13A                        | n66A                            | 2A                                | n66A                          |
|                       | DC_7A_n66A                 | CA_2A-7A-13A                        | n66A                            | 7A                                | n66A                          |
|                       | DC_13A_n66A                | CA_2A-7A-13A                        | n66A                            | 13A                               | n66A                          |
| DC_2A-7A-66A_n66A     | DC_2A_n66A                 | CA_2A-7A-66A                        | n66A                            | 2A                                | n66A                          |
|                       | DC_7A_n66A                 | CA_2A-7A-66A                        | n66A                            | 7A                                | n66A                          |
|                       | DC_66A_n66A                | CA_2A-7A-66A                        | n66A                            | 66A                               | n66A                          |
| DC_2A-7C-13A_n66A     | DC_2A_n66A                 | CA_2A-7C-13A                        | n66A                            | 2A                                | n66A                          |
|                       | DC_7A_n66A                 | CA_2A-7C-13A                        | n66A                            | 7A                                | n66A                          |
|                       | DC_66A_n66A                | CA_2A-7C-13A                        | n66A                            | 13A                               | n66A                          |
| DC_2A-7C-66A_n66A     | DC_2A_n66A                 | CA_2A-7C-66A                        | n66A                            | 2A                                | n66A                          |
|                       | DC_7A_n66A                 | CA_2A-7C-66A                        | n66A                            | 7A                                | n66A                          |
|                       | DC_66A_n66A                | CA_2A-7C-66A                        | n66A                            | 66A                               | n66A                          |
| DC_2A-7C-66A_n78A     | DC_2A_n78A                 | CA_2A-7C-66A                        | n78A                            | 2A                                | n78A                          |
|                       | DC_7A_n78A                 | CA_2A-7C-66A                        | n78A                            | 7A                                | n78A                          |
|                       | DC_66A_n78A                | CA_2A-7C-66A                        | n78A                            | 66A                               | n78A                          |
| DC_2A-14A-66A_n2A     | DC_2A_n2A                  | CA_2A-14A-66A                       | n2A                             | 2A                                | n2A                           |
|                       | DC_14A_n2A                 | CA_2A-14A-66A                       | n2A                             | 14A                               | n2A                           |
|                       | DC_66A_n2A                 | CA_2A-14A-66A                       | n2A                             | 66A                               | n2A                           |
| DC_2A-14A-66A-66A_n2A | DC_2A_n2A                  | CA_2A-14A-66A-66A                   | n2A                             | 2A                                | n2A                           |
|                       | DC_14A_n2A                 | CA_2A-14A-66A-66A                   | n2A                             | 14A                               | n2A                           |
|                       | DC_66A_n2A                 | CA_2A-14A-66A-66A                   | n2A                             | 66A                               | n2A                           |
| DC_2A-14A-66A_n66A    | DC_2A_n66A                 | CA_2A-14A-66A                       | n66A                            | 2A                                | n66A                          |
|                       | DC_14A_n66A                | CA_2A-14A-66A                       | n66A                            | 14A                               | n66A                          |
|                       | DC_66A_n66A                | CA_2A-14A-66A                       | n66A                            | 66A                               | n66A                          |
| DC_2A-66A-(n)71AA     | DC_2A_n71A                 | CA_2A-66A                           | DC-(n)71AA                      | 2A                                | n71A                          |
|                       | DC_66A_n71A                | CA_2A-66A                           | DC-(n)71AA                      | 66A                               | n71A                          |
|                       | DC_(n)71AA                 | CA_2A-66A                           | DC-(n)71AA                      | -                                 | (n)71AA                       |
| DC_3A-7A-20A_n1A      | DC_3A_n1A                  | CA_3A-7A-20A                        | n1A                             | 3A                                | n1A                           |
|                       | DC_7A_n1A                  | CA_3A-7A-20A                        | n1A                             | 7A                                | n1A                           |
|                       | DC_20A_n1A                 | CA_3A-7A-20A                        | n1A                             | 20A                               | n1A                           |
| DC_3A-7A-20A_n78A     | DC_3A_n78A                 | CA_3A-7A-20A                        | n78A                            | 3A                                | n78A                          |
|                       | DC_7A_n78A                 | CA_3A-7A-20A                        | n78A                            | 7A                                | n78A                          |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|
| DC_3A-7A_n28A-n78A  | DC_20A_n78A                | CA_3A-7A-20A                        | n78A                            | 20A                               | n78A                          |
|                     | DC_3A_n28A                 | CA_3A-7A                            | CA_n28A-n78A                    | 3A                                | n28A                          |
|                     | DC_3A_n78A                 | CA_3A-7A                            | CA_n28A-n78A                    | 3A                                | n78A                          |
|                     | DC_7A_n28A                 | CA_3A-7A                            | CA_n28A-n78A                    | 7A                                | n28A                          |
|                     | DC_7A_n78A                 | CA_3A-7A                            | CA_n28A-n78A                    | 7A                                | n78A                          |
| DC_3A-19A-21A_n78A  | DC_3A_n78A                 | CA_3A-19A-21A                       | n78A                            | 3A                                | n78A                          |
|                     | DC_19A_n78A                | CA_3A-19A-21A                       | n78A                            | 19A                               | n78A                          |
|                     | DC_21A_n78A                | CA_3A-19A-21A                       | n78A                            | 21A                               | n78A                          |
| DC_3A-19A-21A_n79A  | DC_3A_n79A                 | CA_3A-19A-21A                       | n79A                            | 3A                                | n79A                          |
|                     | DC_19A_n79A                | CA_3A-19A-21A                       | n79A                            | 19A                               | n79A                          |
|                     | DC_21A_n79A                | CA_3A-19A-21A                       | n79A                            | 21A                               | n79A                          |
| DC_3A-19A-42A_n78A  | DC_3A_n78A                 | CA_3A-19A-42A                       | n78A                            | 3A                                | n78A                          |
|                     | DC_19A_n78A                | CA_3A-19A-42A                       | n78A                            | 19A                               | n78A                          |
| DC_3A-19A-42C_n78A  | DC_3A_n78A                 | CA_3A-19A-42C                       | n78A                            | 3A                                | n78A                          |
|                     | DC_19A_n78A                | CA_3A-19A-42C                       | n78A                            | 19A                               | n78A                          |
| DC_3A-19A-42A_n79A  | DC_3A_n79A                 | CA_3A-19A-42A                       | n79A                            | 3A                                | n79A                          |
|                     | DC_19A_n79A                | CA_3A-19A-42A                       | n79A                            | 19A                               | n79A                          |
| DC_3A-19A-42C_n79A  | DC_3A_n79A                 | CA_3A-19A-42C                       | n79A                            | 3A                                | n79A                          |
|                     | DC_19A_n79A                | CA_3A-19A-42C                       | n79A                            | 19A                               | n79A                          |
| DC_3A-20A_n28A-n78A | DC_3A_n28A                 | CA_3A-20A                           | CA_n28A-n78A                    | 3A                                | n28A                          |
|                     | DC_3A_n78A                 | CA_3A-20A                           | CA_n28A-n78A                    | 3A                                | n78A                          |
|                     | DC_20A_n28A                | CA_3A-20A                           | CA_n28A-n78A                    | 20A                               | n28A                          |
|                     | DC_20A_n78A                | CA_3A-20A                           | CA_n28A-n78A                    | 20A                               | n78A                          |
| DC_3A-21A-42A_n78A  | DC_3A_n78A                 | CA_3A-21A-42A                       | n78A                            | 3A                                | n78A                          |
|                     | DC_21A_n78A                | CA_3A-21A-42A                       | n78A                            | 21A                               | n78A                          |
| DC_3A-21A-42C_n78A  | DC_3A_n78A                 | CA_3A-21A-42C                       | n78A                            | 3A                                | n78A                          |
|                     | DC_21A_n78A                | CA_3A-21A-42C                       | n78A                            | 21A                               | n78A                          |
| DC_3A-21A-42A_n79A  | DC_3A_n79A                 | CA_3A-21A-42A                       | n79A                            | 3A                                | n79A                          |
|                     | DC_21A_n79A                | CA_3A-21A-42A                       | n79A                            | 21A                               | n79A                          |
| DC_3A-21A-42C_n79A  | DC_3A_n79A                 | CA_3A-21A-42C                       | n79A                            | 3A                                | n79A                          |
|                     | DC_21A_n79A                | CA_3A-21A-42C                       | n79A                            | 21A                               | n79A                          |
| DC_7A-20A_n28A-n78A | DC_7A_n28A                 | CA_7A-20A                           | CA_n28A-n78A                    | 7A                                | n28A                          |
|                     | DC_7A_n78A                 | CA_7A-20A                           | CA_n28A-n78A                    | 7A                                | n78A                          |
|                     | DC_20A_n28A                | CA_7A-20A                           | CA_n28A-n78A                    | 20A                               | n28A                          |
|                     | DC_20A_n78A                | CA_7A-20A                           | CA_n28A-n78A                    | 20A                               | n78A                          |
| DC_19A-21A-42A_n78A | DC_19A_n78A                | CA_19A-21A-42A                      | n78A                            | 19A                               | n78A                          |
|                     | DC_21A_n78A                | CA_19A-21A-42A                      | n78A                            | 21A                               | n78A                          |
| DC_19A-21A-42C_n78A | DC_19A_n78A                | CA_19A-21A-42C                      | n78A                            | 19A                               | n78A                          |
|                     | DC_21A_n78A                | CA_19A-21A-42C                      | n78A                            | 21A                               | n78A                          |
| DC_19A-21A-42A_n79A | DC_19A_n79A                | CA_19A-21A-42A                      | n79A                            | 19A                               | n79A                          |
|                     | DC_21A_n79A                | CA_19A-21A-42A                      | n79A                            | 21A                               | n79A                          |
| DC_19A-21A-42C_n79A | DC_19A_n79A                | CA_19A-21A-42C                      | n79A                            | 19A                               | n79A                          |
|                     | DC_21A_n79A                | CA_19A-21A-42C                      | n79A                            | 21A                               | n79A                          |

## 4.3.1.4.1.5

Inter-band EN-DC configurations within FR1 (five bands)

**Table 4.3.1.4.1.5-1: Inter-band EN-DC configurations within FR1 (five bands)**

| <b>EN-DC configuration</b> | <b>Uplink EN-DC Configuration</b> | <b>EN-DC E-UTRA downlink configuration</b> | <b>EN-DC NR downlink configuration</b> | <b>EN-DC E-UTRA uplink configuration</b> | <b>EN-DC NR uplink configuration</b> |
|----------------------------|-----------------------------------|--|--|--|--------------------------------------|
| DC_1A-3A-5A-41A_n79A       | DC_1A_n79A                        | CA_1A-3A-5A-41A                            | n79A                                   | 1A                                       | n79A                                 |
|                            | DC_3A_n79A                        | CA_1A-3A-5A-41A                            | n79A                                   | 3A                                       | n79A                                 |
|                            | DC_5A_n79A                        | CA_1A-3A-5A-41A                            | n79A                                   | 5A                                       | n79A                                 |
|                            | DC_41A_n79A                       | CA_1A-3A-5A-41A                            | n79A                                   | 41A                                      | n79A                                 |
| DC_1A-3A-7A-20A_n28A       | DC_1A_n28A                        | CA_1A-3A-7A-20A                            | n28A                                   | 1A                                       | n28A                                 |
|                            | DC_3A_n28A                        | CA_1A-3A-7A-20A                            | n28A                                   | 3A                                       | n28A                                 |
|                            | DC_7A_n28A                        | CA_1A-3A-7A-20A                            | n28A                                   | 7A                                       | n28A                                 |
|                            | DC_20A_n28A                       | CA_1A-3A-7A-20A                            | n28A                                   | 20A                                      | n28A                                 |
| DC_1A-3A-7A-20A_n78A       | DC_1A_n78A                        | CA_1A-3A-7A-20A                            | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A-7A-20A                            | n78A                                   | 3A                                       | n78A                                 |
|                            | DC_7A_n78A                        | CA_1A-3A-7A-20A                            | n78A                                   | 7A                                       | n78A                                 |
|                            | DC_20A_n78A                       | CA_1A-3A-7A-20A                            | n78A                                   | 20A                                      | n78A                                 |
| DC_1A-3A-7A_n28A-n78A      | DC_1A_n28A                        | CA_1A-3A-7A                                | CA_n28A-n78A                           | 1A                                       | n28A                                 |
|                            | DC_1A_n78A                        | CA_1A-3A-7A                                | CA_n28A-n78A                           | 1A                                       | n78A                                 |
|                            | DC_3A_n28A                        | CA_1A-3A-7A                                | CA_n28A-n78A                           | 3A                                       | n28A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A-7A                                | CA_n28A-n78A                           | 3A                                       | n78A                                 |
|                            | DC_7A_n28A                        | CA_1A-3A-7A                                | CA_n28A-n78A                           | 7A                                       | n28A                                 |
|                            | DC_7A_n78A                        | CA_1A-3A-7A                                | CA_n28A-n78A                           | 7A                                       | n78A                                 |
| DC_1A-3A-19A-42A_n78A      | DC_1A_n78A                        | CA_1A-3A-19A-42A                           | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A-19A-42A                           | n78A                                   | 3A                                       | n78A                                 |
|                            | DC_19A_n78A                       | CA_1A-3A-19A-42A                           | n78A                                   | 19A                                      | n78A                                 |
| DC_1A-3A-19A-42C_n78A      | DC_1A_n78A                        | CA_1A-3A-19A-42C                           | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A-19A-42C                           | n78A                                   | 3A                                       | n78A                                 |
|                            | DC_19A_n78A                       | CA_1A-3A-19A-42C                           | n78A                                   | 19A                                      | n78A                                 |
| DC_1A-3A-19A-42A_n79A      | DC_1A_n79A                        | CA_1A-3A-19A-42A                           | n79A                                   | 1A                                       | n79A                                 |
|                            | DC_3A_n79A                        | CA_1A-3A-19A-42A                           | n79A                                   | 3A                                       | n79A                                 |
|                            | DC_19A_n79A                       | CA_1A-3A-19A-42A                           | n79A                                   | 19A                                      | n79A                                 |
| DC_1A-3A-19A-42C_n79A      | DC_1A_n79A                        | CA_1A-3A-19A-42C                           | n79A                                   | 1A                                       | n79A                                 |
|                            | DC_3A_n79A                        | CA_1A-3A-19A-42C                           | n79A                                   | 3A                                       | n79A                                 |
|                            | DC_19A_n79A                       | CA_1A-3A-19A-42C                           | n79A                                   | 19A                                      | n79A                                 |
| DC_1A-3A-20A_n28A-n78A     | DC_1A_n28A                        | CA_1A-3A-20A                               | CA_n28A-n78A                           | 1A                                       | n28A                                 |
|                            | DC_1A_n78A                        | CA_1A-3A-20A                               | CA_n28A-n78A                           | 1A                                       | n78A                                 |
|                            | DC_3A_n28A                        | CA_1A-3A-20A                               | CA_n28A-n78A                           | 3A                                       | n28A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A-20A                               | CA_n28A-n78A                           | 3A                                       | n78A                                 |
|                            | DC_20A_n28A                       | CA_1A-3A-20A                               | CA_n28A-n78A                           | 20A                                      | n28A                                 |
|                            | DC_20A_n78A                       | CA_1A-3A-20A                               | CA_n28A-n78A                           | 20A                                      | n78A                                 |
| DC_1A-3A-21A-42A_n78A      | DC_1A_n78A                        | CA_1A-3A-21A-42A                           | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A-21A-42A                           | n78A                                   | 3A                                       | n78A                                 |
|                            | DC_21A_n78A                       | CA_1A-3A-21A-42A                           | n78A                                   | 21A                                      | n78A                                 |
| DC_1A-3A-21A-42C_n78A      | DC_1A_n78A                        | CA_1A-3A-21A-42C                           | n78A                                   | 1A                                       | n78A                                 |
|                            | DC_3A_n78A                        | CA_1A-3A-21A-42C                           | n78A                                   | 3A                                       | n78A                                 |
|                            | DC_21A_n78A                       | CA_1A-3A-21A-                              | n78A                                   | 21A                                      | n78A                                 |

| EN-DC configuration    | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration |
|------------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|
|                        |                            | 42C                                 |                                 |                                   |                               |
| DC_1A-3A-21A-42A_n79A  | DC_1A_n79A                 | CA_1A-3A-21A-42A                    | n79A                            | 1A                                | n79A                          |
|                        | DC_3A_n79A                 | CA_1A-3A-21A-42A                    | n79A                            | 3A                                | n79A                          |
|                        | DC_21A_n79A                | CA_1A-3A-21A-42A                    | n79A                            | 21A                               | n79A                          |
| DC_1A-3A-21A-42C_n79A  | DC_1A_n79A                 | CA_1A-3A-21A-42C                    | n79A                            | 1A                                | n79A                          |
|                        | DC_3A_n79A                 | CA_1A-3A-21A-42C                    | n79A                            | 3A                                | n79A                          |
|                        | DC_21A_n79A                | CA_1A-3A-21A-42C                    | n79A                            | 21A                               | n79A                          |
| DC_1A-7A-20A_n28A-n78A | DC_1A_n28A                 | CA_1A-7A-20A                        | CA_n28A-n78A                    | 1A                                | n28A                          |
|                        | DC_1A_n78A                 | CA_1A-7A-20A                        | CA_n28A-n78A                    | 1A                                | n78A                          |
|                        | DC_7A_n28A                 | CA_1A-7A-20A                        | CA_n28A-n78A                    | 7A                                | n28A                          |
|                        | DC_7A_n78A                 | CA_1A-7A-20A                        | CA_n28A-n78A                    | 7A                                | n78A                          |
|                        | DC_20A_n28A                | CA_1A-7A-20A                        | CA_n28A-n78A                    | 20A                               | n28A                          |
|                        | DC_20A_n78A                | CA_1A-7A-20A                        | CA_n28A-n78A                    | 20A                               | n78A                          |
| DC_1A-19A-21A-42A_n78A | DC_1A_n78A                 | CA_1A-19A-21A-42A                   | n78A                            | 1A                                | n78A                          |
|                        | DC_19A_n78A                | CA_1A-19A-21A-42A                   | n78A                            | 19A                               | n78A                          |
|                        | DC_21A_n78A                | CA_1A-19A-21A-42A                   | n78A                            | 21A                               | n78A                          |
| DC_1A-19A-21A-42C_n78A | DC_1A_n78A                 | CA_1A-19A-21A-42C                   | n78A                            | 1A                                | n78A                          |
|                        | DC_19A_n78A                | CA_1A-19A-21A-42C                   | n78A                            | 19A                               | n78A                          |
|                        | DC_21A_n78A                | CA_1A-19A-21A-42C                   | n78A                            | 21A                               | n78A                          |
| DC_1A-19A-21A-42A_n79A | DC_1A_n79A                 | CA_1A-19A-21A-42A                   | n79A                            | 1A                                | n79A                          |
|                        | DC_19A_n79A                | CA_1A-19A-21A-42A                   | n79A                            | 19A                               | n79A                          |
|                        | DC_21A_n79A                | CA_1A-19A-21A-42A                   | n79A                            | 21A                               | n79A                          |
| DC_1A-19A-21A-42C_n79A | DC_1A_n79A                 | CA_1A-19A-21A-42C                   | n79A                            | 1A                                | n79A                          |
|                        | DC_19A_n79A                | CA_1A-19A-21A-42C                   | n79A                            | 19A                               | n79A                          |
|                        | DC_21A_n79A                | CA_1A-19A-21A-42C                   | n79A                            | 21A                               | n79A                          |
| DC_3A-7A-20A_n28A-n78A | DC_3A_n28A                 | CA_3A-7A-20A                        | CA_n28A-n78A                    | 3A                                | n28A                          |
|                        | DC_3A_n78A                 | CA_3A-7A-20A                        | CA_n28A-n78A                    | 3A                                | n78A                          |
|                        | DC_7A_n28A                 | CA_3A-7A-20A                        | CA_n28A-n78A                    | 7A                                | n28A                          |
|                        | DC_7A_n78A                 | CA_3A-7A-20A                        | CA_n28A-n78A                    | 7A                                | n78A                          |
|                        | DC_20A_n28A                | CA_3A-7A-20A                        | CA_n28A-n78A                    | 20A                               | n28A                          |
|                        | DC_20A_n78A                | CA_3A-7A-20A                        | CA_n28A-n78A                    | 20A                               | n78A                          |
| DC_3A-19A-21A-42A_n78A | DC_3A_n78A                 | CA_3A-19A-21A-42A                   | n78A                            | 3A                                | n78A                          |
|                        | DC_19A_n78A                | CA_3A-19A-21A-42A                   | n78A                            | 19A                               | n78A                          |
|                        | DC_21A_n78A                | CA_3A-19A-21A-42A                   | n78A                            | 21A                               | n78A                          |
| DC_3A-19A-21A-42C_n78A | DC_3A_n78A                 | CA_3A-19A-21A-42C                   | n78A                            | 3A                                | n78A                          |
|                        | DC_19A_n78A                | CA_3A-19A-21A-42C                   | n78A                            | 19A                               | n78A                          |
|                        | DC_21A_n78A                | CA_3A-19A-21A-42C                   | n78A                            | 21A                               | n78A                          |
| DC_3A-19A-21A-42A_n79A | DC_3A_n79A                 | CA_3A-19A-21A-42A                   | n79A                            | 3A                                | n79A                          |

| EN-DC configuration    | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration |
|------------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|
|                        | DC_19A_n79A                | CA_3A-19A-21A-42A                   | n79A                            | 19A                               | n79A                          |
|                        | DC_21A_n79A                | CA_3A-19A-21A-42A                   | n79A                            | 21A                               | n79A                          |
| DC_3A-19A-21A-42C_n79A | DC_3A_n79A                 | CA_3A-19A-21A-42C                   | n79A                            | 3A                                | n79A                          |
|                        | DC_19A_n79A                | CA_3A-19A-21A-42C                   | n79A                            | 19A                               | n79A                          |
|                        | DC_21A_n79A                | CA_3A-19A-21A-42C                   | n79A                            | 21A                               | n79A                          |

#### 4.3.1.4.1.6 Inter-band EN-DC configurations within FR1 (six bands)

**Table 4.3.1.4.1.6-1: Inter-band EN-DC configurations within FR1 (six bands)**

| EN-DC configuration       | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration |
|---------------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|
| DC_1A-3A-7A-20A_n28A-n78A | DC_1A_n28A                 | CA_1A-3A-7A-20A                     | CA_n28A-n78A                    | 1A                                | n28A                          |
|                           | DC_1A_n78A                 | CA_1A-3A-7A-20A                     | CA_n28A-n78A                    | 1A                                | n78A                          |
|                           | DC_3A_n28A                 | CA_1A-3A-7A-20A                     | CA_n28A-n78A                    | 3A                                | n28A                          |
|                           | DC_3A_n78A                 | CA_1A-3A-7A-20A                     | CA_n28A-n78A                    | 3A                                | n78A                          |
|                           | DC_7A_n28A                 | CA_1A-3A-7A-20A                     | CA_n28A-n78A                    | 7A                                | n28A                          |
|                           | DC_7A_n78A                 | CA_1A-3A-7A-20A                     | CA_n28A-n78A                    | 7A                                | n78A                          |
|                           | DC_20A_n28A                | CA_1A-3A-7A-20A                     | CA_n28A-n78A                    | 20A                               | n28A                          |
|                           | DC_20A_n78A                | CA_1A-3A-7A-20A                     | CA_n28A-n78A                    | 20A                               | n78A                          |

#### 4.3.1.4.2 Intra-band contiguous EN-DC configurations within FR1

4.3.1.4.2.1 – 4.3.1.4.2.40 FFS

4.3.1.4.2.41 Intra-band contiguous EN-DC configurations DC\_(n)41

4.3.1.4.2.41.1 DC\_(n)41AA

**Table 4.3.1.4.2.41.1-1: EN-DC combination DC\_(n)41AA, intra-band contiguous, SCS 15 kHz, 15 kHz NR raster, NR CC at the band edges**

| EN-DC channel bandwidth combination | CC         | Bandwidth [MHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |     |  |
|-------------------------------------|------------|-----------------|-------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|-----------|--|--|-------------------------------------|-----|--|
| E-UTRA: 5MHz + NR: 10MHz            | E-UTRA CC1 | 5               | 25                      | Downlink & Uplink | Low                         | 2508.600               | 39776         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |     |  |
|                                     |            |                 |                         |                   | Mid                         | 2598.000               | 40670         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |     |  |
|                                     |            |                 |                         |                   | High                        | 2677.500               | 41465         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |     |  |
|                                     | NR CC1     | 10              | 52                      |                   | Low                         | 2501.100               | 500220        | 2496.42                           | 499284                          | 0                  | 15    | 6246                          | 499710    | 10                                     | 1                                      | (0)                                 | 1   |  |
|                                     |            |                 |                         |                   | Mid                         | 2590.500               | 518100        | 2567.46                           | 513492                          | 102                |       | 6471                          | 517710    | 2                                      | 1                                      | (4)                                 | 107 |  |
|                                     |            |                 |                         |                   | High                        | 2685.000               | 537000        | 2589.6                            | 517920                          | 504                |       | 6705                          | 536430    | 2                                      | 0                                      | 0 (0)                               | 504 |  |
| E-UTRA: 5MHz + NR: 15MHz            | E-UTRA CC1 | 5               | 25                      | Downlink & Uplink | Low                         | 2513.700               | 39827         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |     |  |
|                                     |            |                 |                         |                   | Mid                         | 2600.400               | 40694         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |     |  |
|                                     |            |                 |                         |                   | High                        | 2672.400               | 41414         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |     |  |
|                                     | NR CC1     | 15              | 79                      | Downlink & Uplink | Low                         | 2503.695               | 500739        | 2496.585                          | 499317                          | 0                  | 15    | 6246                          | 499710    | 11                                     | 0                                      | 0                                   | 0   |  |
|                                     |            |                 |                         |                   | Mid                         | 2590.395               | 518079        | 2564.925                          | 512985                          | 102                |       | 6465                          | 517230    | 11                                     | 1                                      | (4)                                 | 107 |  |
|                                     |            |                 |                         |                   | High                        | 2682.405               | 536481        | 2583.575                          | 16915                           | 504                |       | 6693                          | 535470    | 5                                      | 1                                      | (0)                                 | 505 |  |
| E-UTRA: 5MHz + NR: 20MHz            | E-UTRA CC1 | 5               | 25                      | Downlink & Uplink | Low                         | 2518.500               | 39875         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |     |  |
|                                     |            |                 |                         |                   | Mid                         | 2603.100               | 40721         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |     |  |
|                                     |            |                 |                         |                   | High                        | 2667.300               | 41363         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |     |  |
|                                     | NR CC1     | 20              | 106                     | Downlink & Uplink | Low                         | 2506.005               | 501201        | 2496.465                          | 499293                          | 0                  | 15    | 6246                          | 499710    | 7                                      | 1                                      | (0)                                 | 1   |  |
|                                     |            |                 |                         |                   | Mid                         | 2590.605               | 518121        | 2562.705                          | 512541                          | 102                |       | 6459                          | 516750    | 11                                     | 0                                      | (4)                                 | 106 |  |
|                                     |            |                 |                         |                   | High                        | 2679.795               | 535959        | 2579.535                          | 515907                          | 504                |       | 6681                          | 534510    | 9                                      | 0                                      | (2)                                 | 506 |  |
| E-UTRA: 5MHz + NR: 40MHz            | E-UTRA CC1 | 5               | 25                      | Downlink & Uplink | Low                         | 2538.600               | 40076         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |     |  |
|                                     |            |                 |                         |                   | Mid                         | 2613.000               | 40820         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |     |  |
|                                     | NR         | 40              | 216                     | Downlink          | Low                         | 2516.100               | 503220        | 2496.66                           | 499332                          | 0                  | 15    | 6246                          | 499710    | 6                                      | 0                                      | (0)                                 | 0   |  |

|                                    | CC1           |    |     | & Uplink                | Mid  | 2590.500 | 518100 | 2552.7   | 510540 | 102 |    | 6432 | 514590 | 6  | 0 | (0)   | 102    |
|------------------------------------|---------------|----|-----|-------------------------|------|----------|--------|----------|--------|-----|----|------|--------|----|---|-------|--------|
|                                    |               |    |     |                         | High | 2670.000 | 534000 | 2559.84  | 511968 | 504 |    | 6633 | 530670 | 6  | 1 | (4)   | 509    |
| E-UTRA:<br>5MHz +<br>NR:<br>50MHz  | E-UTRA<br>CC1 | 5  | 25  | Downlink<br>&<br>Uplink | Low  | 2548.500 | 40175  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    |               |    |     |                         | Mid  | 2618.100 | 40871  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    |               |    |     |                         | High | 2637.300 | 41063  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    | NR<br>CC1     | 50 | 270 | Downlink<br>&<br>Uplink | Low  | 2521.005 | 504201 | 2496.705 | 499341 | 0   | 15 | 6246 | 499710 | 3  | 0 | (0)   | 0      |
|                                    |               |    |     |                         | Mid  | 2590.605 | 518121 | 2547.945 | 509589 | 102 |    | 6420 | 513630 | 3  | 0 | (0)   | 102    |
|                                    |               |    |     |                         | High | 2664.795 | 532959 | 2549.775 | 509955 | 504 |    | 6606 | 528510 | 5  | 1 | (0)   | 510505 |
| E-UTRA:<br>10MHz +<br>NR:<br>10MHz | E-UTRA<br>CC1 | 10 | 50  | Downlink<br>&<br>Uplink | Low  | 2511.300 | 39803  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    |               |    |     |                         | Mid  | 2598.000 | 40670  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    |               |    |     |                         | High | 2674.800 | 41438  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    | NR<br>CC1     | 10 | 52  | Downlink<br>&<br>Uplink | Low  | 2501.295 | 500259 | 2496.615 | 499323 | 0   | 15 | 6246 | 499710 | 9  | 0 | (0)   | 0      |
|                                    |               |    |     |                         | Mid  | 2587.995 | 517599 | 955      | 512991 | 102 |    | 6465 | 517230 | 9  | 1 | (4)   | 107    |
|                                    |               |    |     |                         | High | 2684.805 | 536961 | 2589.405 | 517881 | 504 |    | 6705 | 536430 | 3  | 1 | (0)   | 505    |
| E-UTRA:<br>10MHz +<br>NR:<br>15MHz | E-UTRA<br>CC1 | 10 | 50  | Downlink<br>&<br>Uplink | Low  | 2516.100 | 39851  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    |               |    |     |                         | Mid  | 2600.400 | 406974 | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    |               |    |     |                         | High | 2670.000 | 41390  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    | NR<br>CC1     | 15 | 79  | Downlink<br>&<br>Uplink | Low  | 2503.605 | 500721 | 2496.495 | 499299 | 0   | 15 | 6246 | 499710 | 5  | 1 | (0)   | 1      |
|                                    |               |    |     |                         | Mid  | 2587.905 | 517581 | 2562.435 | 512487 | 102 |    | 6459 | 516750 | 5  | 2 | (4)   | 108    |
|                                    |               |    |     |                         | High | 2682.495 | 536499 | 2584.665 | 516933 | 504 |    | 6693 | 535470 | 11 | 0 | (0)   | 504    |
| E-UTRA:<br>10MHz +<br>NR:<br>20MHz | E-UTRA<br>CC1 | 10 | 50  | Downlink<br>&<br>Uplink | Low  | 2521.200 | 39902  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    |               |    |     |                         | Mid  | 2603.100 | 40721  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    |               |    |     |                         | High | 2664.900 | 41339  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    | NR<br>CC1     | 20 | 106 | Downlink<br>&<br>Uplink | Low  | 2506.200 | 501240 | 2496.66  | 499332 | 0   | 15 | 6246 | 499710 | 6  | 0 | 0 (0) | 0      |
|                                    |               |    |     |                         | Mid  | 2588.100 | 517620 | 2560.2   | 512040 | 102 |    | 6453 | 516270 | 6  | 1 | 2 (4) | 107    |
|                                    |               |    |     |                         | High | 2679.900 | 535980 | 2579.64  | 515928 | 504 |    | 6681 | 534510 | 2  | 0 | 1 (2) | 506    |
| E-UTRA:<br>10MHz +<br>NR:<br>40MHz | E-UTRA<br>CC1 | 10 | 50  | Downlink<br>&<br>Uplink | Low  | 2541.300 | 40103  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    |               |    |     |                         | Mid  | 2613.000 | 40820  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    |               |    |     |                         | High | 2644.800 | 41138  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    | NR<br>CC1     | 40 | 216 | Downlink<br>&<br>Uplink | Low  | 2516.295 | 503259 | 2496.855 | 499371 | 0   | 15 | 6249 | 499950 | 1  | 2 | 2 (4) | 6      |
|                                    |               |    |     |                         | Mid  | 2587.995 | 517599 | 2550.195 | 510039 | 102 |    | 6426 | 514110 | 1  | 1 | 0 (0) | 103    |
|                                    |               |    |     |                         | High | 2669.805 | 533961 | 2559.645 | 511929 | 504 |    | 6633 | 530670 | 7  | 2 | 2 (4) | 510    |
| E-UTRA:<br>10MHz +<br>NR:<br>50MHz | E-UTRA<br>CC1 | 10 | 50  | Downlink<br>&<br>Uplink | Low  | 2551.200 | 40202  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    |               |    |     |                         | Mid  | 2618.100 | 40871  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    |               |    |     |                         | High | 2634.900 | 41039  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    | NR<br>CC1     | 50 | 270 | Downlink<br>&<br>Uplink | Low  | 2521.200 | 504240 | 2496.9   | 499380 | 0   | 15 | 6249 | 499950 | 10 | 1 | 2 (4) | 5      |
|                                    |               |    |     |                         | Mid  | 2588.100 | 517620 | 2545.44  | 509088 | 102 |    | 6414 | 513150 | 10 | 0 | 0 (0) | 102    |
|                                    |               |    |     |                         | High | 2664.900 | 532980 | 2549.88  | 509976 | 504 |    | 6606 | 528510 | 10 | 0 | 0 (0) | 504    |
| E-UTRA:<br>15MHz +<br>NR:<br>10MHz | E-UTRA<br>CC1 | 15 | 75  | Downlink<br>&<br>Uplink | Low  | 2513.700 | 39827  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    |               |    |     |                         | Mid  | 2598.000 | 40670  | -        | -      | -   | -  | -    | -      | -  | - | -     | -      |
|                                    | NR            | 10 | 52  | Downlink                | Low  | 2501.205 | 500241 | 2496.525 | 499305 | 0   | 15 | 6246 | 499710 | 3  | 1 | 0 (0) | 1      |

|                                    | CC1           |    |     | & Uplink                | Mid  | 2585.505 | 517101 | 2562.465 | 512493 | 102 |    | 6459 | 516750 | 3  | 2 | 2 (4) | 108 |
|------------------------------------|---------------|----|-----|-------------------------|------|----------|--------|----------|--------|-----|----|------|--------|----|---|-------|-----|
|                                    |               |    |     |                         | High | 2684.895 | 536979 | 2589.495 | 517899 | 504 |    | 6705 | 536430 | 9  | 0 | 0 (0) | 504 |
| E-UTRA:<br>15MHz +<br>NR:<br>15MHz | E-UTRA<br>CC1 | 15 | 75  | Downlink<br>&<br>Uplink | Low  | 2518.500 | 39875  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    |               |    |     |                         | Mid  | 2600.400 | 40694  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    |               |    |     |                         | High | 2667.300 | 41363  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    | NR<br>CC1     | 15 | 79  | Downlink<br>&<br>Uplink | Low  | 2503.500 | 500700 | 2496.39  | 499278 | 0   | 15 | 6246 | 499710 | 0  | 0 | 1 (2) | 2   |
|                                    |               |    |     |                         | Mid  | 2585.400 | 517080 | 2559.93  | 511986 | 102 |    | 6450 | 516030 | 4  | 0 | 0 (0) | 102 |
|                                    |               |    |     |                         | High | 2682.300 | 536460 | 2584.47  | 516894 | 504 |    | 6693 | 535470 | 0  | 0 | 1 (2) | 506 |
| E-UTRA:<br>15MHz +<br>NR:<br>20MHz | E-UTRA<br>CC1 | 15 | 75  | Downlink<br>&<br>Uplink | Low  | 2523.600 | 39926  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    |               |    |     |                         | Mid  | 2603.100 | 40721  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    |               |    |     |                         | High | 2662.200 | 41312  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    | NR<br>CC1     | 20 | 106 | Downlink<br>&<br>Uplink | Low  | 2506.095 | 501219 | 2496.555 | 499311 | 0   | 15 | 6246 | 499710 | 1  | 0 | 0     | 6   |
|                                    |               |    |     |                         | Mid  | 2585.595 | 517119 | 2557.695 | 511539 | 102 |    | 6447 | 515790 | 1  | 2 | 2 (4) | 108 |
|                                    |               |    |     |                         | High | 2679.705 | 535941 | 2579.445 | 515889 | 504 |    | 6681 | 534510 | 3  | 1 | 1 (2) | 507 |
| E-UTRA:<br>15MHz +<br>NR:<br>40MHz | E-UTRA<br>CC1 | 15 | 75  | Downlink<br>&<br>Uplink | Low  | 2543.700 | 40127  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    |               |    |     |                         | Mid  | 2613.000 | 40820  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    |               |    |     |                         | High | 2642.400 | 41114  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    | NR<br>CC1     | 40 | 216 | Downlink<br>&<br>Uplink | Low  | 2516.205 | 503241 | 2496.765 | 499353 | 0   | 15 | 6249 | 499950 | 7  | 2 | 2 (4) | 6   |
|                                    |               |    |     |                         | Mid  | 2585.505 | 517101 | 2547.705 | 509541 | 102 |    | 6420 | 513630 | 7  | 1 | 0 (0) | 103 |
|                                    |               |    |     |                         | High | 2669.895 | 533979 | 2559.735 | 511947 | 504 |    | 6633 | 530670 | 1  | 2 | 2 (4) | 510 |
| E-UTRA:<br>15MHz +<br>NR:<br>50MHz | E-UTRA<br>CC1 | 15 | 75  | Downlink<br>&<br>Uplink | Low  | 2553.600 | 40226  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    |               |    |     |                         | Mid  | 2618.100 | 40871  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    |               |    |     |                         | High | 2632.200 | 41012  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    | NR<br>CC1     | 50 | 270 | Downlink<br>&<br>Uplink | Low  | 2521.095 | 504219 | 2496.795 | 499359 | 0   | 15 | 6249 | 499950 | 5  | 2 | 2 (4) | 6   |
|                                    |               |    |     |                         | Mid  | 2585.595 | 517119 | 2542.935 | 508587 | 102 |    | 6408 | 512670 | 5  | 1 | 0 (0) | 103 |
|                                    |               |    |     |                         | High | 2664.705 | 532941 | 2549.685 | 509937 | 504 |    | 6606 | 528510 | 11 | 1 | 0 (0) | 505 |
| E-UTRA:<br>20MHz +<br>NR:<br>10MHz | E-UTRA<br>CC1 | 20 | 100 | Downlink<br>&<br>Uplink | Low  | 2516.100 | 39851  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    |               |    |     |                         | Mid  | 2598.000 | 40670  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    |               |    |     |                         | High | 2670.000 | 41390  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    | NR<br>CC1     | 10 | 52  | Downlink<br>&<br>Uplink | Low  | 2501.100 | 500220 | 2496.42  | 499284 | 0   | 15 | 6246 | 499710 | 10 | 1 | 0 (0) | 1   |
|                                    |               |    |     |                         | Mid  | 2583.000 | 516600 | 2559.96  | 511992 | 102 |    | 6450 | 516030 | 2  | 0 | 0 (0) | 102 |
|                                    |               |    |     |                         | High | 2685.000 | 537000 | 2589.6   | 517920 | 504 |    | 6705 | 536430 | 2  | 0 | 0 (0) | 504 |
| E-UTRA:<br>20MHz +<br>NR:<br>15MHz | E-UTRA<br>CC1 | 20 | 100 | Downlink<br>&<br>Uplink | Low  | 2521.200 | 39902  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    |               |    |     |                         | Mid  | 2600.400 | 40694  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    |               |    |     |                         | High | 2664.900 | 41339  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    | NR<br>CC1     | 15 | 79  | Downlink<br>&<br>Uplink | Low  | 2503.695 | 500739 | 2496.585 | 499317 | 0   | 15 | 6246 | 499710 | 11 | 0 | 0 (0) | 0   |
|                                    |               |    |     |                         | Mid  | 2582.895 | 516579 | 2557.425 | 511485 | 102 |    | 6444 | 515550 | 11 | 0 | 0 (0) | 102 |
|                                    |               |    |     |                         | High | 2682.405 | 536481 | 2584.575 | 516915 | 504 |    | 6693 | 535470 | 5  | 1 | 0 (0) | 505 |
| E-UTRA:<br>20MHz +<br>NR:<br>20MHz | E-UTRA<br>CC1 | 20 | 100 | Downlink<br>&<br>Uplink | Low  | 2526.000 | 39950  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    |               |    |     |                         | Mid  | 2603.100 | 40721  | -        | -      | -   | -  | -    | -      | -  | - | -     | -   |
|                                    | NR            | 20 | 106 | Downlink                | Low  | 2506.005 | 501201 | 2496.465 | 499293 | 0   | 15 | 6246 | 499710 | 7  | 1 | 0 (0) | 1   |

|                                    | CC1           |    |     | & Uplink                | Mid      | 2583.105 | 516621   | 2555.205 | 511041 | 102 |      | 6441   | 515310 | 7  | 2     | 2 (4) | 108 |
|------------------------------------|---------------|----|-----|-------------------------|----------|----------|----------|----------|--------|-----|------|--------|--------|----|-------|-------|-----|
|                                    |               |    |     | High                    | 2679.795 | 535959   | 2579.535 | 515907   | 504    |     | 6681 | 534510 | 9      | 0  | 1 (2) | 506   |     |
| E-UTRA:<br>20MHz +<br>NR:<br>40MHz | E-UTRA<br>CC1 | 20 | 100 | Downlink<br>&<br>Uplink | Low      | 2546.100 | 40151    | -        | -      | -   | -    | -      | -      | -  | -     | -     | -   |
|                                    |               |    |     |                         | Mid      | 2613.000 | 40820    | -        | -      | -   | -    | -      | -      | -  | -     | -     | -   |
|                                    |               |    |     |                         | High     | 2640.000 | 41090    | -        | -      | -   | -    | -      | -      | -  | -     | -     | -   |
|                                    | NR<br>CC1     | 40 | 216 | Downlink<br>&<br>Uplink | Low      | 2516.100 | 503220   | 2496.66  | 499332 | 0   | 15   | 6246   | 499710 | 6  | 0     | 0 (0) | 0   |
|                                    |               |    |     |                         | Mid      | 2583.000 | 516600   | 2545.2   | 509040 | 102 |      | 6414   | 513150 | 2  | 0     | 1 (2) | 104 |
|                                    |               |    |     |                         | High     | 2670.000 | 534000   | 2559.84  | 511968 | 504 |      | 6633   | 530670 | 6  | 1     | 2 (4) | 509 |
| E-UTRA:<br>20MHz +<br>NR:<br>50MHz | E-UTRA<br>CC1 | 20 | 100 | Downlink<br>&<br>Uplink | Low      | 2556.000 | 40250    | -        | -      | -   | -    | -      | -      | -  | -     | -     | -   |
|                                    |               |    |     |                         | Mid      | 2618.100 | 40871    | -        | -      | -   | -    | -      | -      | -  | -     | -     | -   |
|                                    |               |    |     |                         | High     | 2629.800 | 40988    | -        | -      | -   | -    | -      | -      | -  | -     | -     | -   |
|                                    | NR<br>CC1     | 50 | 270 | Downlink<br>&<br>Uplink | Low      | 2521.005 | 504201   | 2496.705 | 499341 | 0   | 15   | 6246   | 499710 | 3  | 0     | 0 (0) | 0   |
|                                    |               |    |     |                         | Mid      | 2583.105 | 516621   | 2540.445 | 508089 | 102 |      | 6402   | 512190 | 11 | 1     | 0 (0) | 103 |
|                                    |               |    |     |                         | High     | 2664.795 | 532959   | 2549.775 | 509955 | 504 |      | 6606   | 528510 | 5  | 1     | 0 (0) | 505 |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch. ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.

Table 4.3.1.4.2.41.1-1A: EN-DC combination DC\_(n)41AA, intra-band contiguous, SCS 15 kHz, 15 kHz NR raster, E-UTRA CC at the band edges

| EN-DC channel bandwidth combination | CC            | Bandwidth [MHz] | carrierB andwidth [PRBs] | Range                   | Carrier centre [MHz]<br>Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs ] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | k <sub>SSB</sub> | Offset Carrier CORE SET#0 [RBs]<br>Note 3 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |     |
|-------------------------------------|---------------|-----------------|--------------------------|-------------------------|--------------------------------|------------------------|---------------|-----------------------------------|----------------------------------|--------------------|-------|-------------------------------|------------------|---|--|-------------------------------------|-----|
| E-UTRA:<br>20MHz +<br>NR:<br>40MHz  | E-UTRA<br>CC1 | 20              | 100                      | Downlink<br>&<br>Uplink | Low                            | 2506.200               | 39752         | -                                 | -                                | -                  | -     | -                             | -                | -   | -                                      | -                                   |     |
|                                     |               |                 |                          |                         | Mid                            | 2613.000               | 40820         | -                                 | -                                | -                  | -     | -                             | -                | -   | -                                      | -                                   |     |
|                                     |               |                 |                          |                         | High                           | 2679.900               | 41489         | -                                 | -                                | -                  | -     | -                             | -                | -   | -                                      | -                                   |     |
|                                     | NR<br>CC1     | 40              | 216                      | Downlink<br>&<br>Uplink | Low                            | 2536.200               | 507240        | 2516.76                           | 503352                           | 0                  | 15    | 6297                          | 503790           | 2   | 0                                      | 1 (2)                               | 2   |
|                                     |               |                 |                          |                         | Mid                            | 2583.000               | 516600        | 2545.2                            | 509040                           | 102                |       | 6414                          | 513150           | 2   | 0                                      | 1 (2)                               | 104 |
|                                     |               |                 |                          |                         | High                           | 2649.900               | 529980        | 2539.74                           | 507948                           | 504                |       | 6582                          | 526590           | 10  | 1                                      | 1 (2)                               | 512 |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch. ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.4.2.41.1-2: EN-DC combination DC\_(n)41AA, intra-band contiguous, SCS 30 kHz, 30 kHz NR raster, NR CC at the band edges

| EN-DC channel bandwidth combination | CC         | Bandwidth [MHz] | carrier bandwidth [PRBs] | Range             | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |      |  |
|-------------------------------------|------------|-----------------|--------------------------|-------------------|-----------------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|-----------|--|--|-------------------------------------|------|--|
| E-UTRA: 5MHz + NR: 10MHz            | E-UTRA CC1 | 5               | 25                       | Downlink & Uplink | Low                         | 2508.600               | 39776         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     |            |                 |                          |                   | Mid                         | 2598.000               | 40670         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     |            |                 |                          |                   | High                        | 2677.500               | 41465         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     | NR CC1     | 10              | 24                       |                   | Low                         | 2501.100               | 500220        | 2496.78                           | 499356                          | 0                  | 30    | 6252                          | 500190    | 14                                     | 0                                      | 1 (1)                               | 2    |  |
|                                     |            |                 |                          |                   | Mid                         | 2590.500               | 518100        | 2549.46                           | 509892                          | 102                |       | 6477                          | 518190    | 6                                      | 0                                      | 3 (3)                               | 210  |  |
|                                     |            |                 |                          |                   | High                        | 2685.000               | 537000        | 2499.24                           | 499848                          | 504                |       | 6711                          | 536910    | 18                                     | 0                                      | 0 (0)                               | 1008 |  |
| E-UTRA: 5MHz + NR: 15MHz            | E-UTRA CC1 | 5               | 25                       | Downlink & Uplink | Low                         | 2513.700               | 39827         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     |            |                 |                          |                   | Mid                         | 2600.400               | 40694         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     |            |                 |                          |                   | High                        | 2672.400               | 41414         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     | NR CC1     | 15              | 38                       |                   | Low                         | 2503.710               | 500742        | 2496.87                           | 499374                          | 0                  | 30    | 6252                          | 500190    | 8                                      | 0                                      | 1 (1)                               | 2    |  |
|                                     |            |                 |                          |                   | Mid                         | 2590.410               | 518082        | 2546.85                           | 509370                          | 102                |       | 6468                          | 517470    | 12                                     | 0                                      | 0 (0)                               | 204  |  |
|                                     |            |                 |                          |                   | High                        | 2682.390               | 536478        | 2494.11                           | 498822                          | 504                |       | 6699                          | 535950    | 16                                     | 0                                      | 1 (1)                               | 1010 |  |
| E-UTRA: 5MHz + NR: 20MHz            | E-UTRA CC1 | 5               | 25                       | Downlink & Uplink | Low                         | 2518.800               | 39878         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     |            |                 |                          |                   | Mid                         | 2603.100               | 40721         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     |            |                 |                          |                   | High                        | 2667.300               | 41363         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     | NR CC1     | 20              | 51                       |                   | Low                         | 2506.290               | 501258        | 2497.11                           | 499422                          | 0                  | 30    | 6252                          | 500190    | 16                                     | 0                                      | 0 (0)                               | 0    |  |
|                                     |            |                 |                          |                   | Mid                         | 2590.590               | 518118        | 2544.69                           | 508938                          | 102                |       | 6465                          | 517230    | 4                                      | 0                                      | 3 (3)                               | 210  |  |
|                                     |            |                 |                          |                   | High                        | 2679.810               | 535962        | 2489.19                           | 497838                          | 504                |       | 6687                          | 534990    | 0                                      | 0                                      | 2 (2)                               | 1012 |  |
| E-UTRA: 5MHz + NR: 40MHz            | E-UTRA CC1 | 5               | 25                       | Downlink & Uplink | Low                         | 2538.600               | 40076         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     |            |                 |                          |                   | Mid                         | 2613.000               | 40820         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     |            |                 |                          |                   | High                        | 2647.500               | 41165         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     | NR CC1     | 40              | 106                      | Downlink & Uplink | Low                         | 2516.100               | 503220        | 2497.02                           | 499404                          | 0                  | 30    | 6252                          | 500190    | 22                                     | 0                                      | 0 (0)                               | 0    |  |
|                                     |            |                 |                          |                   | Mid                         | 2590.500               | 518100        | 2534.7                            | 506940                          | 102                |       | 6438                          | 515070    | 22                                     | 0                                      | 0 (0)                               | 204  |  |
|                                     |            |                 |                          |                   | High                        | 2670.000               | 534000        | 2469.48                           | 493896                          | 504                |       | 6636                          | 530910    | 2                                      | 0                                      | 0 (0)                               | 1008 |  |
| E-UTRA: 5MHz + NR: 50MHz            | E-UTRA CC1 | 5               | 25                       | Downlink & Uplink | Low                         | 2548.800               | 40178         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     |            |                 |                          |                   | Mid                         | 2618.100               | 40871         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     |            |                 |                          |                   | High                        | 2637.300               | 41063         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     | NR CC1     | 50              | 133                      | Downlink & Uplink | Low                         | 2521.290               | 504258        | 2497.35                           | 499470                          | 0                  | 30    | 6252                          | 500190    | 0                                      | 0                                      | 0 (0)                               | 0    |  |
|                                     |            |                 |                          |                   | Mid                         | 2590.590               | 518118        | 2529.93                           | 505986                          | 102                |       | 6426                          | 514110    | 20                                     | 0                                      | 0 (0)                               | 204  |  |
|                                     |            |                 |                          |                   | High                        | 2664.810               | 532962        | 2459.43                           | 491886                          | 504                |       | 6612                          | 528990    | 8                                      | 0                                      | 1 (1)                               | 1010 |  |
| E-UTRA: 5MHz + NR: 60MHz            | E-UTRA CC1 | 5               | 25                       | Downlink & Uplink | Low                         | 2558.700               | 40277         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     |            |                 |                          |                   | Mid                         | 2622.900               | 40919         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |  |
|                                     | NR         | 60              | 162                      | Downlink          | Low                         | 2526.210               | 505242        | 2497.05                           | 499410                          | 0                  | 30    | 6252                          | 500190    | 20                                     | 0                                      | 0 (0)                               | 0    |  |

|                                    | CC1           |     |     | & Uplink                | Mid  | 2590.410 | 518082 | 2524.53 | 504906 | 102 |    | 6414 | 513150 | 12 | 0 | 2 (2) | 208  |  |
|------------------------------------|---------------|-----|-----|-------------------------|------|----------|--------|---------|--------|-----|----|------|--------|----|---|-------|------|--|
|                                    |               |     |     |                         | High | 2659.890 | 531978 | 2449.29 | 489858 | 504 |    | 6588 | 527070 | 20 | 0 | 2 (2) | 1012 |  |
| E-UTRA:<br>5MHz +<br>NR:<br>80MHz  | E-UTRA<br>CC1 | 5   | 25  | Downlink<br>&<br>Uplink | Low  | 2578.800 | 40478  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    |               |     |     |                         | Mid  | 2633.100 | 41021  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    |               |     |     |                         | High | 2607.300 | 40763  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    | NR<br>CC1     | 80  | 217 |                         | Low  | 2536.290 | 507258 | 2497.23 | 499446 | 0   | 30 | 6252 | 500190 | 8  | 0 | 0 (0) | 0    |  |
|                                    |               |     |     |                         | Mid  | 2590.590 | 518118 | 2514.81 | 502962 | 102 |    | 6390 | 511230 | 20 | 0 | 2 (2) | 208  |  |
|                                    |               |     |     |                         | High | 2649.810 | 529962 | 2429.31 | 485862 | 504 |    | 6537 | 522990 | 16 | 0 | 1 (1) | 1010 |  |
| E-UTRA:<br>5MHz +<br>NR:<br>90MHz  | E-UTRA<br>CC1 | 5   | 25  | Downlink<br>&<br>Uplink | Low  | 2588.700 | 40577  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    |               |     |     |                         | Mid  | 2637.900 | 41069  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    |               |     |     |                         | High | 2597.400 | 40664  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    | NR<br>CC1     | 90  | 245 |                         | Low  | 2541.210 | 508242 | 2497.11 | 499422 | 0   | 30 | 6252 | 500190 | 16 | 0 | 0 (0) | 0    |  |
|                                    |               |     |     |                         | Mid  | 2590.410 | 518082 | 2509.59 | 501918 | 102 |    | 6375 | 510030 | 16 | 0 | 0 (0) | 204  |  |
|                                    |               |     |     |                         | High | 2644.890 | 528978 | 2419.35 | 483870 | 504 |    | 6513 | 521070 | 16 | 0 | 2 (2) | 1012 |  |
| E-UTRA:<br>5MHz +<br>NR:<br>100MHz | E-UTRA<br>CC1 | 5   | 25  | Downlink<br>&<br>Uplink | Low  | 2598.600 | 40676  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    |               |     |     |                         | Mid  | 2643.000 | 41120  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    |               |     |     |                         | High | 2587.500 | 40565  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    | NR<br>CC1     | 100 | 273 |                         | Low  | 2546.100 | 509220 | 2496.96 | 499392 | 0   | 30 | 6252 | 500190 | 2  | 0 | 1 (1) | 2    |  |
|                                    |               |     |     |                         | Mid  | 2590.500 | 518100 | 2504.64 | 500928 | 102 |    | 6363 | 509070 | 2  | 0 | 1 (1) | 206  |  |
|                                    |               |     |     |                         | High | 2640.000 | 528000 | 2409.42 | 481884 | 504 |    | 6486 | 518910 | 6  | 0 | 0 (0) | 1008 |  |
| E-UTRA:<br>10MHz +<br>NR:<br>10MHz | E-UTRA<br>CC1 | 10  | 50  | Downlink<br>&<br>Uplink | Low  | 2511.000 | 39800  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    |               |     |     |                         | Mid  | 2598.000 | 40670  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    |               |     |     |                         | High | 2674.800 | 41438  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    | NR<br>CC1     | 10  | 24  |                         | Low  | 2501.010 | 500202 | 2496.69 | 499338 | 0   | 30 | 6252 | 500190 | 20 | 0 | 1 (1) | 2    |  |
|                                    |               |     |     |                         | Mid  | 2588.010 | 517602 | 2546.97 | 509394 | 102 |    | 6468 | 517470 | 4  | 0 | 0 (0) | 204  |  |
|                                    |               |     |     |                         | High | 2684.790 | 536958 | 2499.03 | 499806 | 504 |    | 6711 | 536910 | 8  | 0 | 1 (1) | 1010 |  |
| E-UTRA:<br>10MHz +<br>NR:<br>15MHz | E-UTRA<br>CC1 | 10  | 50  | Downlink<br>&<br>Uplink | Low  | 2516.100 | 39851  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    |               |     |     |                         | Mid  | 2600.400 | 40694  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    |               |     |     |                         | High | 2669.700 | 41387  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    | NR<br>CC1     | 15  | 38  |                         | Low  | 2503.590 | 500718 | 2496.75 | 499350 | 0   | 30 | 6252 | 500190 | 16 | 0 | 1 (1) | 2    |  |
|                                    |               |     |     |                         | Mid  | 2587.890 | 517578 | 2544.33 | 508866 | 102 |    | 6462 | 516990 | 20 | 0 | 0 (0) | 204  |  |
|                                    |               |     |     |                         | High | 2682.210 | 536442 | 2493.93 | 498786 | 504 |    | 6699 | 535950 | 4  | 0 | 2 (2) | 1012 |  |
| E-UTRA:<br>10MHz +<br>NR:<br>20MHz | E-UTRA<br>CC1 | 10  | 50  | Downlink<br>&<br>Uplink | Low  | 2521.200 | 39902  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    |               |     |     |                         | Mid  | 2603.100 | 40721  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    |               |     |     |                         | High | 2664.900 | 41339  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    | NR<br>CC1     | 20  | 51  |                         | Low  | 2506.200 | 501240 | 2497.02 | 499404 | 0   | 30 | 6252 | 500190 | 22 | 0 | 0 (0) | 0    |  |
|                                    |               |     |     |                         | Mid  | 2588.100 | 517620 | 2542.2  | 508440 | 102 |    | 6456 | 516510 | 2  | 0 | 0 (0) | 204  |  |
|                                    |               |     |     |                         | High | 2679.900 | 535980 | 2489.28 | 497856 | 504 |    | 6687 | 534990 | 18 | 0 | 1 (1) | 1010 |  |
| E-UTRA:<br>10MHz +<br>NR:<br>40MHz | E-UTRA<br>CC1 | 10  | 50  | Downlink<br>&<br>Uplink | Low  | 2541.000 | 40100  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    |               |     |     |                         | Mid  | 2613.000 | 40820  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |  |
|                                    | NR            | 40  | 106 | Downlink                | Low  | 2516.010 | 503202 | 2496.93 | 499386 | 0   | 30 | 6252 | 500190 | 4  | 0 | 1 (1) | 2    |  |

|                                     | CC1           |     |     | & Uplink                | Mid  | 2588.010 | 517602 | 2532.21 | 506442 | 102 |    | 6432 | 514590 | 4  | 0 | 1 (1) | 206  |
|-------------------------------------|---------------|-----|-----|-------------------------|------|----------|--------|---------|--------|-----|----|------|--------|----|---|-------|------|
|                                     |               |     |     |                         | High | 2669.790 | 533958 | 2469.27 | 493854 | 504 |    | 6636 | 530910 | 16 | 0 | 0 (0) | 1008 |
| E-UTRA:<br>10MHz +<br>NR:<br>50MHz  | E-UTRA<br>CC1 | 10  | 50  | Downlink<br>&<br>Uplink | Low  | 2551.200 | 40202  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2618.100 | 40871  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | High | 2634.900 | 41039  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR<br>CC1     | 50  | 133 | Downlink<br>&<br>Uplink | Low  | 2521.200 | 504240 | 2497.26 | 499452 | 0   | 30 | 6252 | 500190 | 6  | 0 | 0 (0) | 0    |
|                                     |               |     |     |                         | Mid  | 2588.100 | 517620 | 2527.44 | 505488 | 102 |    | 6420 | 513630 | 2  | 0 | 1 (1) | 206  |
|                                     |               |     |     |                         | High | 2664.900 | 532980 | 2459.52 | 491904 | 504 |    | 6612 | 528990 | 2  | 0 | 1 (1) | 1010 |
| E-UTRA:<br>10MHz +<br>NR:<br>60MHz  | E-UTRA<br>CC1 | 10  | 50  | Downlink<br>&<br>Uplink | Low  | 2561.100 | 40301  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2622.900 | 40919  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | High | 2624.700 | 40937  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR<br>CC1     | 60  | 162 | Downlink<br>&<br>Uplink | Low  | 2526.090 | 505218 | 2496.93 | 499386 | 0   | 30 | 6252 | 500190 | 4  | 0 | 1 (1) | 2    |
|                                     |               |     |     |                         | Mid  | 2587.890 | 517578 | 2522.01 | 504402 | 102 |    | 6408 | 512670 | 20 | 0 | 2 (2) | 208  |
|                                     |               |     |     |                         | High | 2659.710 | 531942 | 2449.11 | 489822 | 504 |    | 6585 | 526830 | 0  | 0 | 0 (0) | 1008 |
| E-UTRA:<br>10MHz +<br>NR:<br>80MHz  | E-UTRA<br>CC1 | 10  | 50  | Downlink<br>&<br>Uplink | Low  | 2581.200 | 40502  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2633.100 | 41021  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | High | 2604.900 | 40739  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR<br>CC1     | 80  | 217 | Downlink<br>&<br>Uplink | Low  | 2536.200 | 507240 | 2497.14 | 499428 | 0   | 30 | 6252 | 500190 | 14 | 0 | 0 (0) | 0    |
|                                     |               |     |     |                         | Mid  | 2588.100 | 517620 | 2512.32 | 502464 | 102 |    | 6384 | 510750 | 2  | 0 | 3 (3) | 210  |
|                                     |               |     |     |                         | High | 2649.900 | 529980 | 2429.4  | 485880 | 504 |    | 6537 | 522990 | 10 | 0 | 1 (1) | 1010 |
| E-UTRA:<br>10MHz +<br>NR:<br>90MHz  | E-UTRA<br>CC1 | 10  | 50  | Downlink<br>&<br>Uplink | Low  | 2591.100 | 40601  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2637.900 | 41069  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | High | 2594.700 | 40637  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR<br>CC1     | 90  | 245 | Downlink<br>&<br>Uplink | Low  | 2541.090 | 508218 | 2496.99 | 499398 | 0   | 30 | 6252 | 500190 | 0  | 0 | 1 (1) | 2    |
|                                     |               |     |     |                         | Mid  | 2587.890 | 517578 | 2507.07 | 501414 | 102 |    | 6369 | 509550 | 0  | 0 | 1 (1) | 206  |
|                                     |               |     |     |                         | High | 2644.710 | 528942 | 2419.17 | 483834 | 504 |    | 6513 | 521070 | 4  | 0 | 3 (3) | 1014 |
| E-UTRA:<br>10MHz +<br>NR:<br>100MHz | E-UTRA<br>CC1 | 10  | 50  | Downlink<br>&<br>Uplink | Low  | 2601.000 | 40700  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2643.000 | 41120  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | High | 2584.800 | 40538  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR<br>CC1     | 100 | 273 | Downlink<br>&<br>Uplink | Low  | 2546.010 | 509202 | 2496.87 | 499374 | 0   | 30 | 6252 | 500190 | 8  | 0 | 1 (1) | 2    |
|                                     |               |     |     |                         | Mid  | 2588.010 | 517602 | 2502.15 | 500430 | 102 |    | 6357 | 508590 | 8  | 0 | 1 (1) | 206  |
|                                     |               |     |     |                         | High | 2639.790 | 527958 | 2409.21 | 481842 | 504 |    | 6486 | 518910 | 20 | 0 | 0 (0) | 1008 |
| E-UTRA:<br>15MHz +<br>NR:<br>10MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink<br>&<br>Uplink | Low  | 2513.700 | 39827  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2598.000 | 40670  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | High | 2672.400 | 41414  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR<br>CC1     | 10  | 24  | Downlink<br>&<br>Uplink | Low  | 2501.190 | 500238 | 2496.87 | 499374 | 0   | 30 | 6252 | 500190 | 8  | 0 | 1 (1) | 2    |
|                                     |               |     |     |                         | Mid  | 2585.490 | 517098 | 2544.45 | 508890 | 102 |    | 6462 | 516990 | 12 | 0 | 0 (0) | 204  |
|                                     |               |     |     |                         | High | 2684.910 | 536982 | 2499.15 | 499830 | 504 |    | 6711 | 536910 | 0  | 0 | 1 (1) | 1010 |
| E-UTRA:<br>15MHz +<br>NR:<br>15MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink<br>&<br>Uplink | Low  | 2518.500 | 39875  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2600.400 | 40694  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR            | 15  | 38  | Downlink                | Low  | 2503.500 | 500700 | 2496.66 | 499332 | 0   | 30 | 6252 | 500190 | 22 | 0 | 1 (1) | 2    |

|                                     | CC1           |     |     | & Uplink                | Mid  | 2585.400 | 517080 | 2541.84 | 508368 | 102 |    | 6456 | 516510 | 2  | 0 | 1 (1) | 206  |
|-------------------------------------|---------------|-----|-----|-------------------------|------|----------|--------|---------|--------|-----|----|------|--------|----|---|-------|------|
|                                     |               |     |     |                         | High | 2682.300 | 536460 | 2494.02 | 498804 | 504 |    | 6699 | 535950 | 22 | 0 | 1 (1) | 1010 |
| E-UTRA:<br>15MHz +<br>NR:<br>20MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink<br>&<br>Uplink | Low  | 2523.600 | 39926  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2603.100 | 40721  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | High | 2662.500 | 41315  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR<br>CC1     | 20  | 51  | Downlink<br>&<br>Uplink | Low  | 2506.110 | 501222 | 2496.93 | 499386 | 0   | 30 | 6252 | 500190 | 4  | 0 | 1 (1) | 2    |
|                                     |               |     |     |                         | Mid  | 2585.610 | 517122 | 2539.71 | 507942 | 102 |    | 6450 | 516030 | 8  | 0 | 0 (0) | 204  |
|                                     |               |     |     |                         | High | 2679.990 | 535998 | 2489.37 | 497874 | 504 |    | 6687 | 534990 | 12 | 0 | 1 (1) | 1010 |
| E-UTRA:<br>15MHz +<br>NR:<br>40MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink<br>&<br>Uplink | Low  | 2543.700 | 40127  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2613.000 | 40820  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | High | 2642.400 | 41114  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR<br>CC1     | 40  | 106 | Downlink<br>&<br>Uplink | Low  | 2516.190 | 503238 | 2497.11 | 499422 | 0   | 30 | 6252 | 500190 | 16 | 0 | 0 (0) | 0    |
|                                     |               |     |     |                         | Mid  | 2585.490 | 517098 | 2529.69 | 505938 | 102 |    | 6426 | 514110 | 12 | 0 | 1 (1) | 206  |
|                                     |               |     |     |                         | High | 2669.910 | 533982 | 2469.39 | 493878 | 504 |    | 6636 | 530910 | 8  | 0 | 0 (0) | 1008 |
| E-UTRA:<br>15MHz +<br>NR:<br>50MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink<br>&<br>Uplink | Low  | 2553.600 | 40226  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2618.100 | 40871  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | High | 2632.500 | 41015  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR<br>CC1     | 50  | 133 | Downlink<br>&<br>Uplink | Low  | 2521.110 | 504222 | 2497.17 | 499434 | 0   | 30 | 6252 | 500190 | 12 | 0 | 0 (0) | 0    |
|                                     |               |     |     |                         | Mid  | 2585.610 | 517122 | 2524.95 | 504990 | 102 |    | 6414 | 513150 | 8  | 0 | 1 (1) | 206  |
|                                     |               |     |     |                         | High | 2664.990 | 532998 | 2459.61 | 491922 | 504 |    | 6612 | 528990 | 20 | 0 | 0 (0) | 1008 |
| E-UTRA:<br>15MHz +<br>NR:<br>60MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink<br>&<br>Uplink | Low  | 2563.500 | 40325  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2622.900 | 40919  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | High | 2622.300 | 40913  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR<br>CC1     | 60  | 162 | Downlink<br>&<br>Uplink | Low  | 2526.000 | 505200 | 2496.84 | 499368 | 0   | 30 | 6252 | 500190 | 10 | 0 | 1 (1) | 2    |
|                                     |               |     |     |                         | Mid  | 2585.400 | 517080 | 2519.52 | 503904 | 102 |    | 6402 | 512190 | 2  | 0 | 3 (3) | 210  |
|                                     |               |     |     |                         | High | 2659.800 | 531960 | 2449.2  | 489840 | 504 |    | 6588 | 527070 | 2  | 0 | 3 (3) | 1014 |
| E-UTRA:<br>15MHz +<br>NR:<br>80MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink<br>&<br>Uplink | Low  | 2583.600 | 40526  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2633.100 | 41021  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | High | 2602.500 | 40715  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR<br>CC1     | 80  | 217 | Downlink<br>&<br>Uplink | Low  | 2536.110 | 507222 | 2497.05 | 499410 | 0   | 30 | 6252 | 500190 | 20 | 0 | 0 (0) | 0    |
|                                     |               |     |     |                         | Mid  | 2585.610 | 517122 | 2509.83 | 501966 | 102 |    | 6375 | 510030 | 0  | 0 | 0 (0) | 204  |
|                                     |               |     |     |                         | High | 2649.990 | 529998 | 2429.49 | 485898 | 504 |    | 6537 | 522990 | 4  | 0 | 1 (1) | 1010 |
| E-UTRA:<br>15MHz +<br>NR:<br>90MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink<br>&<br>Uplink | Low  | 2593.500 | 40625  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2637.900 | 41069  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | High | 2592.300 | 40613  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR<br>CC1     | 90  | 245 | Downlink<br>&<br>Uplink | Low  | 2541.000 | 508200 | 2496.9  | 499380 | 0   | 30 | 6252 | 500190 | 6  | 0 | 1 (1) | 2    |
|                                     |               |     |     |                         | Mid  | 2585.400 | 517080 | 2504.58 | 500916 | 102 |    | 6363 | 509070 | 6  | 0 | 1 (1) | 206  |
|                                     |               |     |     |                         | High | 2644.800 | 528960 | 2419.26 | 483852 | 504 |    | 6513 | 521070 | 22 | 0 | 2 (2) | 1012 |
| E-UTRA:<br>15MHz +<br>NR:<br>100MHz | E-UTRA<br>CC1 | 15  | 75  | Downlink<br>&<br>Uplink | Low  | 2603.700 | 40727  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2643.000 | 41120  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR            | 100 | 273 | Downlink                | Low  | 2546.190 | 509238 | 2497.05 | 499410 | 0   | 30 | 6252 | 500190 | 20 | 0 | 0 (0) | 0    |

|                                    | CC1           |    |     | & Uplink                | Mid  | 2585.490 | 517098 | 2499.63 | 499926 | 102 |    | 6351 | 508110 | 16 | 0 | 1 (1) | 206  |
|------------------------------------|---------------|----|-----|-------------------------|------|----------|--------|---------|--------|-----|----|------|--------|----|---|-------|------|
|                                    |               |    |     |                         | High | 2639.910 | 527982 | 2409.33 | 481866 | 504 |    | 6486 | 518910 | 12 | 0 | 0 (0) | 1008 |
| E-UTRA:<br>20MHz +<br>NR:<br>10MHz | E-UTRA<br>CC1 | 20 | 100 | Downlink<br>&<br>Uplink | Low  | 2516.100 | 39851  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    |               |    |     |                         | Mid  | 2598.000 | 40670  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    |               |    |     |                         | High | 2670.000 | 41390  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    | NR<br>CC1     | 10 | 24  | Downlink<br>&<br>Uplink | Low  | 2501.100 | 500220 | 2496.78 | 499356 | 0   | 30 | 6252 | 500190 | 14 | 0 | 1 (1) | 2    |
|                                    |               |    |     |                         | Mid  | 2583.000 | 516600 | 2541.96 | 508392 | 102 |    | 6456 | 516510 | 18 | 0 | 0 (0) | 204  |
|                                    |               |    |     |                         | High | 2685.000 | 537000 | 2499.24 | 499848 | 504 |    | 6711 | 536910 | 18 | 0 | 0 (0) | 1008 |
| E-UTRA:<br>20MHz +<br>NR:<br>15MHz | E-UTRA<br>CC1 | 20 | 100 | Downlink<br>&<br>Uplink | Low  | 2521.200 | 39902  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    |               |    |     |                         | Mid  | 2600.400 | 40694  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    |               |    |     |                         | High | 2664.900 | 41339  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    | NR<br>CC1     | 15 | 38  | Downlink<br>&<br>Uplink | Low  | 2503.710 | 500742 | 2496.87 | 499374 | 0   | 30 | 6252 | 500190 | 8  | 0 | 1 (1) | 2    |
|                                    |               |    |     |                         | Mid  | 2582.910 | 516582 | 2539.35 | 507870 | 102 |    | 6450 | 516030 | 8  | 0 | 1 (1) | 206  |
|                                    |               |    |     |                         | High | 2682.390 | 536478 | 2494.11 | 498822 | 504 |    | 6699 | 535950 | 16 | 0 | 1 (1) | 1010 |
| E-UTRA:<br>20MHz +<br>NR:<br>20MHz | E-UTRA<br>CC1 | 20 | 100 | Downlink<br>&<br>Uplink | Low  | 2526.300 | 39953  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    |               |    |     |                         | Mid  | 2603.100 | 40721  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    |               |    |     |                         | High | 2659.800 | 41288  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    | NR<br>CC1     | 20 | 51  | Downlink<br>&<br>Uplink | Low  | 2506.290 | 501258 | 2497.11 | 499422 | 0   | 30 | 6252 | 500190 | 16 | 0 | 0 (0) | 0    |
|                                    |               |    |     |                         | Mid  | 2583.090 | 516618 | 2537.19 | 507438 | 102 |    | 6444 | 515550 | 16 | 0 | 0 (0) | 204  |
|                                    |               |    |     |                         | High | 2679.810 | 535962 | 2489.19 | 497838 | 504 |    | 6687 | 534990 | 0  | 0 | 2 (2) | 1012 |
| E-UTRA:<br>20MHz +<br>NR:<br>40MHz | E-UTRA<br>CC1 | 20 | 100 | Downlink<br>&<br>Uplink | Low  | 2546.100 | 40151  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    |               |    |     |                         | Mid  | 2613.000 | 40820  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    |               |    |     |                         | High | 2640.000 | 41090  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    | NR<br>CC1     | 40 | 106 | Downlink<br>&<br>Uplink | Low  | 2516.100 | 503220 | 2497.02 | 499404 | 0   | 30 | 6252 | 500190 | 22 | 0 | 0 (0) | 0    |
|                                    |               |    |     |                         | Mid  | 2583.000 | 516600 | 2527.2  | 505440 | 102 |    | 6420 | 513630 | 18 | 0 | 1 (1) | 206  |
|                                    |               |    |     |                         | High | 2670.000 | 534000 | 2469.48 | 493896 | 504 |    | 6636 | 530910 | 2  | 0 | 0 (0) | 1008 |
| E-UTRA:<br>20MHz +<br>NR:<br>50MHz | E-UTRA<br>CC1 | 20 | 100 | Downlink<br>&<br>Uplink | Low  | 2556.300 | 40253  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    |               |    |     |                         | Mid  | 2618.100 | 40871  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    |               |    |     |                         | High | 2629.800 | 40988  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    | NR<br>CC1     | 50 | 133 | Downlink<br>&<br>Uplink | Low  | 2521.290 | 504258 | 2497.35 | 499470 | 0   | 30 | 6252 | 500190 | 0  | 0 | 0 (0) | 0    |
|                                    |               |    |     |                         | Mid  | 2583.090 | 516618 | 2522.43 | 504486 | 102 |    | 6408 | 512670 | 16 | 0 | 1 (1) | 206  |
|                                    |               |    |     |                         | High | 2664.810 | 532962 | 2459.43 | 491886 | 504 |    | 6612 | 528990 | 8  | 0 | 1 (1) | 1010 |
| E-UTRA:<br>20MHz +<br>NR:<br>60MHz | E-UTRA<br>CC1 | 20 | 100 | Downlink<br>&<br>Uplink | Low  | 2566.200 | 40352  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    |               |    |     |                         | Mid  | 2622.900 | 40919  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    |               |    |     |                         | High | 2619.900 | 40889  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    | NR<br>CC1     | 60 | 162 | Downlink<br>&<br>Uplink | Low  | 2526.210 | 505242 | 2497.05 | 499410 | 0   | 30 | 6252 | 500190 | 20 | 0 | 0 (0) | 0    |
|                                    |               |    |     |                         | Mid  | 2582.910 | 516582 | 2517.03 | 503406 | 102 |    | 6393 | 511470 | 0  | 0 | 0 (0) | 204  |
|                                    |               |    |     |                         | High | 2659.890 | 531978 | 2449.29 | 489858 | 504 |    | 6588 | 527070 | 20 | 0 | 2 (2) | 1012 |
| E-UTRA:<br>20MHz +<br>NR:<br>80MHz | E-UTRA<br>CC1 | 20 | 100 | Downlink<br>&<br>Uplink | Low  | 2586.300 | 40553  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    |               |    |     |                         | Mid  | 2633.100 | 41021  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                    | NR            | 80 | 217 | Downlink                | Low  | 2536.290 | 507258 | 2497.23 | 499446 | 0   | 30 | 6252 | 500190 | 8  | 0 | 0 (0) | 0    |

|                                     | CC1           |     |     | & Uplink                | Mid  | 2583.090 | 516618 | 2507.31 | 501462 | 102 |    | 6369 | 509550 | 8  | 0 | 0 (0) | 204  |
|-------------------------------------|---------------|-----|-----|-------------------------|------|----------|--------|---------|--------|-----|----|------|--------|----|---|-------|------|
|                                     |               |     |     |                         | High | 2649.810 | 529962 | 2429.31 | 485862 | 504 |    | 6537 | 522990 | 16 | 0 | 1 (1) | 1010 |
| E-UTRA:<br>20MHz +<br>NR:<br>90MHz  | E-UTRA<br>CC1 | 20  | 100 | Downlink<br>&<br>Uplink | Low  | 2596.200 | 40652  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2637.900 | 41069  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | High | 2589.900 | 40589  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR<br>CC1     | 90  | 245 | Downlink<br>&<br>Uplink | Low  | 2541.210 | 508242 | 2497.11 | 499422 | 0   | 30 | 6252 | 500190 | 16 | 0 | 0 (0) | 0    |
|                                     |               |     |     |                         | Mid  | 2582.910 | 516582 | 2502.09 | 500418 | 102 |    | 6357 | 508590 | 12 | 0 | 1 (1) | 206  |
|                                     |               |     |     |                         | High | 2644.890 | 528978 | 2419.35 | 483870 | 504 |    | 6513 | 521070 | 16 |   | 2 (2) | 1012 |
| E-UTRA:<br>20MHz +<br>NR:<br>100MHz | E-UTRA<br>CC1 | 20  | 100 | Downlink<br>&<br>Uplink | Low  | 2606.100 | 40751  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | Mid  | 2643.000 | 41120  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     |               |     |     |                         | High | 2580.000 | 40490  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    |
|                                     | NR<br>CC1     | 100 | 273 | Downlink<br>&<br>Uplink | Low  | 2546.100 | 509220 | 2496.96 | 499392 | 0   | 30 | 6252 | 500190 | 2  | 0 | 1 (1) | 2    |
|                                     |               |     |     |                         | Mid  | 2583.000 | 516600 | 2497.14 | 499428 | 102 |    | 6345 | 507630 | 22 | 0 | 1 (1) | 206  |
|                                     |               |     |     |                         | High | 2640.000 | 528000 | 2409.42 | 481884 | 504 |    | 6486 | 518910 | 6  | 0 | 0 (0) | 1008 |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccchConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{OffsetCORESET-0-Carrier}$  in Annex C expressed in number of common RBs.

Table 4.3.1.4.2.41.1-2A: EN-DC combination DC\_(n)41AA, intra-band contiguous, SCS 30 kHz, 30 kHz NR raster, E-UTRA CC at the band edges

| EN-DC channel bandwidth combination | CC            | Bandwidth [MHz] | carrierB andwidt h [PRBs] | Range                   | Carrier centre [MHz]<br>Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs ] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | k <sub>SSB</sub> | Offset Carrier CORE SET#0 [RBs]<br>Note 3 | CORE SET#0 Index (Offset [RBs])<br>Note 1 | offsetTo PointA (SIB1) [PRBs]<br>Note 1 |      |
|-------------------------------------|---------------|-----------------|---------------------------|-------------------------|--------------------------------|------------------------|---------------|-----------------------------------|----------------------------------|--------------------|-------|-------------------------------|------------------|---|---|---|------|
| E-UTRA:<br>20MHz +<br>NR:<br>40MHz  | E-UTRA<br>CC1 | 20              | 100                       | Downlink<br>&<br>Uplink | Low                            | 2506.200               | 39752         | -                                 | -                                | -                  | -     | -                             | -                | -   | -   | -                                       |      |
|                                     |               |                 |                           |                         | Mid                            | 2613.000               | 40820         | -                                 | -                                | -                  | -     | -                             | -                | -   | -   | -                                       |      |
|                                     |               |                 |                           |                         | High                           | 2679.900               | 41489         | -                                 | -                                | -                  | -     | -                             | -                | -   | -   | -                                       |      |
|                                     | NR<br>CC1     | 40              | 106                       | Downlink<br>&<br>Uplink | Low                            | 2536.200               | 507240        | 2517.12                           | 503424                           | 0                  | 30    | 6303                          | 504270           | 18  | 0   | 1 (1)                                   | 2    |
|                                     |               |                 |                           |                         | Mid                            | 2583.000               | 516600        | 2527.2                            | 505440                           | 102                |       | 6420                          | 513630           | 18  | 0   | 1 (1)                                   | 206  |
|                                     |               |                 |                           |                         | High                           | 2649.900               | 529980        | 2449.38                           | 489876                           | 504                |       | 6588                          | 527070           | 14  | 0   | 2 (2)                                   | 1012 |
| E-UTRA:<br>20MHz +<br>NR:<br>60MHz  | E-UTRA<br>CC1 | 20              | 100                       | Downlink<br>&<br>Uplink | Low                            | 2506.200               | 39752         | -                                 | -                                | -                  | -     | -                             | -                | -   | -   | -                                       |      |
|                                     |               |                 |                           |                         | Mid                            | 2622.900               | 40919         | -                                 | -                                | -                  | -     | -                             | -                | -   | -   | -                                       |      |
|                                     |               |                 |                           |                         | High                           | 2679.900               | 41489         | -                                 | -                                | -                  | -     | -                             | -                | -   | -   | -                                       |      |
|                                     | NR<br>CC1     | 60              | 162                       | Downlink<br>&<br>Uplink | Low                            | 2546.190               | 509238        | 2517.03                           | 503406                           | 0                  | 30    | 6303                          | 504270           | 0   | 0   | 2 (2)                                   | 4    |
|                                     |               |                 |                           |                         | Mid                            | 2582.910               | 516582        | 2517.03                           | 503406                           | 102                |       | 6393                          | 511470           | 0   | 0   | 0 (0)                                   | 204  |
|                                     |               |                 |                           |                         | High                           | 2639.910               | 527982        | 2429.31                           | 485862                           | 504                |       | 6537                          | 522990           | 16  | 0   | 1 (1)                                   | 1010 |

|                                     |               |     |     |                         |      |          |        |         |        |     |    |      |        |    |   |       |      |   |
|-------------------------------------|---------------|-----|-----|-------------------------|------|----------|--------|---------|--------|-----|----|------|--------|----|---|-------|------|---|
| E-UTRA:<br>20MHz +<br>NR:<br>80MHz  | E-UTRA<br>CC1 | 20  | 100 | Downlink<br>&<br>Uplink | Low  | 2506.200 | 39752  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                     |               |     |     |                         | Mid  | 2633.100 | 41021  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                     |               |     |     |                         | High | 2679.900 | 41489  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                     | NR<br>CC1     | 80  | 217 | Downlink<br>&<br>Uplink | Low  | 2556.210 | 511242 | 2517.15 | 503430 | 0   | 30 | 6303 | 504270 | 16 | 0 | 1 (1) | 2    | - |
|                                     |               |     |     |                         | Mid  | 2583.090 | 516618 | 2507.31 | 501462 | 102 |    | 6369 | 509550 | 8  | 0 | 0 (0) | 204  | - |
|                                     |               |     |     |                         | High | 2629.890 | 525978 | 2409.39 | 481878 | 504 |    | 6486 | 518910 | 8  | 0 | 0 (0) | 1008 | - |
| E-UTRA:<br>20MHz +<br>NR:<br>100MHz | E-UTRA<br>CC1 | 20  | 100 | Downlink<br>&<br>Uplink | Low  | 2506.200 | 39752  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                     |               |     |     |                         | Mid  | 2643.000 | 41120  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                     |               |     |     |                         | High | 2679.900 | 41489  | -       | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                     | NR<br>CC1     | 100 | 273 | Downlink<br>&<br>Uplink | Low  | 2566.200 | 513240 | 2517.06 | 503412 | 0   | 30 | 6303 | 504270 | 22 | 0 | 1 (1) | 2    | - |
|                                     |               |     |     |                         | Mid  | 2583.000 | 516600 | 2497.14 | 499428 | 102 |    | 6345 | 507630 | 22 | 0 | 1 (1) | 206  | - |
|                                     |               |     |     |                         | High | 2619.900 | 523980 | 2389.32 | 477864 | 504 |    | 6438 | 515070 | 18 | 0 | 2 (2) | 1012 | - |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch. ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B.1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

**Table 4.3.1.4.2.41.1-3: EN-DC combination DC\_(n)41AA, intra-band contiguous, SCS 60 kHz, 15 kHz NR raster, NR CC at the band edges without CORESET#0**

| EN-DC<br>channel<br>bandwidth<br>combinati<br>on | CC            | Ban<br>dwi<br>dth<br>[MH<br>z] | carri<br>erB<br>andwidt<br>h<br>[PRBs] | Range                   | Carrier<br>centre<br>[MHz]<br>Note 1 | Carrier<br>centre<br>[ARFCN] | point A<br>[MHz] | absolu<br>te<br>Frequen<br>cyPoint<br>A<br>[ARFCN] | offset<br>ToCa<br>rrier<br>[Carri<br>er<br>PRBs<br>] | SS<br>block<br>SCS<br>[kHz] | GSCN | absolu<br>te<br>Frequen<br>cySSB<br>[ARFCN] |        |
|--|---------------|--------------------------------|--|-------------------------|--------------------------------------|------------------------------|------------------|--|--|-----------------------------|------|---|--------|
| E-UTRA:<br>5MHz +<br>NR:<br>10MHz                | E-UTRA<br>CC1 | 5                              | 25                                     | Downlink<br>&<br>Uplink | Low                                  | 2508.600                     | 39776            | -  | -  | -                           | -    | -   | -      |
|  |               |                                |  |                         | Mid                                  | 2598.000                     | 40670            | -  | -  | -                           | -    | -   | -      |
|  |               |                                |  |                         | High                                 | 2677.500                     | 41465            | -  | -  | -                           | -    | -   | -      |
|  | NR<br>CC1     | 10                             | 11                                     | Downlink<br>&<br>Uplink | Low                                  | 2501.100                     | 500220           | 2497.14  | 499428   | 0                           | 15   | -   | 499788 |
|  |               |                                |  |                         | Mid                                  | 2590.500                     | 518100           | 2513.1   | 502620   | 102                         |      | -   | 517668 |
|  |               |                                |  |                         | High                                 | 2685.000                     | 537000           | 2318.16  | 463632   | 504                         |      | -   | 536568 |
| E-UTRA:<br>5MHz +<br>NR:<br>15MHz                | E-UTRA<br>CC1 | 5                              | 25                                     | Downlink<br>&<br>Uplink | Low                                  | 2513.700                     | 39827            | -  | -  | -                           | -    | -   | -      |
|  |               |                                |  |                         | Mid                                  | 2600.400                     | 40694            | -  | -  | -                           | -    | -   | -      |
|  |               |                                |  |                         | High                                 | 2672.400                     | 41414            | -  | -  | -                           | -    | -   | -      |
|  | NR<br>CC1     | 15                             | 18                                     | Downlink<br>&<br>Uplink | Low                                  | 2503.695                     | 500739           | 2497.215   | 499443   | 0                           | 15   | -   | 499803 |
|  |               |                                |  |                         | Mid                                  | 2590.395                     | 518079           | 2510.475   | 502095   | 102                         |      | -   | 517143 |
|  |               |                                |  |                         | High                                 | 2682.405                     | 536481           | 2313.045   | 462609   | 504                         |      | -   | 535545 |
| E-UTRA:<br>5MHz +                                | E-UTRA<br>CC1 | 5                              | 25                                     | Downlink<br>&           | Low                                  | 2518.500                     | 39875            | -  | -  | -                           | -    | -   | -      |
|  |               |                                |  |                         | Mid                                  | 2603.100                     | 40721            | -  | -  | -                           | -    | -   | -      |

|                                    |               |     |     |                             |      |          |        |          |        |     |    |   |        |
|------------------------------------|---------------|-----|-----|-----------------------------|------|----------|--------|----------|--------|-----|----|---|--------|
| NR:<br>20MHz                       | NR<br>CC1     | 20  | 24  | Uplink<br>Downlink & Uplink | High | 2667.300 | 41363  | -        | -      | -   | -  | - | -      |
|                                    |               |     |     |                             | Low  | 2506.005 | 501201 | 2497.365 | 499473 | 0   | 15 | - | 499833 |
|                                    |               |     |     |                             | Mid  | 2590.605 | 518121 | 2508.525 | 501705 | 102 |    | - | 516753 |
|                                    |               |     |     |                             | High | 2679.795 | 535959 | 2308.275 | 461655 | 504 |    | - | 534591 |
| E-UTRA:<br>5MHz +<br>NR:<br>40MHz  | E-UTRA<br>CC1 | 5   | 25  | Downlink & Uplink           | Low  | 2538.600 | 40076  | -        | -      | -   | -  | - | -      |
|                                    |               |     |     |                             | Mid  | 2613.000 | 40820  | -        | -      | -   |    | - | -      |
|                                    |               |     |     |                             | High | 2647.500 | 41165  | -        | -      | -   |    | - | -      |
|                                    | NR<br>CC1     | 40  | 51  | Downlink & Uplink           | Low  | 2516.100 | 503220 | 2497.74  | 499548 | 0   | 15 | - | 499908 |
|                                    |               |     |     |                             | Mid  | 2590.500 | 518100 | 2498.7   | 499740 | 102 |    | - | 514788 |
|                                    |               |     |     |                             | High | 2670.000 | 534000 | 2288.76  | 457752 | 504 |    | - | 530688 |
| E-UTRA:<br>5MHz +<br>NR:<br>50MHz  | E-UTRA<br>CC1 | 5   | 25  | Downlink & Uplink           | Low  | 2548.500 | 40175  | -        | -      | -   | -  | - | -      |
|                                    |               |     |     |                             | Mid  | 2618.100 | 40871  | -        | -      | -   |    | - | -      |
|                                    |               |     |     |                             | High | 2637.300 | 41063  | -        | -      | -   |    | - | -      |
|                                    | NR<br>CC1     | 50  | 65  | Downlink & Uplink           | Low  | 2521.005 | 504201 | 2497.605 | 499521 | 0   | 15 | - | 499881 |
|                                    |               |     |     |                             | Mid  | 2590.605 | 518121 | 2493.765 | 498753 | 102 |    | - | 513801 |
|                                    |               |     |     |                             | High | 2664.795 | 532959 | 2278.515 | 455703 | 504 |    | - | 528639 |
| E-UTRA:<br>5MHz +<br>NR:<br>60MHz  | E-UTRA<br>CC1 | 5   | 25  | Downlink & Uplink           | Low  | 2558.700 | 40277  | -        | -      | -   | -  | - | -      |
|                                    |               |     |     |                             | Mid  | 2622.900 | 40919  | -        | -      | -   |    | - | -      |
|                                    |               |     |     |                             | High | 2627.400 | 40964  | -        | -      | -   |    | - | -      |
|                                    | NR<br>CC1     | 60  | 79  | Downlink & Uplink           | Low  | 2526.195 | 505239 | 2497.755 | 499551 | 0   | 15 | - | 499911 |
|                                    |               |     |     |                             | Mid  | 2590.395 | 518079 | 2488.515 | 497703 | 102 |    | - | 512751 |
|                                    |               |     |     |                             | High | 2659.905 | 531981 | 2268.585 | 453717 | 504 |    | - | 526653 |
| E-UTRA:<br>5MHz +<br>NR:<br>80MHz  | E-UTRA<br>CC1 | 5   | 25  | Downlink & Uplink           | Low  | 2578.500 | 40475  | -        | -      | -   | -  | - | -      |
|                                    |               |     |     |                             | Mid  | 2633.100 | 41021  | -        | -      | -   |    | - | -      |
|                                    |               |     |     |                             | High | 2607.300 | 40763  | -        | -      | -   |    | - | -      |
|                                    | NR<br>CC1     | 80  | 107 | Downlink & Uplink           | Low  | 2536.005 | 507201 | 2497.485 | 499497 | 0   | 15 | - | 499857 |
|                                    |               |     |     |                             | Mid  | 2590.605 | 518121 | 2478.645 | 495729 | 102 |    | - | 510777 |
|                                    |               |     |     |                             | High | 2649.795 | 529959 | 2248.395 | 449679 | 504 |    | - | 522615 |
| E-UTRA:<br>5MHz +<br>NR:<br>90MHz  | E-UTRA<br>CC1 | 5   | 25  | Downlink & Uplink           | Low  | 2588.700 | 40577  | -        | -      | -   | -  | - | -      |
|                                    |               |     |     |                             | Mid  | 2637.900 | 41069  | -        | -      | -   |    | - | -      |
|                                    |               |     |     |                             | High | 2597.400 | 40664  | -        | -      | -   |    | - | -      |
|                                    | NR<br>CC1     | 90  | 121 | Downlink & Uplink           | Low  | 2541.195 | 508239 | 2497.635 | 499527 | 0   | 15 | - | 499887 |
|                                    |               |     |     |                             | Mid  | 2590.395 | 518079 | 2473.395 | 494679 | 102 |    | - | 509727 |
|                                    |               |     |     |                             | High | 2644.905 | 528981 | 2238.465 | 447693 | 504 |    | - | 520629 |
| E-UTRA:<br>5MHz +<br>NR:<br>100MHz | E-UTRA<br>CC1 | 5   | 25  | Downlink & Uplink           | Low  | 2598.600 | 40676  | -        | -      | -   | -  | - | -      |
|                                    |               |     |     |                             | Mid  | 2643.000 | 41120  | -        | -      | -   |    | - | -      |
|                                    |               |     |     |                             | High | 2587.500 | 40565  | -        | -      | -   |    | - | -      |
|                                    | NR<br>CC1     | 100 | 135 | Downlink & Uplink           | Low  | 2546.100 | 509220 | 2497.5   | 499500 | 0   | 15 | - | 499860 |
|                                    |               |     |     |                             | Mid  | 2590.500 | 518100 | 2468.46  | 493692 | 102 |    | - | 508740 |
|                                    |               |     |     |                             | High | 2640.000 | 528000 | 2228.52  | 445704 | 504 |    | - | 518640 |
| E-UTRA:<br>10MHz +                 | E-UTRA<br>CC1 | 10  | 50  | Downlink &                  | Low  | 2511.300 | 39803  | -        | -      | -   | -  | - | -      |
|                                    |               |     |     |                             | Mid  | 2598.000 | 40670  | -        | -      | -   |    | - | -      |

|                                    |               |    |     |                             |      |          |        |          |        |     |    |   |        |
|------------------------------------|---------------|----|-----|-----------------------------|------|----------|--------|----------|--------|-----|----|---|--------|
| NR:<br>10MHz                       | NR<br>CC1     | 10 | 11  | Uplink<br>Downlink & Uplink | High | 2674.800 | 41438  | -        | -      | -   | -  | - | -      |
|                                    |               |    |     |                             | Low  | 2501.295 | 500259 | 2497.335 | 499467 | 0   | 15 | - | 499827 |
|                                    |               |    |     |                             | Mid  | 2587.995 | 517599 | 2510.595 | 502119 | 102 |    | - | 517167 |
|                                    |               |    |     |                             | High | 2684.805 | 536961 | 2317.965 | 463593 | 504 |    | - | 536529 |
| E-UTRA:<br>10MHz +<br>NR:<br>15MHz | E-UTRA<br>CC1 | 10 | 50  | Downlink & Uplink           | Low  | 2516.100 | 39851  | -        | -      | -   | -  | - | -      |
|                                    |               |    |     |                             | Mid  | 2600.400 | 40694  | -        | -      | -   |    | - | -      |
|                                    |               |    |     |                             | High | 2670.000 | 41390  | -        | -      | -   |    | - | -      |
|                                    | NR<br>CC1     | 15 | 18  | Downlink & Uplink           | Low  | 2503.605 | 500721 | 2497.125 | 499425 | 0   | 15 | - | 499785 |
|                                    |               |    |     |                             | Mid  | 2587.905 | 517581 | 2507.985 | 501597 | 102 |    | - | 516645 |
|                                    |               |    |     |                             | High | 2682.495 | 536499 | 2313.135 | 462627 | 504 |    | - | 535563 |
| E-UTRA:<br>10MHz +<br>NR:<br>20MHz | E-UTRA<br>CC1 | 10 | 50  | Downlink & Uplink           | Low  | 2521.200 | 39902  | -        | -      | -   | -  | - | -      |
|                                    |               |    |     |                             | Mid  | 2603.100 | 40721  | -        | -      | -   |    | - | -      |
|                                    |               |    |     |                             | High | 2664.900 | 41339  | -        | -      | -   |    | - | -      |
|                                    | NR<br>CC1     | 20 | 24  | Downlink & Uplink           | Low  | 2506.200 | 501240 | 2497.56  | 499512 | 0   | 15 | - | 499872 |
|                                    |               |    |     |                             | Mid  | 2588.100 | 517620 | 2506.02  | 501204 | 102 |    | - | 516252 |
|                                    |               |    |     |                             | High | 2679.900 | 535980 | 2308.38  | 461676 | 504 |    | - | 534612 |
| E-UTRA:<br>10MHz +<br>NR:<br>40MHz | E-UTRA<br>CC1 | 10 | 50  | Downlink & Uplink           | Low  | 2541.300 | 40103  | -        | -      | -   | -  | - | -      |
|                                    |               |    |     |                             | Mid  | 2613.000 | 40820  | -        | -      | -   |    | - | -      |
|                                    |               |    |     |                             | High | 2644.800 | 41138  | -        | -      | -   |    | - | -      |
|                                    | NR<br>CC1     | 40 | 51  | Downlink & Uplink           | Low  | 2516.295 | 503259 | 2497.935 | 499587 | 0   | 15 | - | 499947 |
|                                    |               |    |     |                             | Mid  | 2587.995 | 517599 | 2496.195 | 499239 | 102 |    | - | 514287 |
|                                    |               |    |     |                             | High | 2669.805 | 533961 | 2288.565 | 457713 | 504 |    | - | 530649 |
| E-UTRA:<br>10MHz +<br>NR:<br>50MHz | E-UTRA<br>CC1 | 10 | 50  | Downlink & Uplink           | Low  | 2551.200 | 40202  | -        | -      | -   | -  | - | -      |
|                                    |               |    |     |                             | Mid  | 2618.100 | 40871  | -        | -      | -   |    | - | -      |
|                                    |               |    |     |                             | High | 2634.900 | 41039  | -        | -      | -   |    | - | -      |
|                                    | NR<br>CC1     | 50 | 65  | Downlink & Uplink           | Low  | 2521.200 | 504240 | 2497.8   | 499560 | 0   | 15 | - | 499920 |
|                                    |               |    |     |                             | Mid  | 2588.100 | 517620 | 2491.26  | 498252 | 102 |    | - | 513300 |
|                                    |               |    |     |                             | High | 2664.900 | 532980 | 2278.62  | 455724 | 504 |    | - | 528660 |
| E-UTRA:<br>10MHz +<br>NR:<br>60MHz | E-UTRA<br>CC1 | 10 | 50  | Downlink & Uplink           | Low  | 2561.100 | 40301  | -        | -      | -   | -  | - | -      |
|                                    |               |    |     |                             | Mid  | 2622.900 | 40919  | -        | -      | -   |    | - | -      |
|                                    |               |    |     |                             | High | 2625.000 | 40940  | -        | -      | -   |    | - | -      |
|                                    | NR<br>CC1     | 60 | 79  | Downlink & Uplink           | Low  | 2526.105 | 505221 | 2497.665 | 499533 | 0   | 15 | - | 499893 |
|                                    |               |    |     |                             | Mid  | 2587.905 | 517581 | 2486.025 | 497205 | 102 |    | - | 512253 |
|                                    |               |    |     |                             | High | 2659.995 | 531999 | 2268.675 | 453735 | 504 |    | - | 526671 |
| E-UTRA:<br>10MHz +<br>NR:<br>80MHz | E-UTRA<br>CC1 | 10 | 50  | Downlink & Uplink           | Low  | 2581.200 | 40502  | -        | -      | -   | -  | - | -      |
|                                    |               |    |     |                             | Mid  | 2633.100 | 41021  | -        | -      | -   |    | - | -      |
|                                    |               |    |     |                             | High | 2604.900 | 40739  | -        | -      | -   |    | - | -      |
|                                    | NR<br>CC1     | 80 | 107 | Downlink & Uplink           | Low  | 2536.200 | 507240 | 2497.68  | 499536 | 0   | 15 | - | 499896 |
|                                    |               |    |     |                             | Mid  | 2588.100 | 517620 | 2476.14  | 495228 | 102 |    | - | 510276 |
|                                    |               |    |     |                             | High | 2649.900 | 529980 | 2248.5   | 449700 | 504 |    | - | 522636 |
| E-UTRA:<br>10MHz +                 | E-UTRA<br>CC1 | 10 | 50  | Downlink &                  | Low  | 2591.100 | 40601  | -        | -      | -   | -  | - | -      |
|                                    |               |    |     |                             | Mid  | 2637.900 | 41069  | -        | -      | -   |    | - | -      |

|                                     |               |     |     |                             |      |          |        |          |        |     |    |   |        |
|-------------------------------------|---------------|-----|-----|-----------------------------|------|----------|--------|----------|--------|-----|----|---|--------|
| NR:<br>90MHz                        | NR<br>CC1     | 90  | 121 | Uplink<br>Downlink & Uplink | High | 2595.000 | 40640  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                             | Low  | 2541.105 | 508221 | 2497.545 | 499509 | 0   | 15 | - | 499869 |
|                                     |               |     |     |                             | Mid  | 2587.905 | 517581 | 2470.905 | 494181 | 102 |    | - | 509229 |
|                                     |               |     |     |                             | High | 2644.995 | 528999 | 2238.555 | 447711 | 504 |    | - | 520647 |
| E-UTRA:<br>10MHz +<br>NR:<br>100MHz | E-UTRA<br>CC1 | 10  | 50  | Downlink & Uplink           | Low  | 2601.300 | 40703  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                             | Mid  | 2643.000 | 41120  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                             | High | 2584.800 | 40538  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 100 | 135 | Downlink & Uplink           | Low  | 2546.295 | 509259 | 2497.695 | 499539 | 0   | 15 | - | 499899 |
|                                     |               |     |     |                             | Mid  | 2587.995 | 517599 | 2465.955 | 493191 | 102 |    | - | 508239 |
|                                     |               |     |     |                             | High | 2639.805 | 527961 | 2228.325 | 445665 | 504 |    | - | 518601 |
| E-UTRA:<br>15MHz +<br>NR:<br>10MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink & Uplink           | Low  | 2513.700 | 39827  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                             | Mid  | 2598.000 | 40670  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                             | High | 2672.400 | 41414  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 10  | 11  | Downlink & Uplink           | Low  | 2501.205 | 500241 | 2497.245 | 499449 | 0   | 15 | - | 499809 |
|                                     |               |     |     |                             | Mid  | 2585.505 | 517101 | 2508.105 | 501621 | 102 |    | - | 516669 |
|                                     |               |     |     |                             | High | 2684.895 | 536979 | 2318.055 | 463611 | 504 |    | - | 536547 |
| E-UTRA:<br>15MHz +<br>NR:<br>15MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink & Uplink           | Low  | 2518.500 | 39875  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                             | Mid  | 2600.400 | 40694  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                             | High | 2667.300 | 41363  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 15  | 18  | Downlink & Uplink           | Low  | 2503.500 | 500700 | 2497.02  | 499404 | 0   | 15 | - | 499764 |
|                                     |               |     |     |                             | Mid  | 2585.400 | 517080 | 2505.48  | 501096 | 102 |    | - | 516144 |
|                                     |               |     |     |                             | High | 2682.300 | 536460 | 2312.94  | 462588 | 504 |    | - | 535524 |
| E-UTRA:<br>15MHz +<br>NR:<br>20MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink & Uplink           | Low  | 2523.600 | 39926  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                             | Mid  | 2603.100 | 40721  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                             | High | 2662.200 | 41312  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 20  | 24  | Downlink & Uplink           | Low  | 2506.095 | 501219 | 2497.455 | 499491 | 0   | 15 | - | 499851 |
|                                     |               |     |     |                             | Mid  | 2585.595 | 517119 | 2503.515 | 500703 | 102 |    | - | 515751 |
|                                     |               |     |     |                             | High | 2679.705 | 535941 | 2308.185 | 461637 | 504 |    | - | 534573 |
| E-UTRA:<br>15MHz +<br>NR:<br>40MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink & Uplink           | Low  | 2543.700 | 40127  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                             | Mid  | 2613.000 | 40820  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                             | High | 2642.400 | 41114  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 40  | 51  | Downlink & Uplink           | Low  | 2516.205 | 503241 | 2497.845 | 499569 | 0   | 15 | - | 499929 |
|                                     |               |     |     |                             | Mid  | 2585.505 | 517101 | 2493.705 | 498741 | 102 |    | - | 513789 |
|                                     |               |     |     |                             | High | 2669.895 | 533979 | 2288.655 | 457731 | 504 |    | - | 530667 |
| E-UTRA:<br>15MHz +<br>NR:<br>50MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink & Uplink           | Low  | 2553.600 | 40226  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                             | Mid  | 2618.100 | 40871  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                             | High | 2632.200 | 41012  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 50  | 65  | Downlink & Uplink           | Low  | 2521.095 | 504219 | 2497.695 | 499539 | 0   | 15 | - | 499899 |
|                                     |               |     |     |                             | Mid  | 2585.595 | 517119 | 2488.755 | 497751 | 102 |    | - | 512799 |
|                                     |               |     |     |                             | High | 2664.705 | 532941 | 2278.425 | 455685 | 504 |    | - | 528621 |
| E-UTRA:<br>15MHz +                  | E-UTRA<br>CC1 | 15  | 75  | Downlink &                  | Low  | 2563.500 | 40325  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                             | Mid  | 2622.900 | 40919  | -        | -      | -   |    | - | -      |

|                                     |               |     |     |                                   |      |          |        |          |        |     |    |   |        |
|-------------------------------------|---------------|-----|-----|-----------------------------------|------|----------|--------|----------|--------|-----|----|---|--------|
| NR:<br>60MHz                        | NR<br>CC1     | 60  | 79  | Uplink<br>Downlink<br>&<br>Uplink | High | 2622.300 | 40913  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                                   | Low  | 2526.000 | 505200 | 2497.56  | 499512 | 0   | 15 | - | 499872 |
|                                     |               |     |     |                                   | Mid  | 2585.400 | 517080 | 2483.52  | 496704 | 102 |    | - | 511752 |
|                                     |               |     |     |                                   | High | 2659.800 | 531960 | 2268.48  | 453696 | 504 |    | - | 526632 |
| E-UTRA:<br>15MHz +<br>NR:<br>80MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink<br>&<br>Uplink           | Low  | 2583.600 | 40526  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                                   | Mid  | 2633.100 | 41021  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                                   | High | 2602.200 | 40712  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 80  | 107 | Downlink<br>&<br>Uplink           | Low  | 2536.095 | 507219 | 2497.575 | 499515 | 0   | 15 | - | 499875 |
|                                     |               |     |     |                                   | Mid  | 2585.595 | 517119 | 2473.635 | 494727 | 102 |    | - | 509775 |
|                                     |               |     |     |                                   | High | 2649.705 | 529941 | 2248.305 | 449661 | 504 |    | - | 522597 |
| E-UTRA:<br>15MHz +<br>NR:<br>90MHz  | E-UTRA<br>CC1 | 15  | 75  | Downlink<br>&<br>Uplink           | Low  | 2593.500 | 40625  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                                   | Mid  | 2637.900 | 41069  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                                   | High | 2592.300 | 40613  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 90  | 121 | Downlink<br>&<br>Uplink           | Low  | 2541.000 | 508200 | 2497.44  | 499488 | 0   | 15 | - | 499848 |
|                                     |               |     |     |                                   | Mid  | 2585.400 | 517080 | 2468.4   | 493680 | 102 |    | - | 508728 |
|                                     |               |     |     |                                   | High | 2644.800 | 528960 | 2238.36  | 447672 | 504 |    | - | 520608 |
| E-UTRA:<br>15MHz +<br>NR:<br>100MHz | E-UTRA<br>CC1 | 15  | 75  | Downlink<br>&<br>Uplink           | Low  | 2603.700 | 40727  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                                   | Mid  | 2643.000 | 41120  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                                   | High | 2582.400 | 40514  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 100 | 135 | Downlink<br>&<br>Uplink           | Low  | 2546.205 | 509241 | 2497.605 | 499521 | 0   | 15 | - | 499881 |
|                                     |               |     |     |                                   | Mid  | 2585.505 | 517101 | 2463.465 | 492693 | 102 |    | - | 507741 |
|                                     |               |     |     |                                   | High | 2639.895 | 527979 | 2228.415 | 445683 | 504 |    | - | 518619 |
| E-UTRA:<br>20MHz +<br>NR:<br>10MHz  | E-UTRA<br>CC1 | 20  | 100 | Downlink<br>&<br>Uplink           | Low  | 2516.100 | 39851  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                                   | Mid  | 2598.000 | 40670  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                                   | High | 2670.000 | 41390  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 10  | 11  | Downlink<br>&<br>Uplink           | Low  | 2501.100 | 500220 | 2497.14  | 499428 | 0   | 15 | - | 499788 |
|                                     |               |     |     |                                   | Mid  | 2583.000 | 516600 | 2505.6   | 501120 | 102 |    | - | 516168 |
|                                     |               |     |     |                                   | High | 2685.000 | 537000 | 2318.16  | 463632 | 504 |    | - | 536568 |
| E-UTRA:<br>20MHz +<br>NR:<br>15MHz  | E-UTRA<br>CC1 | 20  | 100 | Downlink<br>&<br>Uplink           | Low  | 2521.200 | 39902  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                                   | Mid  | 2600.400 | 40694  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                                   | High | 2664.900 | 41339  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 15  | 18  | Downlink<br>&<br>Uplink           | Low  | 2503.695 | 500739 | 2497.215 | 499443 | 0   | 15 | - | 499803 |
|                                     |               |     |     |                                   | Mid  | 2582.895 | 516579 | 2502.975 | 500595 | 102 |    | - | 515643 |
|                                     |               |     |     |                                   | High | 2682.405 | 536481 | 2313.045 | 462609 | 504 |    | - | 535545 |
| E-UTRA:<br>20MHz +<br>NR:<br>20MHz  | E-UTRA<br>CC1 | 20  | 100 | Downlink<br>&<br>Uplink           | Low  | 2526.000 | 39950  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                                   | Mid  | 2603.100 | 40721  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                                   | High | 2659.800 | 41288  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 20  | 24  | Downlink<br>&<br>Uplink           | Low  | 2506.005 | 501201 | 2497.365 | 499473 | 0   | 15 | - | 499833 |
|                                     |               |     |     |                                   | Mid  | 2583.105 | 516621 | 2501.025 | 500205 | 102 |    | - | 515253 |
|                                     |               |     |     |                                   | High | 2679.795 | 535959 | 2308.275 | 461655 | 504 |    | - | 534591 |
| E-UTRA:<br>20MHz +                  | E-UTRA<br>CC1 | 20  | 100 | Downlink<br>&                     | Low  | 2546.100 | 40151  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                                   | Mid  | 2613.000 | 40820  | -        | -      | -   |    | - | -      |

|                                     |               |     |     |                                   |      |          |        |          |        |     |    |   |        |
|-------------------------------------|---------------|-----|-----|-----------------------------------|------|----------|--------|----------|--------|-----|----|---|--------|
| NR:<br>40MHz                        | NR<br>CC1     | 40  | 51  | Uplink<br>Downlink<br>&<br>Uplink | High | 2640.000 | 41090  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                                   | Low  | 2516.100 | 503220 | 2497.74  | 499548 | 0   | 15 | - | 499908 |
|                                     |               |     |     |                                   | Mid  | 2583.000 | 516600 | 2491.2   | 498240 | 102 |    | - | 513288 |
|                                     |               |     |     |                                   | High | 2670.000 | 534000 | 2288.76  | 457752 | 504 |    | - | 530688 |
| E-UTRA:<br>20MHz +<br>NR:<br>50MHz  | E-UTRA<br>CC1 | 20  | 100 | Downlink<br>&<br>Uplink           | Low  | 2556.000 | 40250  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                                   | Mid  | 2618.100 | 40871  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                                   | High | 2629.800 | 40988  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 50  | 65  | Downlink<br>&<br>Uplink           | Low  | 2521.005 | 504201 | 2497.605 | 499521 | 0   | 15 | - | 499881 |
|                                     |               |     |     |                                   | Mid  | 2583.105 | 516621 | 2486.265 | 497253 | 102 |    | - | 512301 |
|                                     |               |     |     |                                   | High | 2664.795 | 532959 | 2278.515 | 455703 | 504 |    | - | 528639 |
| E-UTRA:<br>20MHz +<br>NR:<br>60MHz  | E-UTRA<br>CC1 | 20  | 100 | Downlink<br>&<br>Uplink           | Low  | 2566.200 | 40352  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                                   | Mid  | 2622.900 | 40919  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                                   | High | 2619.900 | 40889  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 60  | 79  | Downlink<br>&<br>Uplink           | Low  | 2526.195 | 505239 | 2497.755 | 499551 | 0   | 15 | - | 499911 |
|                                     |               |     |     |                                   | Mid  | 2582.895 | 516579 | 2481.015 | 496203 | 102 |    | - | 511251 |
|                                     |               |     |     |                                   | High | 2659.905 | 531981 | 2268.585 | 453717 | 504 |    | - | 526653 |
| E-UTRA:<br>20MHz +<br>NR:<br>80MHz  | E-UTRA<br>CC1 | 20  | 100 | Downlink<br>&<br>Uplink           | Low  | 2586.000 | 40550  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                                   | Mid  | 2633.100 | 41021  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                                   | High | 2599.800 | 40688  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 80  | 107 | Downlink<br>&<br>Uplink           | Low  | 2536.005 | 507201 | 2497.485 | 499497 | 0   | 15 | - | 499857 |
|                                     |               |     |     |                                   | Mid  | 2583.105 | 516621 | 2471.145 | 494229 | 102 |    | - | 509277 |
|                                     |               |     |     |                                   | High | 2649.795 | 529959 | 2248.395 | 449679 | 504 |    | - | 522615 |
| E-UTRA:<br>20MHz +<br>NR:<br>90MHz  | E-UTRA<br>CC1 | 20  | 100 | Downlink<br>&<br>Uplink           | Low  | 2596.200 | 40652  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                                   | Mid  | 2637.900 | 41069  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                                   | High | 2589.900 | 40589  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 90  | 121 | Downlink<br>&<br>Uplink           | Low  | 2541.195 | 508239 | 2497.635 | 499527 | 0   | 15 | - | 499887 |
|                                     |               |     |     |                                   | Mid  | 2582.895 | 516579 | 2465.895 | 493179 | 102 |    | - | 508227 |
|                                     |               |     |     |                                   | High | 2644.905 | 528981 | 2238.465 | 447693 | 504 |    | - | 520629 |
| E-UTRA:<br>20MHz +<br>NR:<br>100MHz | E-UTRA<br>CC1 | 20  | 100 | Downlink<br>&<br>Uplink           | Low  | 2606.100 | 40751  | -        | -      | -   | -  | - | -      |
|                                     |               |     |     |                                   | Mid  | 2643.000 | 41120  | -        | -      | -   |    | - | -      |
|                                     |               |     |     |                                   | High | 2580.000 | 40490  | -        | -      | -   |    | - | -      |
|                                     | NR<br>CC1     | 100 | 135 | Downlink<br>&<br>Uplink           | Low  | 2546.100 | 509220 | 2497.5   | 499500 | 0   | 15 | - | 499860 |
|                                     |               |     |     |                                   | Mid  | 2583.000 | 516600 | 2460.96  | 492192 | 102 |    | - | 507240 |
|                                     |               |     |     |                                   | High | 2640.000 | 528000 | 2228.52  | 445704 | 504 |    | - | 518640 |

Note 1: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.

Note 2: FR1 carrier without CORESET#0 is indicated in the MIB by setting  $k_{SSB} = 31$ , controlResourceSetZero=0 and searchSpaceZero = 0 (TS 38.213 [22], clause 13).

**Table 4.3.1.4.2.41.1-3A: EN-DC combination DC\_(n)41AA, intra-band contiguous, SCS 60 kHz, 15 kHz NR raster, E-UTRA CC at the band edges without CORESET#0**

| EN-DC channel bandwidth combination  | CC            | Bandwidth [MHz] | carrierB bandwidth [PRBs] | Range             | Carrier centre [MHz]<br>Note 1 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs ] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] |
|--|---------------|-----------------|---------------------------|-------------------|--------------------------------|------------------------|---------------|-----------------------------------|----------------------------------|--------------------|------|-------------------------------|
| E-UTRA:<br>20MHz +<br>NR:<br>40MHz   | E-UTRA<br>CC1 | 20              | 100                       | Downlink & Uplink | Low                            | 2506.200               | 39752         | -                                 | -                                | -                  | -    | -                             |
|  |               |                 |                           |                   | Mid                            | 2613.000               | 40820         | -                                 | -                                | -                  | -    | -                             |
|  |               |                 |                           |                   | High                           | 2679.900               | 41489         | -                                 | -                                | -                  | -    | -                             |
|  | NR<br>CC1     | 40              | 51                        | Downlink & Uplink | Low                            | 2536.200               | 507240        | 2517.84                           | 503568                           | 0                  | 15   | - 503928                      |
|  |               |                 |                           |                   | Mid                            | 2583.000               | 516600        | 2491.2                            | 498240                           | 102                |      | - 513288                      |
|  |               |                 |                           |                   | High                           | 2649.900               | 529980        | 2268.66                           | 453732                           | 504                |      | - 526668                      |
| E-UTRA:<br>20MHz +<br>NR:<br>60MHz   | E-UTRA<br>CC1 | 20              | 100                       | Downlink & Uplink | Low                            | 2506.200               | 39752         | -                                 | -                                | -                  | -    | -                             |
|  |               |                 |                           |                   | Mid                            | 2622.900               | 40919         | -                                 | -                                | -                  | -    | -                             |
|  |               |                 |                           |                   | High                           | 2679.900               | 41489         | -                                 | -                                | -                  | -    | -                             |
|  | NR<br>CC1     | 60              | 79                        | Downlink & Uplink | Low                            | 2546.205               | 509241        | 2517.765                          | 503553                           | 0                  | 15   | - 503913                      |
|  |               |                 |                           |                   | Mid                            | 2582.895               | 516579        | 2481.015                          | 496203                           | 102                |      | - 511251                      |
|  |               |                 |                           |                   | High                           | 2639.895               | 527979        | 2248.575                          | 449715                           | 504                |      | - 522651                      |
| E-UTRA:<br>20MHz +<br>NR:<br>80MHz   | E-UTRA<br>CC1 | 20              | 100                       | Downlink & Uplink | Low                            | 2506.200               | 39752         | -                                 | -                                | -                  | -    | -                             |
|  |               |                 |                           |                   | Mid                            | 2633.100               | 41021         | -                                 | -                                | -                  | -    | -                             |
|  |               |                 |                           |                   | High                           | 2679.900               | 41489         | -                                 | -                                | -                  | -    | -                             |
|  | NR<br>CC1     | 80              | 107                       | Downlink & Uplink | Low                            | 2556.195               | 511239        | 2517.675                          | 503535                           | 0                  | 15   | - 503895                      |
|  |               |                 |                           |                   | Mid                            | 2583.105               | 516621        | 2471.145                          | 494229                           | 102                |      | - 509277                      |
|  |               |                 |                           |                   | High                           | 2629.905               | 525981        | 2228.505                          | 445701                           | 504                |      | - 518637                      |
| E-UTRA:<br>20MHz +<br>NR:<br>100MHz  | E-UTRA<br>CC1 | 20              | 100                       | Downlink & Uplink | Low                            | 2506.200               | 39752         | -                                 | -                                | -                  | -    | -                             |
|  |               |                 |                           |                   | Mid                            | 2643.000               | 41120         | -                                 | -                                | -                  | -    | -                             |
|  |               |                 |                           |                   | High                           | 2679.900               | 41489         | -                                 | -                                | -                  | -    | -                             |
|  | NR<br>CC1     | 100             | 135                       | Downlink & Uplink | Low                            | 2566.200               | 513240        | 2517.6                            | 503520                           | 0                  | 15   | - 503880                      |
|  |               |                 |                           |                   | Mid                            | 2583.000               | 516600        | 2460.96                           | 492192                           | 102                |      | - 507240                      |
| Note 1: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.<br>Note 2: FR1 carrier without CORESET#0 is indicated in the MIB by setting $k_{SSB} = 31$ , $controlResourceSetZero = 0$ and $searchSpaceZero = 0$ (TS 38.213 [22], clause 13). |               |                 |                           |                   |                                |                        |               |                                   |                                  |                    |      |                               |

## 4.3.1.4.2.42.to 4.3.1.4.2.70 FFS

4.3.1.4.2.71 Intra-band contiguous EN-DC configurations DC\_(n)71

4.3.1.4.2.71.1 DC\_(n)71AA

**Table 4.3.1.4.2.71.1-1: EN-DC combination DC\_(n)71AA, intra-band contiguous, SCS 15 kHz, 100 kHz NR raster, NR CC at the band edges**

| EN-DC channel bandwidth combination | CC         | Bandwidth [MHz] | carrierBandwidth [PRBs] | Range    | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |         |
|-------------------------------------|------------|-----------------|-------------------------|----------|-----------------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|-----------|--|--|-------------------------------------|---------|
| E-UTRA: 5MHz + NR: 5MHz             | E-UTRA CC1 | 5               | 25                      | Downlink | Low                         | 624.500                | 68661         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         |          | Mid                         | 637.000                | 68786         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         |          | High                        | 644.500                | 68861         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         | Uplink   | Low                         | 670.500                | 133197        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         |          | Mid                         | 683.000                | 133322        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         |          | High                        | 690.500                | 133397        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     | NR CC1     | 5               | 25                      | Downlink | Low                         | 619.500                | 123900        | 617.25                            | 123450                          | 0                  | 15    | 1548                          | 123870    | 8                                      | 1                                      | 0 (0)                               | 1       |
|                                     |            |                 |                         |          | Mid                         | 632.000                | 126400        | 611.39                            | 122278                          | 102                |       | 1580                          | 126490    | 0                                      | 1                                      | 2 (4)                               | 107     |
|                                     |            |                 |                         |          | High                        | 649.500                | 129900        | 556.53                            | 111306                          | 504                |       | 1623                          | 129870    | 8                                      | 1                                      | 0 (0)                               | 505     |
|                                     |            |                 |                         | Uplink   | Low                         | 665.500                | 133100        | 663.25                            | 132650                          | 0                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         |          | Mid                         | 678.000                | 135600        | 585.03                            | 117006                          | 504                |       | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         |          | High                        | 695.500                | 139100        | 692.17                            | 138434                          | 6                  |       | -                             | -         | -                                      | -                                      | -                                   |         |
| E-UTRA: 5MHz + NR: 10MHz            | E-UTRA CC1 | 5               | 25                      | Downlink | Low                         | 629.500                | 68711         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         |          | Mid                         | 639.500                | 68811         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         |          | High                        | 639.500                | 68811         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         | Uplink   | Low                         | 675.500                | 133247        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         |          | Mid                         | 685.500                | 133347        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         |          | High                        | 685.500                | 133347        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     | NR CC1     | 10              | 52                      | Downlink | Low                         | 622.000                | 124400        | 617.32                            | 123464                          | 0                  | 15    | 1549                          | 123890    | 10                                     | 1                                      | 0 (0)                               | 1       |
|                                     |            |                 |                         |          | Mid                         | 632.000                | 126400        | 608.96                            | 121792                          | 102                |       | 1574                          | 126010    | 2                                      | 1                                      | 2 (4)                               | 107     |
|                                     |            |                 |                         |          | High                        | 647.000                | 129400        | 551.6                             | 110320                          | 504                |       | 1610                          | 128890    | 10                                     | 1                                      | 0 (0)                               | 505 (0) |
|                                     |            |                 |                         | Uplink   | Low                         | 668.000                | 133600        | 663.32                            | 132664                          | 0                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         |          | Mid                         | 678.000                | 135600        | 582.6                             | 116520                          | 504                |       | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         |          | High                        | 693.000                | 138600        | 687.24                            | 137448                          | 6                  |       | -                             | -         | -                                      | -                                      | -                                   |         |
| E-UTRA: 5MHz + NR:                  | E-UTRA CC1 | 5               | 25                      | Downlink | Low                         | 634.500                | 68761         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         |          | Mid                         | 642.000                | 68836         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |
|                                     |            |                 |                         |          | High                        | 634.500                | 68761         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |         |

|                                    |               |    |          |          |         |         |        |        |        |     |      |        |        |    |       |         |       |
|------------------------------------|---------------|----|----------|----------|---------|---------|--------|--------|--------|-----|------|--------|--------|----|-------|---------|-------|
| 15MHz                              |               |    | Uplink   | Low      | 680.500 | 133297  | -      | -      | -      | -   | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          | Mid      | 688.000 | 133372  | -      | -      | -      | -   | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          | High     | 680.500 | 133297  | -      | -      | -      | -   | -    | -      | -      | -  | -     | -       |       |
|                                    | NR<br>CC1     | 15 | Downlink | Low      | 624.500 | 124900  | 617.39 | 123478 | 0      | 15  | 1547 | 123850 | 4      | 0  | 0     | 0       | 0     |
|                                    |               |    |          | Mid      | 632.000 | 126400  | 606.53 | 121306 | 102    |     | 1568 | 125530 | 4      | 1  | 2 (4) | 107     |       |
|                                    |               |    |          | High     | 644.500 | 128900  | 546.67 | 109334 | 504    |     | 1600 | 127970 | 8      | 1  | 1 (2) | 507 (0) |       |
|                                    |               |    | Uplink   | Low      | 670.500 | 134100  | 663.39 | 132678 | 0      |     | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          | Mid      | 678.000 | 135600  | 580.17 | 116034 | 504    |     | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          | High     | 690.500 | 138100  | 682.31 | 136462 | 6      |     | -    | -      | -      | -  | -     | -       |       |
| E-UTRA:<br>5MHz +<br>NR:<br>20MHz  | E-UTRA<br>CC1 | 5  | 25       | Downlink | Low     | 639.500 | 68811  | -      | -      | -   | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          |          | Mid     | 644.500 | 68861  | -      | -      | -   | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          |          | High    | 629.500 | 68711  | -      | -      | -   | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    | Uplink   | Low      | 685.500 | 133347  | -      | -      | -      |     | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          | Mid      | 690.500 | 133397  | -      | -      | -      |     | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          | High     | 675.500 | 133247  | -      | -      | -      |     | -    | -      | -      | -  | -     | -       |       |
|                                    | NR<br>CC1     | 20 | 106      | Downlink | Low     | 627.000 | 125400 | 617.46 | 123492 | 0   | 15   | 1548   | 123870 | 6  | 0     | 0       | 0     |
|                                    |               |    |          |          | Mid     | 632.000 | 126400 | 604.1  | 120820 | 102 |      | 1562   | 125050 | 6  | 1     | 2 (4)   | 107   |
|                                    |               |    |          |          | High    | 642.000 | 128400 | 541.74 | 108348 | 504 |      | 1587   | 126990 | 10 | 1     | 1 (2)   | 507   |
|                                    |               |    | Uplink   | Low      | 673.000 | 134600  | 663.46 | 132692 | 0      |     | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          | Mid      | 678.000 | 135600  | 577.74 | 115548 | 504    |     | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          | High     | 688.000 | 137600  | 677.38 | 135476 | 6      |     | -    | -      | -      | -  | -     | -       |       |
| E-UTRA:<br>10MHz +<br>NR: 5MHz     | E-UTRA<br>CC1 | 10 | 50       | Downlink | Low     | 627.000 | 68686  | -      | -      | -   | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          |          | Mid     | 637.000 | 68786  | -      | -      | -   | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          |          | High    | 642.000 | 68836  | -      | -      | -   | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    | Uplink   | Low      | 673.000 | 133222  | -      | -      | -      |     | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          | Mid      | 683.000 | 133322  | -      | -      | -      |     | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          | High     | 688.000 | 133372  | -      | -      | -      |     | -    | -      | -      | -  | -     | -       |       |
|                                    | NR<br>CC1     | 5  | 25       | Downlink | Low     | 619.500 | 123900 | 617.25 | 123450 | 0   | 15   | 1548   | 123870 | 8  | 1     | 0 (0)   | 1 (0) |
|                                    |               |    |          |          | Mid     | 629.500 | 125900 | 608.89 | 121778 | 102 |      | 1573   | 125810 | 0  | 0     | 0       | 102   |
|                                    |               |    |          |          | High    | 649.500 | 129900 | 556.53 | 111306 | 504 |      | 1623   | 129870 | 8  | 1     | 0 (0)   | 505   |
|                                    |               |    | Uplink   | Low      | 665.500 | 133100  | 663.25 | 132650 | 0      |     | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          | Mid      | 675.500 | 135100  | 582.53 | 116506 | 504    |     | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          | High     | 695.500 | 139100  | 692.17 | 138434 | 6      |     | -    | -      | -      | -  | -     | -       |       |
| E-UTRA:<br>10MHz +<br>NR:<br>10MHz | E-UTRA<br>CC1 | 10 | 50       | Downlink | Low     | 632.000 | 68736  | -      | -      | -   | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          |          | Mid     | 639.500 | 68811  | -      | -      | -   | -    | -      | -      | -  | -     | -       |       |
|                                    |               |    |          |          | High    | 637.000 | 68786  | -      | -      | -   | -    | -      | -      | -  | -     | -       |       |
|                                    | NR<br>CC1     | 10 | 50       | Uplink   | Low     | 678.000 | 133272 | -      | -      | -   |      | -      | -      | -  | -     | -       | -     |
|                                    |               |    |          |          | Mid     | 685.500 | 133347 | -      | -      | -   |      | -      | -      | -  | -     | -       | -     |
|                                    |               |    | Downlink | High     | 683.000 | 133322  | -      | -      | -      | -   | -    | -      | -      | -  | -     |         |       |
|                                    |               |    |          | Low      | 622.000 | 124400  | 617.32 | 123464 | 0      | 15  | 1549 | 123890 | 10     | 1  | 0 (0) | 1 (0)   |       |
|                                    |               |    |          | Mid      | 629.500 | 125900  | 606.46 | 121292 | 102    |     | 1567 | 125330 | 2      | 0  | 0     | 102     |       |
|                                    |               |    |          | High     | 647.000 | 129400  | 551.6  | 110320 | 504    |     | 1610 | 128890 | 10     | 1  | 0 (0) | 505     |       |

|  |  |  |  |                                    |           |          |         |         |        |        |        |     |    |      |        |    |   |       |     |
|--|--|--|--|------------------------------------|-----------|----------|---------|---------|--------|--------|--------|-----|----|------|--------|----|---|-------|-----|
|  |  |  |  | Uplink                             | Low       | 668.000  | 133600  | 663.32  | 132664 | 0      | -      | -   | -  | -    | -      | -  | - | -     |     |
|  |  |  |  | Uplink                             | Mid       | 675.500  | 135100  | 580.1   | 116020 | 504    | -      | -   | -  | -    | -      | -  | - | -     |     |
|  |  |  |  | Uplink                             | High      | 693.000  | 138600  | 687.24  | 137448 | 6      | -      | -   | -  | -    | -      | -  | - | -     |     |
|  |  |  |  | E-UTRA:<br>10MHz +<br>NR:<br>15MHz | Downlink  | Low      | 637.000 | 68786   | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Downlink  | Mid      | 642.000 | 68836   | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Downlink  | High     | 632.000 | 68736   | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Uplink    | Low      | 683.000 | 133322  | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Uplink    | Mid      | 688.000 | 133372  | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Uplink    | High     | 678.000 | 133272  | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | NR<br>CC1 | Downlink | Low     | 624.500 | 124900 | 617.39 | 123478 | 0   | 15 | 1547 | 123850 | 4  | 0 | 0 (0) | 0   |
|  |  |  |  |                                    |           | Downlink | Mid     | 629.500 | 125900 | 604.03 | 120806 | 102 |    | 1561 | 124850 | 4  | 0 | 0 (0) | 102 |
|  |  |  |  |                                    |           | Downlink | High    | 644.500 | 128900 | 546.67 | 109334 | 504 |    | 1600 | 127970 | 8  | 1 | 1 (1) | 507 |
|  |  |  |  |                                    |           | Uplink   | Low     | 670.500 | 134100 | 663.39 | 132678 | 0   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    |           | Uplink   | Mid     | 675.500 | 135100 | 577.67 | 115534 | 504 |    | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    |           | Uplink   | High    | 690.500 | 138100 | 682.31 | 136462 | 6   |    | -    | -      | -  | - | -     | -   |
|  |  |  |  | E-UTRA:<br>15MHz +<br>NR: 5MHz     | Downlink  | Low      | 629.500 | 68711   | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Downlink  | Mid      | 637.000 | 68786   | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Downlink  | High     | 639.500 | 68811   | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Uplink    | Low      | 675.500 | 133247  | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Uplink    | Mid      | 683.000 | 133322  | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Uplink    | High     | 685.500 | 133347  | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | NR<br>CC1 | Downlink | Low     | 619.500 | 123900 | 617.25 | 123450 | 0   | 15 | 1548 | 123870 | 8  | 1 | 0 (0) | 1   |
|  |  |  |  |                                    |           | Downlink | Mid     | 627.000 | 125400 | 606.39 | 121278 | 102 |    | 1566 | 125310 | 0  | 0 | 0 (0) | 102 |
|  |  |  |  |                                    |           | Downlink | High    | 649.500 | 129900 | 556.53 | 111306 | 504 |    | 1623 | 129870 | 8  | 1 | 0 (0) | 505 |
|  |  |  |  |                                    |           | Uplink   | Low     | 665.500 | 133100 | 663.25 | 132650 | 0   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    |           | Uplink   | Mid     | 673.000 | 134600 | 580.03 | 116006 | 504 |    | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    |           | Uplink   | High    | 695.500 | 139100 | 692.17 | 138434 | 6   |    | -    | -      | -  | - | -     | -   |
|  |  |  |  | E-UTRA:<br>15MHz +<br>NR:<br>10MHz | Downlink  | Low      | 634.500 | 68761   | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Downlink  | Mid      | 639.500 | 68811   | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Downlink  | High     | 634.500 | 68761   | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Uplink    | Low      | 680.500 | 133297  | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Uplink    | Mid      | 685.500 | 133347  | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | Uplink    | High     | 680.500 | 133297  | -      | -      | -      | -   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    | NR<br>CC1 | Downlink | Low     | 622.000 | 124400 | 617.32 | 123464 | 0   | 15 | 1549 | 123890 | 10 | 1 | 0 (0) | 1   |
|  |  |  |  |                                    |           | Downlink | Mid     | 627.000 | 125400 | 603.96 | 120792 | 102 |    | 1560 | 124830 | 2  | 0 | 0 (0) | 102 |
|  |  |  |  |                                    |           | Downlink | High    | 647.000 | 129400 | 551.6  | 110320 | 504 |    | 1610 | 128890 | 10 | 1 | 0 (0) | 505 |
|  |  |  |  |                                    |           | Uplink   | Low     | 668.000 | 133600 | 663.32 | 132664 | 0   | -  | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    |           | Uplink   | Mid     | 673.000 | 134600 | 577.6  | 115520 | 504 |    | -    | -      | -  | - | -     | -   |
|  |  |  |  |                                    |           | Uplink   | High    | 693.000 | 138600 | 687.24 | 137448 | 6   |    | -    | -      | -  | - | -     | -   |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdch. ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.4.2.71.1-1A: EN-DC combination DC\_(n)71AA, intra-band contiguous, SCS 15 kHz, 100 kHz NR raster, E-UTRA CC at the band edges

| EN-DC channel bandwidth combination | CC         | Bandwidth [MHz] | carrier bandwidth [PRBs] | Range    | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE SET#0 Index (Offset [RBs]) Note 1 | CORE SET#0 PointA (SIB1) [PRBs] Note 1 | offsetToPointA |
|-------------------------------------|------------|-----------------|--------------------------|----------|-----------------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|-----------|--|--|--|----------------|
| E-UTRA: 5MHz + NR: 5MHz             | E-UTRA CC1 | 5               | 25                       | Downlink | Low                         | 619.500                | 68611         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | Mid                         | 637.000                | 68786         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | High                        | 649.500                | 68911         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          | Uplink   | Low                         | 665.500                | 133147        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | Mid                         | 683.000                | 133322        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | High                        | 695.500                | 133447        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     | NR CC1     | 5               | 25                       | Downlink | Low                         | 624.500                | 124900        | 622.25                            | 124450                          | 0                  | 15    | 1559                          | 124810    | 0                                      | 0                                      | 0 (0)                                  | 0              |
|                                     |            |                 |                          |          | Mid                         | 632.000                | 126400        | 611.39                            | 122278                          | 102                |       | 1580                          | 126490    | 0                                      | 1                                      | 2 (4)                                  | 112            |
|                                     |            |                 |                          |          | High                        | 644.500                | 128900        | 551.53                            | 110306                          | 504                |       | 1612                          | 128930    | 4                                      | 1                                      | 1 (2)                                  | 507            |
|                                     |            |                 |                          | Uplink   | Low                         | 670.500                | 134100        | 668.25                            | 133650                          | 0                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | Mid                         | 678.000                | 135600        | 585.03                            | 117006                          | 504                |       | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | High                        | 690.500                | 138100        | 687.17                            | 137434                          | 6                  |       | -                             | -         | -                                      | -                                      | -                                      | -              |
| E-UTRA: 5MHz + NR: 15MHz            | E-UTRA CC1 | 5               | 25                       | Downlink | Low                         | 619.500                | 68611         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | Mid                         | 642.000                | 68836         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | High                        | 649.500                | 68911         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          | Uplink   | Low                         | 665.500                | 133147        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | Mid                         | 688.000                | 133372        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | High                        | 695.500                | 133447        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     | NR CC1     | 15              | 79                       | Downlink | Low                         | 629.500                | 125900        | 622.39                            | 124478                          | 0                  | 15    | 1561                          | 124850    | 4                                      | 0                                      | 0 (0)                                  | 0              |
|                                     |            |                 |                          |          | Mid                         | 632.000                | 126400        | 606.53                            | 121306                          | 102                |       | 1568                          | 125530    | 4                                      | 1                                      | 2 (4)                                  | 107            |
|                                     |            |                 |                          |          | High                        | 639.500                | 127900        | 541.67                            | 108334                          | 504                |       | 1586                          | 126970    | 8                                      | 1                                      | 1 (2)                                  | 507            |
|                                     |            |                 |                          | Uplink   | Low                         | 675.500                | 135100        | 668.39                            | 133678                          | 0                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | Mid                         | 678.000                | 135600        | 580.17                            | 116034                          | 504                |       | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | High                        | 685.500                | 137100        | 677.31                            | 135462                          | 6                  |       | -                             | -         | -                                      | -                                      | -                                      | -              |
| E-UTRA: 10MHz + NR: 10MHz           | E-UTRA CC1 | 10              | 50                       | Downlink | Low                         | 622.000                | 68636         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | Mid                         | 639.500                | 68811         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          | Uplink   | High                        | 647.000                | 68886         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | Low                         | 668.000                | 133172        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     | NR CC1     | 10              | 52                       | Downlink | Mid                         | 685.500                | 133347        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          |          | High                        | 693.000                | 133422        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |
|                                     |            |                 |                          | Uplink   | Low                         | 632.000                | 126400        | 627.32                            | 125464                          | 0                  | 15    | 1574                          | 126010    | 2                                      | 1                                      | 2 (4)                                  | 5              |
|                                     |            |                 |                          |          | Mid                         | 629.500                | 125900        | 606.46                            | 121292                          | 102                |       | 1567                          | 125330    | 2                                      | 0                                      | 0 (0)                                  | 102            |
|                                     |            |                 |                          |          | High                        | 637.000                | 127400        | 541.6                             | 108320                          | 504                |       | 1588                          | 127010    | 2                                      | 1                                      | 2 (4)                                  | 509            |
|                                     |            |                 |                          |          | Low                         | 678.000                | 135600        | 673.32                            | 134664                          | 0                  |       | -                             | -         | -                                      | -                                      | -                                      | -              |

|                                |               |    |    |          | Mid  | 675.500 | 135100 | 580.1  | 116020 | 504 |    | -    | -      | - | - | -     | -   | - |  |  |
|--------------------------------|---------------|----|----|----------|------|---------|--------|--------|--------|-----|----|------|--------|---|---|-------|-----|---|--|--|
|                                |               |    |    |          | High | 683.000 | 136600 | 677.24 | 135448 | 6   |    | -    | -      | - | - | -     | -   | - |  |  |
| E-UTRA:<br>15MHz +<br>NR: 5MHz | E-UTRA<br>CC1 | 15 | 75 | Downlink | Low  | 624.500 | 68661  | -      | -      | -   | -  | -    | -      | - | - | -     | -   | - |  |  |
|                                |               |    |    |          | Mid  | 637.000 | 68786  | -      | -      | -   | -  | -    | -      | - | - | -     | -   | - |  |  |
|                                |               |    |    |          | High | 644.500 | 68861  | -      | -      | -   | -  | -    | -      | - | - | -     | -   | - |  |  |
|                                | NR<br>CC1     | 5  | 25 | Uplink   | Low  | 670.500 | 133197 | -      | -      | -   | -  | -    | -      | - | - | -     | -   | - |  |  |
|                                |               |    |    |          | Mid  | 683.000 | 133322 | -      | -      | -   | -  | -    | -      | - | - | -     | -   | - |  |  |
|                                |               |    |    |          | High | 690.500 | 133397 | -      | -      | -   | -  | -    | -      | - | - | -     | -   | - |  |  |
|                                |               |    |    | Downlink | Low  | 634.500 | 126900 | 632.25 | 126450 | 0   | 15 | 1587 | 126990 | 0 | 1 | 2 (4) | 5   |   |  |  |
|                                |               |    |    |          | Mid  | 627.000 | 125400 | 606.39 | 121278 | 102 |    | 1566 | 125310 | 0 | 0 | 0 (0) | 102 |   |  |  |
|                                |               |    |    |          | High | 634.500 | 126900 | 541.53 | 108306 | 504 |    | 1587 | 126990 | 0 | 1 | 2 (4) | 509 |   |  |  |
|                                | Uplink        |    |    | Uplink   | Low  | 680.500 | 136100 | 678.25 | 135650 | 0   | -  | -    | -      | - | - | -     | -   |   |  |  |
|                                |               |    |    |          | Mid  | 673.000 | 134600 | 580.03 | 116006 | 504 |    | -    | -      | - | - | -     | -   |   |  |  |
|                                |               |    |    |          | High | 680.500 | 136100 | 677.17 | 135434 | 6   |    | -    | -      | - | - | -     | -   |   |  |  |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcchConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{\text{OffsetCORESET-0-Carrier}}$  in Annex C expressed in number of common RBs.

Table 4.3.1.4.2.71.1-2: EN-DC combination DC\_(n)71AA, intra-band contiguous, SCS 30 kHz, 100 kHz NR raster, NR CC at the band edge

| EN-DC channel bandwidth combination | CC         | Bandwidth [MHz] | carrier bandwidth [PRBs] | Range    | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE SET#0 Index (Offset [RBs]) Note 1 | CORE SET#0 PointA (SIB1) [PRBs] Note 1 | offsetToPointA |  |  |
|-------------------------------------|------------|-----------------|--------------------------|----------|-----------------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|-----------|--|--|--|----------------|--|--|
| E-UTRA: 5MHz + NR: 10MHz            | E-UTRA CC1 | 5               | 25                       | Downlink | Low                         | 629.500                | 68711         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | Mid                         | 639.500                | 68811         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | High                        | 639.500                | 68811         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          | Uplink   | Low                         | 675.500                | 133247        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | Mid                         | 685.500                | 133347        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | High                        | 685.500                | 133347        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     | NR CC1     | 10              | 24                       | Downlink | Low                         | 622.000                | 124400        | 617.68                            | 123536                          | 0                  | 15    | 1555                          | 124370    | 14                                     | 0                                      | 1 (6)                                  | 12             |  |  |
|                                     |            |                 |                          |          | Mid                         | 632.000                | 126400        | 590.96                            | 118192                          | 102                |       | 1580                          | 126490    | 6                                      | 0                                      | 3 (8)                                  | 220            |  |  |
|                                     |            |                 |                          |          | High                        | 647.000                | 129400        | 461.24                            | 92248                           | 504                |       | 1616                          | 129370    | 14                                     | 0                                      | 1 (6)                                  | 1020           |  |  |
|                                     |            |                 |                          | Uplink   | Low                         | 668.000                | 133600        | 663.68                            | 132736                          | 0                  |       | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | Mid                         | 678.000                | 135600        | 492.24                            | 98448                           | 504                |       | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | High                        | 693.000                | 138600        | 686.52                            | 137304                          | 6                  |       | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
| E-UTRA: 5MHz + NR: 15MHz            | E-UTRA CC1 | 5               | 25                       | Downlink | Low                         | 634.500                | 68761         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | Mid                         | 642.000                | 68836         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | High                        | 634.500                | 68761         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          | Uplink   | Low                         | 680.500                | 133297        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | Mid                         | 688.000                | 133372        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | High                        | 680.500                | 133297        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     | NR CC1     | 15              | 38                       | Downlink | Low                         | 624.500                | 124900        | 617.66                            | 123532                          | 0                  | 15    | 1553                          | 124330    | 2                                      | 0                                      | 1 (6)                                  | 12             |  |  |
|                                     |            |                 |                          |          | Mid                         | 632.000                | 126400        | 588.44                            | 117688                          | 102                |       | 1571                          | 125770    | 6                                      | 0                                      | 0 (5)                                  | 214            |  |  |
|                                     |            |                 |                          |          | High                        | 644.500                | 128900        | 456.22                            | 91244                           | 504                |       | 1606                          | 128450    | 18                                     | 0                                      | 2 (7)                                  | 1022           |  |  |
|                                     |            |                 |                          | Uplink   | Low                         | 670.500                | 134100        | 663.66                            | 132732                          | 0                  |       | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | Mid                         | 678.000                | 135600        | 489.72                            | 97944                           | 504                |       | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | High                        | 690.500                | 138100        | 681.5                             | 136300                          | 6                  |       | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
| E-UTRA: 5MHz + NR: 20MHz            | E-UTRA CC1 | 5               | 25                       | Downlink | Low                         | 639.500                | 68811         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | Mid                         | 644.500                | 68861         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            | 20              | 51                       | Downlink | High                        | 629.500                | 68711         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | Uplink                      | Low                    | 685.500       | 133347                            | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     | NR CC1     |                 |                          | Downlink | Mid                         | 690.500                | 133397        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | High                        | 675.500                | 133247        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |
|                                     |            |                 |                          |          | Uplink                      | Low                    | 673.000       | 134600                            | 663.82                          | 132764             | 0     | -                             | -         | -                                      | -                                      | -                                      | -              |  |  |

|                                    |                                    |    |    |          | Mid  | 678.000 | 135600 | 487.38 | 97476  | 504 |    | -    | -      | -  | - | -     | -    | - |
|------------------------------------|------------------------------------|----|----|----------|------|---------|--------|--------|--------|-----|----|------|--------|----|---|-------|------|---|
|                                    |                                    |    |    |          | High | 688.000 | 137600 | 676.66 | 135332 | 6   |    | -    | -      | -  | - | -     | -    | - |
| E-UTRA:<br>10MHz +<br>NR:<br>10MHz | E-UTRA<br>CC1                      | 10 | 50 | Downlink | Low  | 632.000 | 68736  | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    |                                    |    |    |          | Mid  | 639.500 | 68811  | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    |                                    |    |    |          | High | 637.000 | 68786  | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    | NR<br>CC1                          | 10 | 24 | Uplink   | Low  | 678.000 | 133272 | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    |                                    |    |    |          | Mid  | 685.500 | 133347 | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    |                                    |    |    |          | High | 683.000 | 133322 | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    | E-UTRA:<br>10MHz +<br>NR:<br>15MHz | 10 | 50 | Downlink | Low  | 622.000 | 124400 | 617.68 | 123536 | 0   | 15 | 1555 | 124370 | 14 | 0 | 1 (6) | 12   |   |
|                                    |                                    |    |    |          | Mid  | 629.500 | 125900 | 588.46 | 117692 | 102 |    | 1573 | 125810 | 18 | 0 | 0 (5) | 214  |   |
|                                    |                                    |    |    |          | High | 647.000 | 129400 | 461.24 | 92248  | 504 |    | 1616 | 129370 | 14 | 0 | 1 (6) | 1020 |   |
|                                    |                                    |    |    | Uplink   | Low  | 668.000 | 133600 | 663.68 | 132736 | 0   | -  | -    | -      | -  | - | -     | -    |   |
|                                    |                                    |    |    |          | Mid  | 675.500 | 135100 | 489.74 | 97948  | 504 |    | -    | -      | -  | - | -     | -    |   |
|                                    |                                    |    |    |          | High | 693.000 | 138600 | 686.52 | 137304 | 6   |    | -    | -      | -  | - | -     | -    |   |
|                                    | E-UTRA:<br>15MHz +<br>NR:<br>10MHz | 15 | 38 | Downlink | Low  | 637.000 | 68786  | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    |                                    |    |    |          | Mid  | 642.000 | 68836  | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    |                                    |    |    |          | High | 632.000 | 68736  | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    |                                    |    |    | Uplink   | Low  | 683.000 | 13322  | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    |                                    |    |    |          | Mid  | 688.000 | 133372 | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    |                                    |    |    |          | High | 678.000 | 133272 | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    | NR<br>CC1                          | 15 | 38 | Downlink | Low  | 624.500 | 124900 | 617.66 | 123532 | 0   | 15 | 1553 | 124330 | 2  | 0 | 1 (6) | 12   |   |
|                                    |                                    |    |    |          | Mid  | 629.500 | 125900 | 585.94 | 117188 | 102 |    | 1567 | 125330 | 2  | 0 | 1 (6) | 216  |   |
|                                    |                                    |    |    |          | High | 644.500 | 128900 | 456.22 | 91244  | 504 |    | 1606 | 128450 | 18 | 0 | 2 (7) | 1022 |   |
|                                    |                                    |    |    | Uplink   | Low  | 670.500 | 134100 | 663.66 | 132732 | 0   | -  | -    | -      | -  | - | -     | -    |   |
|                                    |                                    |    |    |          | Mid  | 675.500 | 135100 | 487.22 | 97444  | 504 |    | -    | -      | -  | - | -     | -    |   |
|                                    |                                    |    |    |          | High | 690.500 | 138100 | 681.5  | 136300 | 6   |    | -    | -      | -  | - | -     | -    |   |
|                                    | E-UTRA:<br>15MHz +<br>NR:<br>10MHz | 15 | 75 | Downlink | Low  | 634.500 | 68761  | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    |                                    |    |    |          | Mid  | 639.500 | 68811  | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    |                                    |    |    |          | High | 634.500 | 68761  | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    |                                    |    |    | Uplink   | Low  | 680.500 | 133297 | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    |                                    |    |    |          | Mid  | 685.500 | 133347 | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    |                                    |    |    |          | High | 680.500 | 133297 | -      | -      | -   | -  | -    | -      | -  | - | -     | -    | - |
|                                    | NR<br>CC1                          | 10 | 24 | Downlink | Low  | 622.000 | 124400 | 617.68 | 123536 | 0   | 15 | 1555 | 124370 | 14 | 0 | 1 (6) | 12   |   |
|                                    |                                    |    |    |          | Mid  | 627.000 | 125400 | 585.96 | 117192 | 102 |    | 1566 | 125310 | 18 | 0 | 0 (5) | 214  |   |
|                                    |                                    |    |    |          | High | 647.000 | 129400 | 461.24 | 92248  | 504 |    | 1616 | 129370 | 14 | 0 | 1 (6) | 1020 |   |
|                                    |                                    |    |    | Uplink   | Low  | 668.000 | 133600 | 663.68 | 132736 | 0   | -  | -    | -      | -  | - | -     | -    |   |
|                                    |                                    |    |    |          | Mid  | 673.000 | 134600 | 487.24 | 97448  | 504 |    | -    | -      | -  | - | -     | -    |   |
|                                    |                                    |    |    |          | High | 693.000 | 138600 | 686.52 | 137304 | 6   |    | -    | -      | -  | - | -     | -    |   |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcchConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.

Note 3: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter  $\Delta F_{OffsetCORESET-0-Carrier}$  in Annex C expressed in number of common RBs.

Table 4.3.1.4.2.71.1-2A: EN-DC combination DC\_(n)71AA, intra-band contiguous, SCS 30 kHz, 100 kHz NR raster, E-UTRA CC at the band edge

| EN-DC channel bandwidth combination | CC         | Bandwidth [MHz] | carrierBandwidth [PRBs] | Range    | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] Note 3 | CORE SET#0 (Offset [RBs]) Index Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |      |
|-------------------------------------|------------|-----------------|-------------------------|----------|-----------------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|-----------|--|--|-------------------------------------|------|
| E-UTRA: 5MHz + NR: 15MHz            | E-UTRA CC1 | 5               | 25                      | Downlink | Low                         | 619.500                | 68611         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |
|                                     |            |                 |                         |          | Mid                         | 642.000                | 68836         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |
|                                     |            |                 |                         |          | High                        | 649.500                | 68911         | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |
|                                     |            |                 |                         | Uplink   | Low                         | 665.500                | 133147        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |
|                                     |            |                 |                         |          | Mid                         | 688.000                | 133372        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |
|                                     |            |                 |                         |          | High                        | 695.500                | 133447        | -                                 | -                               | -                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |
|                                     | NR CC1     | 15              | 38                      | Downlink | Low                         | 629.500                | 125900        | 622.66                            | 124532                          | 0                  | 15    | 1567                          | 125330    | 2                                      | 0                                      | 1 (6)                               | 12   |
|                                     |            |                 |                         |          | Mid                         | 632.000                | 126400        | 588.44                            | 117688                          | 102                |       | 1571                          | 125770    | 6                                      | 0                                      | 0 (5)                               | 214  |
|                                     |            |                 |                         |          | High                        | 639.500                | 127900        | 451.22                            | 90244                           | 504                |       | 1592                          | 127450    | 18                                     | 0                                      | 2 (7)                               | 1022 |
|                                     |            |                 |                         | Uplink   | Low                         | 675.500                | 135100        | 668.66                            | 133732                          | 0                  | -     | -                             | -         | -                                      | -                                      | -                                   |      |
|                                     |            |                 |                         |          | Mid                         | 678.000                | 135600        | 489.72                            | 97944                           | 504                |       | -                             | -         | -                                      | -                                      | -                                   |      |
|                                     |            |                 |                         |          | High                        | 685.500                | 137100        | 676.5                             | 135300                          | 6                  |       | -                             | -         | -                                      | -                                      | -                                   |      |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-2 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch. ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: The nominal carrier spacing between the E-UTRA and the NR carriers is set in accordance to TS 38.101-3 [9], clause 5.4B1.

## 4.3.1.4.3 Intra-band non-contiguous EN-DC configurations within FR1

## 4.3.1.4.3.1 – 4.3.1.4.3.40 FFS

## 4.3.1.4.3.41 Intra-band non-contiguous EN-DC configurations DC\_41\_n41

## 4.3.1.4.3.41.1 DC\_41A\_n41A

**Table 4.3.1.4.41.1-1: Test frequencies for EN-DC combination DC\_41A\_n41A, Max Wgap**

| Test Frequency ID               | NR channel bandwidth [MHz] | NR SCS [kHz] | NR test frequency range (Note 1) | E-UTRA channel bandwidth [MHz] | E-UTRA frequency range (Note 2) |
|---------------------------------|----------------------------|--------------|----------------------------------|--------------------------------|---------------------------------|
| Low with maxWgap (NR – E-UTRA)  | 40                         | 30           | Low                              | 20                             | High                            |
|                                 | 50                         |              |                                  |                                |                                 |
|                                 | 60                         |              |                                  |                                |                                 |
|                                 | 80                         |              |                                  |                                |                                 |
|                                 | 100                        |              |                                  |                                |                                 |
| High with maxWgap (E-UTRA - NR) | 40                         |              | High                             | 20                             | Low                             |
|                                 | 50                         |              |                                  |                                |                                 |
|                                 | 60                         |              |                                  |                                |                                 |
|                                 | 80                         |              |                                  |                                |                                 |
|                                 | 100                        |              |                                  |                                |                                 |
| Low with maxWgap (NR – E-UTRA)  | 40                         | 60           | Low                              | 20                             | High                            |
|                                 | 50                         |              |                                  |                                |                                 |
|                                 | 60                         |              |                                  |                                |                                 |
|                                 | 80                         |              |                                  |                                |                                 |
|                                 | 100                        |              |                                  |                                |                                 |
| High with maxWgap (E-UTRA - NR) | 40                         |              | High                             | 20                             | Low                             |
|                                 | 50                         |              |                                  |                                |                                 |
|                                 | 60                         |              |                                  |                                |                                 |
|                                 | 80                         |              |                                  |                                |                                 |
|                                 | 100                        |              |                                  |                                |                                 |

Note 1: The NR test frequencies are specified in clause 4.3.1.1.41 for the NR Channel Bandwidth, NR SCS and NR test frequency range as given in the table.

Note 2: The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.2.9 for the E-UTRA channel bandwidth and E-UTRA test frequency range as given in the table.

## 4.3.1.4.3.41.2 DC\_41C\_n41A

**Table 4.3.1.4.41.2-1: Test frequencies for EN-DC combination DC\_41C\_n41A, SCS=30kHz, Max Wgap**

| Test Frequency ID               | NR channel bandwidth [MHz] | NR SCS [kHz] | NR test frequency range (Note 1) | E-UTRA CC Combo / N <sub>RB_agg</sub> [MHz] | E-UTRA frequency range (Note 2) |
|---------------------------------|----------------------------|--------------|----------------------------------|---|---------------------------------|
| Low with maxWgap (NR – E-UTRA)  | 40                         | 30           | Low                              | 20 + 20                                     | High                            |
|                                 | 50                         |              |                                  |   |                                 |
|                                 | 60                         |              |                                  |   |                                 |
|                                 | 80                         |              |                                  |   |                                 |
|                                 | 100                        |              |                                  |   |                                 |
| High with maxWgap (E-UTRA - NR) | 40                         |              | High                             | 20 + 20                                     | Low                             |
|                                 | 50                         |              |                                  |   |                                 |
|                                 | 60                         |              |                                  |   |                                 |
|                                 | 80                         |              |                                  |   |                                 |
|                                 | 100                        |              |                                  |   |                                 |
| Low with maxWgap (NR – E-UTRA)  | 40                         | 60           | Low                              | 20 + 20                                     | High                            |
|                                 | 50                         |              |                                  |   |                                 |
|                                 | 60                         |              |                                  |   |                                 |
|                                 | 80                         |              |                                  |   |                                 |
|                                 | 100                        |              |                                  |   |                                 |
| High with maxWgap (E-UTRA - NR) | 40                         |              | High                             | 20 + 20                                     | Low                             |
|                                 | 50                         |              |                                  |   |                                 |
|                                 | 60                         |              |                                  |   |                                 |
|                                 | 80                         |              |                                  |   |                                 |
|                                 | 100                        |              |                                  |   |                                 |

Note 1: The NR test frequencies are specified in clause 4.3.1.1.41 for the NR Channel Bandwidth, NR SCS and NR test frequency range as given in the table.

Note 2: The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.2.9A for the E-UTRA CC Combo and E-UTRA test frequency range as given in the table.

## 4.3.1.4.3.41.3 DC\_41D\_n41A

**Table 4.3.1.4.41.3-1: Test frequencies for EN-DC combination DC\_41D\_n41A, SCS=30kHz, Max Wgap**

| Test Frequency ID               | NR channel bandwidth [MHz] | NR SCS [kHz] | NR test frequency range (Note 1) | E-UTRA CC Combo / N <sub>RB_agg</sub> [MHz] | E-UTRA frequency range (Note 2) |
|---------------------------------|----------------------------|--------------|----------------------------------|---|---------------------------------|
| Low with maxWgap (NR – E-UTRA)  | 40                         | 30           | Low                              | 20 + 20 + 20                                | High                            |
|                                 | 50                         |              |                                  |   |                                 |
|                                 | 60                         |              |                                  |   |                                 |
|                                 | 80                         |              |                                  |   |                                 |
|                                 | 100                        |              |                                  |   |                                 |
| High with maxWgap (E-UTRA - NR) | 40                         |              | High                             | 20 + 20 + 20                                | Low                             |
|                                 | 50                         |              |                                  |   |                                 |
|                                 | 60                         |              |                                  |   |                                 |
|                                 | 80                         |              |                                  |   |                                 |
|                                 | 100                        |              |                                  |   |                                 |
| Low with maxWgap (NR – E-UTRA)  | 40                         | 60           | Low                              | 20 + 20 + 20                                | High                            |
|                                 | 50                         |              |                                  |   |                                 |
|                                 | 60                         |              |                                  |   |                                 |
|                                 | 80                         |              |                                  |   |                                 |
|                                 | 100                        |              |                                  |   |                                 |
| High with maxWgap (E-UTRA - NR) | 40                         |              | High                             | 20 + 20 + 20                                | Low                             |
|                                 | 50                         |              |                                  |   |                                 |
|                                 | 60                         |              |                                  |   |                                 |
|                                 | 80                         |              |                                  |   |                                 |
|                                 | 100                        |              |                                  |   |                                 |

Note 1: The NR test frequencies are specified in clause 4.3.1.1.41 for the NR Channel Bandwidth, NR scs and NR test frequency range as given in the table.

Note 2: The E-UTRA test frequencies are specified in TS 36.508 [2], clause 4.3.1.2.9A for the E-UTRA CC Combo and E-UTRA test frequency range as given in the table.

## 4.3.1.5 Test frequencies for EN-DC band combinations including FR2

## 4.3.1.5.1 Inter-band EN-DC configurations including FR2

## 4.3.1.5.1.1 General

For inter-band EN-DC configurations as listed in this clause, the following apply:

For the E-UTRA band and E-UTRA CA configurations, test frequencies as specified in TS 36.508 [2], clause 4.3.1 are used.

For the NR band and NR CA configurations, test frequencies as specified in clause 4.3.1.2 are used.

For the secondary NR band in inter-band signalling test cases, the band selected is based on the subset of NR bands supported within the EN-DC configurations specified in Table 4.3.1.4.1.2-1 for NR FR1 and 4.3.1.5.1.2-1 for NR FR2.

## 4.3.1.5.1.2 Inter-band EN-DC configurations including FR2 (two bands)

**Table 4.3.1.5.1.2-1: Inter-band EN-DC configurations including FR2 (two bands)**

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_1A_n257A         | DC_1A_n257A                | 1A                                  | n257A                           | 1A                                | n257A                         | Yes                                      |
| DC_1A_n257D         | DC_1A_n257A                | 1A                                  | CA_n257D                        | 1A                                | n257A                         | FFS (NR 2CC)                             |
| DC_1A_n257E         | DC_1A_n257A                | 1A                                  | CA_n257E                        | 1A                                | n257A                         | No                                       |
| DC_1A_n257F         | DC_1A_n257A                | 1A                                  | CA_n257F                        | 1A                                | n257A                         | No                                       |
| DC_1A_n257G         | DC_1A_n257A                | 1A                                  | CA_n257G                        | 1A                                | n257A                         | FFS (NR 2CC)                             |
|                     | DC_1A_n257G                | 1A                                  | CA_n257G                        | 1A                                | CA_n257G                      | No                                       |
| DC_1A_n257H         | DC_1A_n257A                | 1A                                  | CA_n257H                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257G                | 1A                                  | CA_n257H                        | 1A                                | CA_n257G                      | No                                       |
|                     | DC_1A_n257H                | 1A                                  | CA_n257H                        | 1A                                | CA_n257H                      | No                                       |
| DC_1A_n257I         | DC_1A_n257A                | 1A                                  | CA_n257I                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257G                | 1A                                  | CA_n257I                        | 1A                                | CA_n257G                      | No                                       |
|                     | DC_1A_n257H                | 1A                                  | CA_n257I                        | 1A                                | CA_n257H                      | No                                       |
|                     | DC_1A_n257I                | 1A                                  | CA_n257I                        | 1A                                | CA_n257I                      | No                                       |
| DC_2A_n257A         | DC_2A_n257A                | 2A                                  | n257A                           | 2A                                | n257A                         | Yes                                      |
| DC_2C_n257A         | DC_2A_n257A                | CA_2C                               | n257A                           | 2A                                | n257A                         | No                                       |
| DC_2A_n257(2A)      | DC_2A_n257A                | 2A                                  | CA_n257(2A)                     | 2A                                | n257A                         | FFS (NR 2CC)                             |
| DC_2A-2A_n257A      | DC_2A_n257A                | CA_2A-2A                            | n257A                           | 2A                                | n257A                         | No                                       |
| DC_2A_n260A         | DC_2A_n260A                | 2A                                  | n260A                           | 2A                                | n260A                         | Yes                                      |
| DC_2A_n260G         | DC_2A_n260A                | 2A                                  | CA_n260G                        | 2A                                | n260A                         | Yes (NR 2CC)                             |
| DC_2A_n260H         | DC_2A_n260A                | 2A                                  | CA_n260H                        | 2A                                | n260A                         | No                                       |
| DC_2A_n260I         | DC_2A_n260A                | 2A                                  | CA_n260I                        | 2A                                | n260A                         | No                                       |
| DC_2A_n260J         | DC_2A_n260A                | 2A                                  | CA_n260J                        | 2A                                | n260A                         | No                                       |
| DC_2A_n260K         | DC_2A_n260A                | 2A                                  | CA_n260K                        | 2A                                | n260A                         | No                                       |
| DC_2A_n260L         | DC_2A_n260A                | 2A                                  | CA_n260L                        | 2A                                | n260A                         | No                                       |
| DC_2A_n260M         | DC_2A_n260A                | 2A                                  | CA_n260M                        | 2A                                | n260A                         | No                                       |
| DC_2C_n260A         | DC_2A_n260A                | CA_2C                               | n260A                           | 2A                                | n260A                         | No                                       |
| DC_2A_n260(2A)      | DC_2A_n260A                | 2A                                  | CA_n260(2A)                     | 2A                                | n260A                         | FFS (NR 2CC)                             |
| DC_2A-2A_n260A      | DC_2A_n260A                | CA_2A-2A                            | n260A                           | 2A                                | n260A                         | No                                       |
| DC_2A-2A_n260G      | DC_2A_n260A                | CA_2A-2A                            | CA_n260G                        | 2A                                | n260A                         | No                                       |
| DC_2A-2A_n260H      | DC_2A_n260A                | CA_2A-2A                            | CA_n260H                        | 2A                                | n260A                         | No                                       |
| DC_2A-2A_n260I      | DC_2A_n260A                | CA_2A-2A                            | CA_n260I                        | 2A                                | n260A                         | No                                       |
| DC_2A-2A_n260J      | DC_2A_n260A                | CA_2A-2A                            | CA_n260J                        | 2A                                | n260A                         | No                                       |
| DC_2A-2A_n260K      | DC_2A_n260A                | CA_2A-2A                            | CA_n260K                        | 2A                                | n260A                         | No                                       |
| DC_2A-2A_n260L      | DC_2A_n260A                | CA_2A-2A                            | CA_n260L                        | 2A                                | n260A                         | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_2A-2A_n260M      | DC_2A_n260A                | CA_2A-2A                            | CA_n260M                        | 2A                                | n260A                         | No                                       |
| DC_3A_n257A         | DC_3A_n257A                | 3A                                  | n257A                           | 3A                                | n257A                         | Yes                                      |
| DC_3A_n257D         | DC_3A_n257A                | 3A                                  | CA_n257D                        | 3A                                | n257A                         | FFS (NR 2CC)                             |
| DC_3A_n257E         | DC_3A_n257A                | 3A                                  | CA_n257E                        | 3A                                | n257A                         | No                                       |
| DC_3A_n257F         | DC_3A_n257A                | 3A                                  | CA_n257F                        | 3A                                | n257A                         | No                                       |
| DC_3A_n257G         | DC_3A_n257A                | 3A                                  | CA_n257G                        | 3A                                | n257A                         | Yes (NR 2CC)                             |
|                     | DC_3A_n257B                | 3A                                  | CA_n257G                        | 3A                                | CA_n257B                      | No                                       |
|                     | DC_3A_n257D                | 3A                                  | CA_n257G                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | 3A                                  | CA_n257G                        | 3A                                | CA_n257G                      | No                                       |
| DC_3A_n257H         | DC_3A_n257A                | 3A                                  | CA_n257H                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257B                | 3A                                  | CA_n257H                        | 3A                                | CA_n257B                      | No                                       |
|                     | DC_3A_n257D                | 3A                                  | CA_n257H                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | 3A                                  | CA_n257H                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_3A_n257H                | 3A                                  | CA_n257H                        | 3A                                | CA_n257H                      | No                                       |
| DC_3A_n257I         | DC_3A_n257A                | 3A                                  | CA_n257I                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257B                | 3A                                  | CA_n257I                        | 3A                                | CA_n257B                      | No                                       |
|                     | DC_3A_n257D                | 3A                                  | CA_n257I                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | 3A                                  | CA_n257I                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_3A_n257H                | 3A                                  | CA_n257I                        | 3A                                | CA_n257H                      | No                                       |
|                     | DC_3A_n257I                | 3A                                  | CA_n257I                        | 3A                                | CA_n257I                      | No                                       |
| DC_3A_n258A         | DC_3A_n258A                | 3A                                  | n258A                           | 3A                                | n258A                         | Yes                                      |
| DC_5A_n257A         | DC_5A_n257A                | 5A                                  | n257A                           | 5A                                | n257A                         | Yes                                      |
| DC_5B_n257A         | DC_5A_n257A                | CA_5B                               | n257A                           | 5A                                | n257A                         | No                                       |
|                     | DC_5B_n257A                | CA_5B                               | n257A                           | CA_5B                             | n257A                         | No                                       |
| DC_5A-5A_n257A      | DC_5A_n257A                | CA_5A-5A                            | n257A                           | 5A                                | n257A                         | No                                       |
| DC_5A_n260A         | DC_5A_n260A                | 5A                                  | n260A                           | 5A                                | n260A                         | Yes                                      |
| DC_5A_n260B         | DC_5A_n260A                | 5A                                  | CA_n260B                        | 5A                                | n260A                         | FFS (NR 2CC)                             |
| DC_5A_n260C         | DC_5A_n260A                | 5A                                  | CA_n260C                        | 5A                                | n260A                         | No                                       |
| DC_5A_n260D         | DC_5A_n260A                | 5A                                  | CA_n260D                        | 5A                                | n260A                         | FFS (NR 2CC)                             |
| DC_5A_n260E         | DC_5A_n260A                | 5A                                  | CA_n260E                        | 5A                                | n260A                         | No                                       |
| DC_5A_n260F         | DC_5A_n260A                | 5A                                  | CA_n260F                        | 5A                                | n260A                         | No                                       |
| DC_5A_n260G         | DC_5A_n260A                | 5A                                  | CA_n260G                        | 5A                                | n260A                         | Yes (NR 2CC)                             |
| DC_5A_n260H         | DC_5A_n260A                | 5A                                  | CA_n260H                        | 5A                                | n260A                         | No                                       |
| DC_5A_n260I         | DC_5A_n260A                | 5A                                  | CA_n260I                        | 5A                                | n260A                         | No                                       |
| DC_5A_n260J         | DC_5A_n260A                | 5A                                  | CA_n260J                        | 5A                                | n260A                         | No                                       |
| DC_5A_n260K         | DC_5A_n260A                | 5A                                  | CA_n260K                        | 5A                                | n260A                         | No                                       |
| DC_5A_n260L         | DC_5A_n260A                | 5A                                  | CA_n260L                        | 5A                                | n260A                         | No                                       |
| DC_5A_n260M         | DC_5A_n260A                | 5A                                  | CA_n260M                        | 5A                                | n260A                         | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_5A_n260O         | DC_5A_n260A                | 5A                                  | CA_n260O                        | 5A                                | n260A                         | FFS (NR 2CC)                             |
| DC_5A_n260P         | DC_5A_n260A                | 5A                                  | CA_n260P                        | 5A                                | n260A                         | No                                       |
| DC_5A_n260Q         | DC_5A_n260A                | 5A                                  | CA_n260Q                        | 5A                                | n260A                         | No                                       |
| DC_5B_n260A         | DC_5A_n260A                | CA_5B                               | n260A                           | 5A                                | n260A                         | No                                       |
|                     | DC_5B_n260A                | CA_5B                               | n260A                           | CA_5B                             | n260A                         | No                                       |
| DC_5A_n260(2A)      | DC_5A_n260A                | 5A                                  | CA_n260(2A)                     | 5A                                | n260A                         | FFS (NR 2CC)                             |
| DC_5A_n260(3A)      | DC_5A_n260A                | 5A                                  | CA_n260(3A)                     | 5A                                | n260A                         | No                                       |
| DC_5A_n260(4A)      | DC_5A_n260A                | 5A                                  | n260(4A)                        | 5A                                | n260A                         | No                                       |
| DC_5A_n260(A-I)     | DC_5A_n260A                | 5A                                  | CA_n260(A-I)                    | 5A                                | n260A                         | No                                       |
| DC_5A_n260(D-G)     | DC_5A_n260A                | 5A                                  | CA_n260(D-G)                    | 5A                                | n260A                         | No                                       |
| DC_5A_n260(D-H)     | DC_5A_n260A                | 5A                                  | CA_n260(D-H)                    | 5A                                | n260A                         | No                                       |
| DC_5A_n260(D-I)     | DC_5A_n260A                | 5A                                  | CA_n260(D-I)                    | 5A                                | n260A                         | No                                       |
| DC_5A_n260(D-O)     | DC_5A_n260A                | 5A                                  | CA_n260(D-O)                    | 5A                                | n260A                         | No                                       |
| DC_5A_n260(D-P)     | DC_5A_n260A                | 5A                                  | CA_n260(D-P)                    | 5A                                | n260A                         | No                                       |
| DC_5A_n260(D-Q)     | DC_5A_n260A                | 5A                                  | CA_n260(D-Q)                    | 5A                                | n260A                         | No                                       |
| DC_5A_n260(E-O)     | DC_5A_n260A                | 5A                                  | CA_n260(E-O)                    | 5A                                | n260A                         | No                                       |
| DC_5A_n260(E-P)     | DC_5A_n260A                | 5A                                  | CA_n260(E-P)                    | 5A                                | n260A                         | No                                       |
| DC_5A_n260(E-Q)     | DC_5A_n260A                | 5A                                  | CA_n260(E-Q)                    | 5A                                | n260A                         | No                                       |
| DC_5A_n260(G-I)     | DC_5A_n260A                | 5A                                  | CA_n260(G-I)                    | 5A                                | n260A                         | No                                       |
| DC_5A-5A_n260A      | DC_5A_n260A                | CA_5A-5A                            | n260A                           | 5A                                | n260A                         | No                                       |
| DC_5A_n261A         | DC_5A_n261A                | 5A                                  | n261A                           | 5A                                | n261A                         | Yes                                      |
| DC_5A_n261B         | DC_5A_n261A                | 5A                                  | CA_n261B                        | 5A                                | n261A                         | FFS (NR 2CC)                             |
| DC_5A_n261C         | DC_5A_n261A                | 5A                                  | CA_n261C                        | 5A                                | n261A                         | No                                       |
| DC_5A_n261D         | DC_5A_n261A                | 5A                                  | CA_n261D                        | 5A                                | n261A                         | FFS (NR 2CC)                             |
| DC_5A_n261E         | DC_5A_n261A                | 5A                                  | CA_n261E                        | 5A                                | n261A                         | No                                       |
| DC_5A_n261F         | DC_5A_n261A                | 5A                                  | CA_n261F                        | 5A                                | n261A                         | No                                       |
| DC_5A_n261G         | DC_5A_n261A                | 5A                                  | CA_n261G                        | 5A                                | n261A                         | Yes (NR 2CC)                             |
| DC_5A_n261H         | DC_5A_n261A                | 5A                                  | CA_n261H                        | 5A                                | n261A                         | No                                       |
| DC_5A_n261I         | DC_5A_n261A                | 5A                                  | CA_n261I                        | 5A                                | n261A                         | No                                       |
| DC_5A_n261J         | DC_5A_n261A                | 5A                                  | CA_n261J                        | 5A                                | n261A                         | No                                       |
| DC_5A_n261K         | DC_5A_n261A                | 5A                                  | CA_n261K                        | 5A                                | n261A                         | No                                       |
| DC_5A_n261L         | DC_5A_n261A                | 5A                                  | CA_n261L                        | 5A                                | n261A                         | No                                       |
| DC_5A_n261M         | DC_5A_n261A                | 5A                                  | CA_n261M                        | 5A                                | n261A                         | No                                       |
| DC_5A_n261O         | DC_5A_n261A                | 5A                                  | CA_n261O                        | 5A                                | n261A                         | FFS (NR 2CC)                             |
| DC_5A_n261P         | DC_5A_n261A                | 5A                                  | CA_n261P                        | 5A                                | n261A                         | No                                       |
| DC_5A_n261Q         | DC_5A_n261A                | 5A                                  | CA_n261Q                        | 5A                                | n261A                         | No                                       |
| DC_5A_n261(2A)      | DC_5A_n261A                | 5A                                  | CA_n261(2A)                     | 5A                                | n261A                         | FFS (NR 2CC)                             |
| DC_5A_n261(3A)      | DC_5A_n261A                | 5A                                  | CA_n261(3A)                     | 5A                                | n261A                         | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_5A_n261(4A)      | DC_5A_n261A                | 5A                                  | CA_n261(4A)                     | 5A                                | n261A                         | No                                       |
| DC_5A_n261(D-G)     | DC_5A_n261A                | 5A                                  | CA_n261(D-G)                    | 5A                                | n261A                         | No                                       |
| DC_5A_n261(D-H)     | DC_5A_n261A                | 5A                                  | CA_n261(D-H)                    | 5A                                | n261A                         | No                                       |
| DC_5A_n261(D-I)     | DC_5A_n261A                | 5A                                  | CA_n261(D-I)                    | 5A                                | n261A                         | No                                       |
| DC_5A_n261(D-O)     | DC_5A_n261A                | 5A                                  | CA_n261(D-O)                    | 5A                                | n261A                         | No                                       |
| DC_5A_n261(D-P)     | DC_5A_n261A                | 5A                                  | CA_n261(D-P)                    | 5A                                | n261A                         | No                                       |
| DC_5A_n261(D-Q)     | DC_5A_n261A                | 5A                                  | CA_n261(D-Q)                    | 5A                                | n261A                         | No                                       |
| DC_5A_n261(E-O)     | DC_5A_n261A                | 5A                                  | CA_n261(E-O)                    | 5A                                | n261A                         | No                                       |
| DC_5A_n261(E-P)     | DC_5A_n261A                | 5A                                  | CA_n261(E-P)                    | 5A                                | n261A                         | No                                       |
| DC_5A_n261(E-Q)     | DC_5A_n261A                | 5A                                  | CA_n261(E-Q)                    | 5A                                | n261A                         | No                                       |
| DC_7A_n257A         | DC_7A_n257A                | 7A                                  | n257A                           | 7A                                | n257A                         | Yes                                      |
| DC_7A-7A_n257A      | DC_7A_n257A                | CA_7A-7A                            | n257A                           | 7A                                | n257A                         | No                                       |
| DC_7A_n258A         | DC_7A_n258A                | 7A                                  | n258A                           | 7A                                | n258A                         | Yes                                      |
| DC_8A_n257A         | DC_8A_n257A                | 8A                                  | n257A                           | 8A                                | n257A                         | Yes                                      |
| DC_8A_n258A         | DC_8A_n258A                | 8A                                  | n258A                           | 8A                                | n258A                         | Yes                                      |
| DC_11A_n257A        | DC_11A_n257A               | 11A                                 | n257A                           | 11A                               | n257A                         | Yes                                      |
| DC_12A_n260A        | DC_12A_n260A               | 12A                                 | n260A                           | 12A                               | n260A                         | Yes                                      |
| DC_12A_n260G        | DC_12A_n260A               | 12A                                 | CA_n260G                        | 12A                               | n260A                         | Yes (NR 2CC)                             |
| DC_12A_n260H        | DC_12A_n260A               | 12A                                 | CA_n260H                        | 12A                               | n260A                         | No                                       |
| DC_12A_n260I        | DC_12A_n260A               | 12A                                 | CA_n260I                        | 12A                               | n260A                         | No                                       |
| DC_12A_n260J        | DC_12A_n260A               | 12A                                 | CA_n260J                        | 12A                               | n260A                         | No                                       |
| DC_12A_n260K        | DC_12A_n260A               | 12A                                 | CA_n260K                        | 12A                               | n260A                         | No                                       |
| DC_12A_n260L        | DC_12A_n260A               | 12A                                 | CA_n260L                        | 12A                               | n260A                         | No                                       |
| DC_12A_n260M        | DC_12A_n260A               | 12A                                 | CA_n260M                        | 12A                               | n260A                         | No                                       |
| DC_12A_n260(A-I)    | DC_12A_n260A               | 12A                                 | CA_n260(A-I)                    | 12A                               | n260A                         | No                                       |
| DC_12A_n260(G-I)    | DC_12A_n260A               | 12A                                 | CA_n260(G-I)                    | 12A                               | n260A                         | No                                       |
| DC_13A_n257A        | DC_13A_n257A               | 13A                                 | n257A                           | 13A                               | n257A                         | Yes                                      |
| DC_13A_n260A        | DC_13A_n260A               | 13A                                 | n260A                           | 13A                               | n260A                         | Yes                                      |
| DC_18A_n257A        | DC_18A_n257A               | 18A                                 | n257A                           | 18A                               | n257A                         | Yes                                      |
| DC_19A_n257A        | DC_19A_n257A               | 19A                                 | n257A                           | 19A                               | n257A                         | Yes                                      |
| DC_19A_n257D        | DC_19A_n257A               | 19A                                 | CA_n257D                        | 19A                               | n257A                         | FFS (NR 2CC)                             |
| DC_19A_n257E        | DC_19A_n257A               | 19A                                 | CA_n257E                        | 19A                               | n257A                         | No                                       |
| DC_19A_n257F        | DC_19A_n257A               | 19A                                 | CA_n257F                        | 19A                               | n257A                         | No                                       |
| DC_19A_n257G        | DC_19A_n257A               | 19A                                 | CA_n257G                        | 19A                               | n257A                         | Yes (NR 2CC)                             |
| DC_19A_n257H        | DC_19A_n257G               | 19A                                 | CA_n257G                        | 19A                               | CA_n257G                      | No                                       |
|                     | DC_19A_n257H               | 19A                                 | CA_n257H                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257H               | 19A                                 | CA_n257H                        | 19A                               | CA_n257G                      | No                                       |
|                     | DC_19A_n257H               | 19A                                 | CA_n257H                        | 19A                               | CA_n257H                      | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_19A_n257I        | DC_19A_n257A               | 19A                                 | CA_n257I                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257G               | 19A                                 | CA_n257I                        | 19A                               | CA_n257G                      | No                                       |
|                     | DC_19A_n257H               | 19A                                 | CA_n257I                        | 19A                               | CA_n257H                      | No                                       |
|                     | DC_19A_n257I               | 19A                                 | CA_n257I                        | 19A                               | CA_n257I                      | No                                       |
| DC_20A_n258A        | DC_20A_n258A               | 20A                                 | n258A                           | 20A                               | n258A                         | Yes                                      |
| DC_21A_n257A        | DC_21A_n257A               | 21A                                 | n257A                           | 21A                               | n257A                         | Yes                                      |
| DC_21A_n257D        | DC_21A_n257A               | 21A                                 | CA_n257D                        | 21A                               | n257A                         | FFS (NR 2CC)                             |
| DC_21A_n257E        | DC_21A_n257A               | 21A                                 | CA_n257E                        | 21A                               | n257A                         | No                                       |
| DC_21A_n257F        | DC_21A_n257A               | 21A                                 | CA_n257F                        | 21A                               | n257A                         | No                                       |
| DC_21A_n257G        | DC_21A_n257A               | 21A                                 | CA_n257G                        | 21A                               | n257A                         | Yes (NR 2CC)                             |
|                     | DC_21A_n257G               | 21A                                 | CA_n257G                        | 21A                               | CA_n257G                      | No                                       |
| DC_21A_n257H        | DC_21A_n257A               | 21A                                 | CA_n257H                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257G               | 21A                                 | CA_n257H                        | 21A                               | CA_n257G                      | No                                       |
|                     | DC_21A_n257H               | 21A                                 | CA_n257H                        | 21A                               | CA_n257H                      | No                                       |
| DC_21A_n257I        | DC_21A_n257A               | 21A                                 | CA_n257I                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257G               | 21A                                 | CA_n257I                        | 21A                               | CA_n257G                      | No                                       |
|                     | DC_21A_n257H               | 21A                                 | CA_n257I                        | 21A                               | CA_n257H                      | No                                       |
|                     | DC_21A_n257I               | 21A                                 | CA_n257I                        | 21A                               | CA_n257I                      | No                                       |
| DC_26A_n257A        | DC_26A_n257A               | 26A                                 | n257A                           | 26A                               | n257A                         | Yes                                      |
| DC_28A_n257A        | DC_28A_n257A               | 28A                                 | n257A                           | 28A                               | n257A                         | Yes                                      |
| DC_28A_n257D        | DC_28A_n257A               | 28A                                 | CA_n257D                        | 28A                               | n257A                         | FFS (NR 2CC)                             |
| DC_28A_n257E        | DC_28A_n257A               | 28A                                 | CA_n257E                        | 28A                               | n257A                         | No                                       |
| DC_28A_n257F        | DC_28A_n257A               | 28A                                 | CA_n257F                        | 28A                               | n257A                         | No                                       |
| DC_28A_n258A        | DC_28A_n258A               | 28A                                 | n258A                           | 28A                               | n258A                         | Yes                                      |
| DC_30A_n260A        | DC_30A_n260A               | 30A                                 | n260A                           | 30A                               | n260A                         | Yes                                      |
| DC_30A_n260G        | DC_30A_n260A               | 30A                                 | CA_n260G                        | 30A                               | n260A                         | Yes (NR 2CC)                             |
| DC_30A_n260H        | DC_30A_n260A               | 30A                                 | CA_n260H                        | 30A                               | n260A                         | No                                       |
| DC_30A_n260I        | DC_30A_n260A               | 30A                                 | CA_n260I                        | 30A                               | n260A                         | No                                       |
| DC_30A_n260J        | DC_30A_n260A               | 30A                                 | CA_n260J                        | 30A                               | n260A                         | No                                       |
| DC_30A_n260K        | DC_30A_n260A               | 30A                                 | CA_n260K                        | 30A                               | n260A                         | No                                       |
| DC_30A_n260L        | DC_30A_n260A               | 30A                                 | CA_n260L                        | 30A                               | n260A                         | No                                       |
| DC_30A_n260M        | DC_30A_n260A               | 30A                                 | CA_n260M                        | 30A                               | n260A                         | No                                       |
| DC_30A_n260(A-I)    | DC_30A_n260A               | 30A                                 | CA_n260(A-I)                    | 30A                               | n260A                         | No                                       |
| DC_30A_n260(G-I)    | DC_30A_n260A               | 30A                                 | CA_n260(G-I)                    | 30A                               | n260A                         | No                                       |
| DC_39A_n258A        | DC_39A_n258A               | 39A                                 | n258A                           | 39A                               | n258A                         | Yes                                      |
| DC_41A_n257A        | DC_41A_n257A               | 41A                                 | n257A                           | 41A                               | n257A                         | Yes                                      |
| DC_41A_n258A        | DC_41A_n258A               | 41A                                 | n258A                           | 41A                               | n258A                         | Yes                                      |
| DC_41C_n257A        | DC_41A_n257A               | CA_41C                              | n257A                           | 41A                               | n257A                         | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
|                     | DC_41C_n257A               | CA_41C                              | n257A                           | CA_41C                            | n257A                         | No                                       |
| DC_42A_n257A        | DC_42A_n257A               | 42A                                 | n257A                           | 42A                               | n257A                         | Yes                                      |
| DC_42C_n257A        | DC_42A_n257A               | CA_42C                              | n257A                           | 42A                               | n257A                         | No                                       |
|                     | DC_42C_n257A               | CA_42C                              | n257A                           | CA_42C                            | n257A                         | No                                       |
| DC_42A_n257D        | DC_42A_n257A               | 42A                                 | CA_n257D                        | 42A                               | n257A                         | FFS (NR 2CC)                             |
| DC_42A_n257E        | DC_42A_n257A               | 42A                                 | CA_n257E                        | 42A                               | n257A                         | No                                       |
| DC_42A_n257F        | DC_42A_n257A               | 42A                                 | CA_n257F                        | 42A                               | n257A                         | No                                       |
| DC_42C_n257D        | DC_42A_n257A               | CA_42C                              | CA_n257D                        | 42A                               | n257A                         | No                                       |
|                     | DC_42C_n257A               | CA_42C                              | CA_n257D                        | CA_42C                            | n257A                         | No                                       |
| DC_42C_n257E        | DC_42A_n257A               | CA_42C                              | CA_n257E                        | 42A                               | n257A                         | No                                       |
|                     | DC_42C_n257A               | CA_42C                              | CA_n257E                        | CA_42C                            | n257A                         | No                                       |
| DC_42C_n257F        | DC_42A_n257A               | CA_42C                              | CA_n257F                        | 42A                               | n257A                         | No                                       |
|                     | DC_42C_n257A               | CA_42C                              | CA_n257F                        | CA_42C                            | n257A                         | No                                       |
| DC_42D_n257A        | DC_42A_n257A               | CA_42D                              | n257A                           | 42A                               | n257A                         | No                                       |
|                     | DC_42C_n257A               | CA_42D                              | n257A                           | CA_42C                            | n257A                         | No                                       |
| DC_42E_n257A        | DC_42A_n257A               | CA_42E                              | n257A                           | 42A                               | n257A                         | No                                       |
|                     | DC_42C_n257A               | CA_42E                              | n257A                           | CA_42C                            | n257A                         | No                                       |
| DC_48A_n257A        | DC_48A_n257A               | 48A                                 | n257A                           | 48A                               | n257A                         | Yes                                      |
| DC_48C_n257A        | DC_48A_n257A               | CA_48C                              | n257A                           | 48A                               | n257A                         | No                                       |
|                     | DC_48C_n257A               | CA_48C                              | n257A                           | CA_48C                            | n257A                         | No                                       |
| DC_48A-48A_n257A    | DC_48A_n257A               | CA_48A-48A                          | n257A                           | 48A                               | n257A                         | No                                       |
| DC_48A_n260A        | DC_48A_n260A               | 48A                                 | n260A                           | 48A                               | n260A                         | Yes                                      |
| DC_48C_n260A        | DC_48A_n260A               | CA_48C                              | n260A                           | 48A                               | n260A                         | No                                       |
|                     | DC_48C_n260A               | CA_48C                              | n260A                           | CA_48C                            | n260A                         | No                                       |
| DC_48A-48A_n260A    | DC_48A_n260A               | CA_48A-48A                          | n260A                           | 48A                               | n260A                         | No                                       |
| DC_66A_n257A        | DC_66A_n257A               | 66A                                 | n257A                           | 66A                               | n257A                         | Yes                                      |
| DC_66A_n257(2A)     | DC_66A_n257A               | 66A                                 | CA_n257(2A)                     | 66A                               | n257A                         | FFS (NR 2CC)                             |
| DC_66A_n257G        | DC_66A_n257A               | 66A                                 | CA_n257G                        | 66A                               | n257A                         | Yes (NR 2CC)                             |
| DC_66A_n257H        | DC_66A_n257A               | 66A                                 | CA_n257H                        | 66A                               | n257A                         | No                                       |
| DC_66A_n257I        | DC_66A_n257A               | 66A                                 | CA_n257I                        | 66A                               | n257A                         | No                                       |
| DC_66A_n257J        | DC_66A_n257A               | 66A                                 | CA_n257J                        | 66A                               | n257A                         | No                                       |
| DC_66A_n257K        | DC_66A_n257A               | 66A                                 | CA_n257K                        | 66A                               | n257A                         | No                                       |
| DC_66A_n257L        | DC_66A_n257A               | 66A                                 | CA_n257L                        | 66A                               | n257A                         | No                                       |
| DC_66A_n257M        | DC_66A_n257A               | 66A                                 | CA_n257M                        | 66A                               | n257A                         | No                                       |
| DC_66C_n257A        | DC_66A_n257A               | CA_66C                              | n257A                           | 66A                               | n257A                         | No                                       |
| DC_66A-66A_n257A    | DC_66A_n257A               | CA_66A-66A                          | n257A                           | 66A                               | n257A                         | No                                       |
| DC_66A_n260A        | DC_66A_n260A               | 66A                                 | n260A                           | 66A                               | n260A                         | Yes                                      |
| DC_66A_n260D        | DC_66A_n260A               | 66A                                 | CA_n260D                        | 66A                               | n260A                         | FFS (NR 2CC)                             |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_66A_n260E        | DC_66A_n260A               | 66A                                 | CA_n260E                        | 66A                               | n260A                         | No                                       |
| DC_66A_n260F        | DC_66A_n260A               | 66A                                 | CA_n260F                        | 66A                               | n260A                         | No                                       |
| DC_66A_n260G        | DC_66A_n260A               | 66A                                 | CA_n260G                        | 66A                               | n260A                         | Yes (NR 2CC)                             |
| DC_66A_n260H        | DC_66A_n260A               | 66A                                 | CA_n260H                        | 66A                               | n260A                         | No                                       |
| DC_66A_n260I        | DC_66A_n260A               | 66A                                 | CA_n260I                        | 66A                               | n260A                         | No                                       |
| DC_66A_n260J        | DC_66A_n260A               | 66A                                 | CA_n260J                        | 66A                               | n260A                         | No                                       |
| DC_66A_n260K        | DC_66A_n260A               | 66A                                 | CA_n260K                        | 66A                               | n260A                         | No                                       |
| DC_66A_n260L        | DC_66A_n260A               | 66A                                 | CA_n260L                        | 66A                               | n260A                         | No                                       |
| DC_66A_n260M        | DC_66A_n260A               | 66A                                 | CA_n260M                        | 66A                               | n260A                         | No                                       |
| DC_66A_n260O        | DC_66A_n260A               | 66A                                 | CA_n260O                        | 66A                               | n260A                         | FFS (NR 2CC)                             |
| DC_66A_n260P        | DC_66A_n260A               | 66A                                 | CA_n260P                        | 66A                               | n260A                         | No                                       |
| DC_66A_n260Q        | DC_66A_n260A               | 66A                                 | CA_n260Q                        | 66A                               | n260A                         | No                                       |
| DC_66A_n260(2A)     | DC_66A_n260A               | 66A                                 | CA_n260(2A)                     | 66A                               | n260A                         | FFS (NR 2CC)                             |
| DC_66A_n260(3A)     | DC_66A_n260A               | 66A                                 | CA_n260(3A)                     | 66A                               | n260A                         | No                                       |
| DC_66A_n260(4A)     | DC_66A_n260A               | 66A                                 | CA_n260(4A)                     | 66A                               | n260A                         | No                                       |
| DC_66A_n260(A-I)    | DC_66A_n260A               | 66A                                 | CA_n260(A-I)                    | 66A                               | n260A                         | No                                       |
| DC_66A_n260(D-G)    | DC_66A_n260A               | 66A                                 | CA_n260(D-G)                    | 66A                               | n260A                         | No                                       |
| DC_66A_n260(D-H)    | DC_66A_n260A               | 66A                                 | CA_n260(D-H)                    | 66A                               | n260A                         | No                                       |
| DC_66A_n260(D-I)    | DC_66A_n260A               | 66A                                 | CA_n260(D-I)                    | 66A                               | n260A                         | No                                       |
| DC_66A_n260(D-O)    | DC_66A_n260A               | 66A                                 | CA_n260(D-O)                    | 66A                               | n260A                         | No                                       |
| DC_66A_n260(D-P)    | DC_66A_n260A               | 66A                                 | CA_n260(D-P)                    | 66A                               | n260A                         | No                                       |
| DC_66A_n260(D-Q)    | DC_66A_n260A               | 66A                                 | CA_n260(D-Q)                    | 66A                               | n260A                         | No                                       |
| DC_66A_n260(E-O)    | DC_66A_n260A               | 66A                                 | CA_n260(E-O)                    | 66A                               | n260A                         | No                                       |
| DC_66A_n260(E-P)    | DC_66A_n260A               | 66A                                 | CA_n260(E-P)                    | 66A                               | n260A                         | No                                       |
| DC_66A_n260(E-Q)    | DC_66A_n260A               | 66A                                 | CA_n260(E-Q)                    | 66A                               | n260A                         | No                                       |
| DC_66A_n260(G-I)    | DC_66A_n260A               | 66A                                 | CA_n260(G-I)                    | 66A                               | n260A                         | No                                       |
| DC_66A-66A_n260A    | DC_66A_n260A               | CA_66A-66A                          | n260A                           | 66A                               | n260A                         | No                                       |
| DC_66A-66A_n260G    | DC_66A_n260A               | CA_66A-66A                          | CA_n260G                        | 66A                               | n260A                         | No                                       |
| DC_66A-66A_n260H    | DC_66A_n260A               | CA_66A-66A                          | CA_n260H                        | 66A                               | n260A                         | No                                       |
| DC_66A-66A_n260I    | DC_66A_n260A               | CA_66A-66A                          | CA_n260I                        | 66A                               | n260A                         | No                                       |
| DC_66A-66A_n260J    | DC_66A_n260A               | CA_66A-66A                          | CA_n260J                        | 66A                               | n260A                         | No                                       |
| DC_66A-66A_n260K    | DC_66A_n260A               | CA_66A-66A                          | CA_n260K                        | 66A                               | n260A                         | No                                       |
| DC_66A-66A_n260L    | DC_66A_n260A               | CA_66A-66A                          | CA_n260L                        | 66A                               | n260A                         | No                                       |
| DC_66A-66A_n260M    | DC_66A_n260A               | CA_66A-66A                          | CA_n260M                        | 66A                               | n260A                         | No                                       |
| DC_66A_n261A        | DC_66A_n261A               | 66A                                 | n261A                           | 66A                               | n261A                         | Yes                                      |
| DC_66A_n261D        | DC_66A_n261A               | 66A                                 | CA_n261D                        | 66A                               | n261A                         | FFS (NR 2CC)                             |
| DC_66A_n261E        | DC_66A_n261A               | 66A                                 | CA_n261E                        | 66A                               | n261A                         | No                                       |
| DC_66A_n261F        | DC_66A_n261A               | 66A                                 | CA_n261F                        | 66A                               | n261A                         | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_66A_n261G        | DC_66A_n261A               | 66A                                 | CA_n261G                        | 66A                               | n261A                         | Yes (NR 2CC)                             |
| DC_66A_n261H        | DC_66A_n261A               | 66A                                 | CA_n261H                        | 66A                               | n261A                         | No                                       |
| DC_66A_n261I        | DC_66A_n261A               | 66A                                 | CA_n261I                        | 66A                               | n261A                         | No                                       |
| DC_66A_n261J        | DC_66A_n261A               | 66A                                 | CA_n261J                        | 66A                               | n261A                         | No                                       |
| DC_66A_n261K        | DC_66A_n261A               | 66A                                 | CA_n261K                        | 66A                               | n261A                         | No                                       |
| DC_66A_n261L        | DC_66A_n261A               | 66A                                 | CA_n261L                        | 66A                               | n261A                         | No                                       |
| DC_66A_n261M        | DC_66A_n261A               | 66A                                 | CA_n261M                        | 66A                               | n261A                         | No                                       |
| DC_66A_n261O        | DC_66A_n261A               | 66A                                 | CA_n261O                        | 66A                               | n261A                         | FFS (NR 2CC)                             |
| DC_66A_n261P        | DC_66A_n261A               | 66A                                 | CA_n261P                        | 66A                               | n261A                         | No                                       |
| DC_66A_n261Q        | DC_66A_n261A               | 66A                                 | CA_n261Q                        | 66A                               | n261A                         | No                                       |
| DC_66A_n261(2A)     | DC_66A_n261A               | 66A                                 | CA_n261(2A)                     | 66A                               | n261A                         | FFS (NR 2CC)                             |
| DC_66A_n261(3A)     | DC_66A_n261A               | 66A                                 | CA_n261(3A)                     | 66A                               | n261A                         | No                                       |
| DC_66A_n261(4A)     | DC_66A_n261A               | 66A                                 | CA_n261(4A)                     | 66A                               | n261A                         | No                                       |
| DC_66A_n261(D-G)    | DC_66A_n261A               | 66A                                 | CA_n261(D-G)                    | 66A                               | n261A                         | No                                       |
| DC_66A_n261(D-H)    | DC_66A_n261A               | 66A                                 | CA_n261(D-H)                    | 66A                               | n261A                         | No                                       |
| DC_66A_n261(D-I)    | DC_66A_n261A               | 66A                                 | CA_n261(D-I)                    | 66A                               | n261A                         | No                                       |
| DC_66A_n261(D-O)    | DC_66A_n261A               | 66A                                 | CA_n261(D-O)                    | 66A                               | n261A                         | No                                       |
| DC_66A_n261(D-P)    | DC_66A_n261A               | 66A                                 | CA_n261(D-P)                    | 66A                               | n261A                         | No                                       |
| DC_66A_n261(D-Q)    | DC_66A_n261A               | 66A                                 | CA_n261(D-Q)                    | 66A                               | n261A                         | No                                       |
| DC_66A_n261(E-O)    | DC_66A_n261A               | 66A                                 | CA_n261(E-O)                    | 66A                               | n261A                         | No                                       |
| DC_66A_n261(E-P)    | DC_66A_n261A               | 66A                                 | CA_n261(E-P)                    | 66A                               | n261A                         | No                                       |
| DC_66A_n261(E-Q)    | DC_66A_n261A               | 66A                                 | CA_n261(E-Q)                    | 66A                               | n261A                         | No                                       |

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

## 4.3.1.5.1.3 Inter-band EN-DC configurations including FR2 (three bands)

**Table 4.3.1.5.1.3-1: Inter-band EN-DC configurations including FR2 (three bands)**

| <b>EN-DC configuration</b> | <b>Uplink EN-DC Configuration</b> | <b>EN-DC E-UTRA downlink configuration</b> | <b>EN-DC NR downlink configuration</b> | <b>EN-DC E-UTRA uplink configuration</b> | <b>EN-DC NR uplink configuration</b> | <b>Applicable for protocol testing (Note 1)</b> |
|----------------------------|-----------------------------------|--|--|--|--------------------------------------|---|
| DC_1A-3A_n257A             | DC_1A_n257A                       | CA_1A-3A                                   | n257A                                  | 1A                                       | n257A                                | No  |
|                            | DC_3A_n257A                       | CA_1A-3A                                   | n257A                                  | 3A                                       | n257A                                | No  |
| DC_1A-3A_n257G             | DC_1A_n257A                       | CA_1A-3A                                   | CA_n257G                               | 1A                                       | n257A                                | No  |
|                            | DC_1A_n257D                       | CA_1A-3A                                   | CA_n257G                               | 1A                                       | CA_n257D                             | No  |
|                            | DC_3A_n257A                       | CA_1A-3A                                   | CA_n257G                               | 3A                                       | n257A                                | No  |
|                            | DC_3A_n257D                       | CA_1A-3A                                   | CA_n257G                               | 3A                                       | CA_n257D                             | No  |
|                            | DC_3A_n257G                       | CA_1A-3A                                   | CA_n257G                               | 3A                                       | CA_n257G                             | No  |
| DC_1A-3A_n257H             | DC_1A_n257A                       | CA_1A-3A                                   | CA_n257H                               | 1A                                       | n257A                                | No  |
|                            | DC_1A_n257D                       | CA_1A-3A                                   | CA_n257H                               | 1A                                       | CA_n257D                             | No  |
|                            | DC_3A_n257A                       | CA_1A-3A                                   | CA_n257H                               | 3A                                       | n257A                                | No  |
|                            | DC_3A_n257D                       | CA_1A-3A                                   | CA_n257H                               | 3A                                       | CA_n257D                             | No  |
|                            | DC_3A_n257G                       | CA_1A-3A                                   | CA_n257H                               | 3A                                       | CA_n257G                             | No  |
|                            | DC_3A_n257H                       | CA_1A-3A                                   | CA_n257H                               | 3A                                       | CA_n257H                             | No  |
| DC_1A-3A_n257I             | DC_1A_n257A                       | CA_1A-3A                                   | CA_n257I                               | 1A                                       | n257A                                | No  |
|                            | DC_1A_n257D                       | CA_1A-3A                                   | CA_n257I                               | 1A                                       | CA_n257D                             | No  |
|                            | DC_3A_n257A                       | CA_1A-3A                                   | CA_n257I                               | 3A                                       | n257A                                | No  |
|                            | DC_3A_n257D                       | CA_1A-3A                                   | CA_n257I                               | 3A                                       | CA_n257D                             | No  |
|                            | DC_3A_n257G                       | CA_1A-3A                                   | CA_n257I                               | 3A                                       | CA_n257G                             | No  |
|                            | DC_3A_n257H                       | CA_1A-3A                                   | CA_n257I                               | 3A                                       | CA_n257H                             | No  |
|                            | DC_3A_n257I                       | CA_1A-3A                                   | CA_n257I                               | 3A                                       | CA_n257I                             | No  |
| DC_1A-19A_n257A            | DC_1A_n257A                       | CA_1A-19A                                  | n257A                                  | 1A                                       | n257A                                | No  |
|                            | DC_19A_n257A                      | CA_1A-19A                                  | n257A                                  | 19A                                      | n257A                                | No  |
| DC_1A-19A_n257G            | DC_1A_n257A                       | CA_1A-19A                                  | CA_n257G                               | 1A                                       | n257A                                | No  |
|                            | DC_1A_n257D                       | CA_1A-19A                                  | CA_n257G                               | 1A                                       | CA_n257D                             | No  |
|                            | DC_1A_n257G                       | CA_1A-19A                                  | CA_n257G                               | 1A                                       | CA_n257G                             | No  |
|                            | DC_19A_n257A                      | CA_1A-19A                                  | CA_n257G                               | 19A                                      | n257A                                | No  |
|                            | DC_19A_n257D                      | CA_1A-19A                                  | CA_n257G                               | 19A                                      | CA_n257D                             | No  |
| DC_1A-19A_n257H            | DC_1A_n257A                       | CA_1A-19A                                  | CA_n257H                               | 1A                                       | n257A                                | No  |
|                            | DC_1A_n257D                       | CA_1A-19A                                  | CA_n257H                               | 1A                                       | CA_n257D                             | No  |
|                            | DC_1A_n257G                       | CA_1A-19A                                  | CA_n257H                               | 1A                                       | CA_n257G                             | No  |
|                            | DC_1A_n257H                       | CA_1A-19A                                  | CA_n257H                               | 1A                                       | CA_n257H                             | No  |
|                            | DC_19A_n257A                      | CA_1A-19A                                  | CA_n257H                               | 19A                                      | n257A                                | No  |
|                            | DC_19A_n257D                      | CA_1A-19A                                  | CA_n257H                               | 19A                                      | CA_n257D                             | No  |
| DC_1A-19A_n257I            | DC_1A_n257A                       | CA_1A-19A                                  | CA_n257I                               | 1A                                       | n257A                                | No  |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_1A-n257D         | DC_1A_n257D                | CA_1A-19A                           | CA_n257I                        | 1A                                | CA_n257D                      | No                                       |
|                     | DC_1A_n257G                | CA_1A-19A                           | CA_n257I                        | 1A                                | CA_n257G                      | No                                       |
|                     | DC_1A_n257H                | CA_1A-19A                           | CA_n257I                        | 1A                                | CA_n257H                      | No                                       |
|                     | DC_1A_n257I                | CA_1A-19A                           | CA_n257I                        | 1A                                | CA_n257I                      | No                                       |
|                     | DC_19A_n257A               | CA_1A-19A                           | CA_n257I                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257D               | CA_1A-19A                           | CA_n257I                        | 19A                               | CA_n257D                      | No                                       |
| DC_1A-21A_n257A     | DC_1A_n257A                | CA_1A-21A                           | n257A                           | 1A                                | n257A                         | No                                       |
|                     | DC_21A_n257A               | CA_1A-21A                           | n257A                           | 21A                               | n257A                         | No                                       |
| DC_1A-21A_n257G     | DC_1A_n257A                | CA_1A-21A                           | CA_n257G                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257G                | CA_1A-21A                           | CA_n257G                        | 1A                                | CA_n257G                      | No                                       |
|                     | DC_21A_n257A               | CA_1A-21A                           | CA_n257G                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257G               | CA_1A-21A                           | CA_n257G                        | 21A                               | CA_n257G                      | No                                       |
| DC_1A-21A_n257H     | DC_1A_n257A                | CA_1A-21A                           | CA_n257H                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257G                | CA_1A-21A                           | CA_n257H                        | 1A                                | CA_n257G                      | No                                       |
|                     | DC_1A_n257H                | CA_1A-21A                           | CA_n257H                        | 1A                                | CA_n257H                      | No                                       |
|                     | DC_21A_n257A               | CA_1A-21A                           | CA_n257H                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257G               | CA_1A-21A                           | CA_n257H                        | 21A                               | CA_n257G                      | No                                       |
|                     | DC_21A_n257H               | CA_1A-21A                           | CA_n257H                        | 21A                               | CA_n257H                      | No                                       |
| DC_1A-21A_n257I     | DC_1A_n257A                | CA_1A-21A                           | CA_n257I                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257G                | CA_1A-21A                           | CA_n257I                        | 1A                                | CA_n257G                      | No                                       |
|                     | DC_1A_n257H                | CA_1A-21A                           | CA_n257I                        | 1A                                | CA_n257H                      | No                                       |
|                     | DC_1A_n257I                | CA_1A-21A                           | CA_n257I                        | 1A                                | CA_n257I                      | No                                       |
|                     | DC_21A_n257A               | CA_1A-21A                           | CA_n257I                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257G               | CA_1A-21A                           | CA_n257I                        | 21A                               | CA_n257G                      | No                                       |
|                     | DC_21A_n257H               | CA_1A-21A                           | CA_n257I                        | 21A                               | CA_n257H                      | No                                       |
|                     | DC_21A_n257I               | CA_1A-21A                           | CA_n257I                        | 21A                               | CA_n257I                      | No                                       |
| DC_1A-42A_n257A     | DC_1A_n257A                | CA_1A-42A                           | n257A                           | 1A                                | n257A                         | No                                       |
|                     | DC_42A_n257A               | CA_1A-42A                           | n257A                           | 42A                               | n257A                         | No                                       |
| DC_1A-42A_n257G     | DC_1A_n257A                | CA_1A-42A                           | CA_n257G                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257D                | CA_1A-42A                           | CA_n257G                        | 1A                                | CA_n257D                      | No                                       |
|                     | DC_1A_n257A                | CA_1A-42A                           | CA_n257G                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257G                | CA_1A-42A                           | CA_n257G                        | 1A                                | CA_n257G                      | No                                       |
|                     | DC_42A_n257A               | CA_1A-42A                           | CA_n257G                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_1A-42A                           | CA_n257G                        | 42A                               | CA_n257D                      | No                                       |
| DC_1A-42A_n257H     | DC_1A_n257A                | CA_1A-42A                           | CA_n257H                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257D                | CA_1A-42A                           | CA_n257H                        | 1A                                | CA_n257D                      | No                                       |
|                     | DC_1A_n257A                | CA_1A-42A                           | CA_n257H                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257G                | CA_1A-42A                           | CA_n257H                        | 1A                                | CA_n257G                      | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_1A-42A_n257I     | DC_1A_n257H                | CA_1A-42A                           | CA_n257H                        | 1A                                | CA_n257H                      | No                                       |
|                     | DC_42A_n257A               | CA_1A-42A                           | CA_n257H                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_1A-42A                           | CA_n257H                        | 42A                               | CA_n257D                      | No                                       |
| DC_1A-42A_n257I     | DC_1A_n257A                | CA_1A-42A                           | CA_n257I                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257D                | CA_1A-42A                           | CA_n257I                        | 1A                                | CA_n257D                      | No                                       |
|                     | DC_1A_n257A                | CA_1A-42A                           | CA_n257I                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257G                | CA_1A-42A                           | CA_n257I                        | 1A                                | CA_n257G                      | No                                       |
|                     | DC_1A_n257H                | CA_1A-42A                           | CA_n257I                        | 1A                                | CA_n257H                      | No                                       |
|                     | DC_1A_n257I                | CA_1A-42A                           | CA_n257I                        | 1A                                | CA_n257I                      | No                                       |
|                     | DC_42A_n257A               | CA_1A-42A                           | CA_n257I                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_1A-42A                           | CA_n257I                        | 42A                               | CA_n257D                      | No                                       |
| DC_1A-42C_n257A     | DC_1A_n257A                | CA_1A-42C                           | n257A                           | 1A                                | n257A                         | No                                       |
|                     | DC_42A_n257A               | CA_1A-42C                           | n257A                           | 42A                               | n257A                         | No                                       |
| DC_1A-42D_n257A     | DC_1A_n257A                | CA_1A-42D                           | n257A                           | 1A                                | n257A                         | No                                       |
|                     | DC_42A_n257A               | CA_1A-42D                           | n257A                           | 42A                               | n257A                         | No                                       |
| DC_1A-42E_n257A     | DC_1A_n257A                | CA_1A-42E                           | n257A                           | 1A                                | n257A                         | No                                       |
|                     | DC_42A_n257A               | CA_1A-42E                           | n257A                           | 42A                               | n257A                         | No                                       |
| DC_1A-42E_n257G     | DC_1A_n257A                | CA_1A-42E                           | CA_n257G                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257D                | CA_1A-42E                           | CA_n257G                        | 1A                                | CA_n257D                      | No                                       |
|                     | DC_1A_n257A                | CA_1A-42E                           | CA_n257G                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257G                | CA_1A-42E                           | CA_n257G                        | 1A                                | CA_n257G                      | No                                       |
|                     | DC_42A_n257A               | CA_1A-42E                           | CA_n257G                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_1A-42E                           | CA_n257G                        | 42A                               | CA_n257D                      | No                                       |
| DC_1A-42E_n257H     | DC_1A_n257A                | CA_1A-42E                           | CA_n257H                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257D                | CA_1A-42E                           | CA_n257H                        | 1A                                | CA_n257D                      | No                                       |
|                     | DC_1A_n257A                | CA_1A-42E                           | CA_n257H                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257G                | CA_1A-42E                           | CA_n257H                        | 1A                                | CA_n257G                      | No                                       |
|                     | DC_1A_n257H                | CA_1A-42E                           | CA_n257H                        | 1A                                | CA_n257H                      | No                                       |
|                     | DC_42A_n257A               | CA_1A-42E                           | CA_n257H                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_1A-42E                           | CA_n257H                        | 42A                               | CA_n257D                      | No                                       |
| DC_1A-42E_n257I     | DC_1A_n257A                | CA_1A-42E                           | CA_n257I                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257D                | CA_1A-42E                           | CA_n257I                        | 1A                                | CA_n257D                      | No                                       |
|                     | DC_1A_n257A                | CA_1A-42E                           | CA_n257I                        | 1A                                | n257A                         | No                                       |
|                     | DC_1A_n257G                | CA_1A-42E                           | CA_n257I                        | 1A                                | CA_n257G                      | No                                       |
|                     | DC_1A_n257H                | CA_1A-42E                           | CA_n257I                        | 1A                                | CA_n257H                      | No                                       |
|                     | DC_1A_n257I                | CA_1A-42E                           | CA_n257I                        | 1A                                | CA_n257I                      | No                                       |
|                     | DC_42A_n257A               | CA_1A-42E                           | CA_n257I                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_1A-42E                           | CA_n257I                        | 42A                               | CA_n257D                      | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_2A-5A_n257A      | DC_2A_n257A                | CA_2A-5A                            | n257A                           | 2A                                | n257A                         | No                                       |
|                     | DC_5A_n257A                | CA_2A-5A                            | n257A                           | 5A                                | n257A                         | No                                       |
| DC_2A-5A_n260A      | DC_2A_n260A                | CA_2A-5A                            | n260A                           | 2A                                | n260A                         | No                                       |
|                     | DC_5A_n260A                | CA_2A-5A                            | n260A                           | 5A                                | n260A                         | No                                       |
| DC_2A-12A_n260A     | DC_2A_n260A                | CA_2A-12A                           | n260A                           | 2A                                | n260A                         | No                                       |
|                     | DC_12A_n260A               | CA_2A-12A                           | n260A                           | 12A                               | n260A                         | No                                       |
| DC_2A-30A_n260A     | DC_2A_n260A                | CA_2A-30A                           | n260A                           | 2A                                | n260A                         | No                                       |
|                     | DC_30A_n260A               | CA_2A-30A                           | n260A                           | 30A                               | n260A                         | No                                       |
| DC_2A-66A_n257A     | DC_2A_n257A                | CA_2A-66A                           | n257A                           | 2A                                | n257A                         | No                                       |
|                     | DC_66A_n257A               | CA_2A-66A                           | n257A                           | 66A                               | n257A                         | No                                       |
| DC_2A-66A_n260A     | DC_2A_n260A                | CA_2A-66A                           | n260A                           | 2A                                | n260A                         | No                                       |
|                     | DC_66A_n260A               | CA_2A-66A                           | n260A                           | 66A                               | n260A                         | No                                       |
| DC_3A-19A_n257A     | DC_3A_n257A                | CA_3A-19A                           | n257A                           | 3A                                | n257A                         | No                                       |
|                     | DC_19A_n257A               | CA_3A-19A                           | n257A                           | 19A                               | n257A                         | No                                       |
| DC_3A-19A_n257G     | DC_3A_n257A                | CA_3A-19A                           | CA_n257G                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-19A                           | CA_n257G                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-19A                           | CA_n257G                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_19A_n257A               | CA_3A-19A                           | CA_n257G                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257D               | CA_3A-19A                           | CA_n257G                        | 19A                               | CA_n257D                      | No                                       |
| DC_3A-19A_n257H     | DC_3A_n257A                | CA_3A-19A                           | CA_n257H                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-19A                           | CA_n257H                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-19A                           | CA_n257H                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_3A_n257H                | CA_3A-19A                           | CA_n257H                        | 3A                                | CA_n257H                      | No                                       |
|                     | DC_19A_n257A               | CA_3A-19A                           | CA_n257H                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257D               | CA_3A-19A                           | CA_n257H                        | 19A                               | CA_n257D                      | No                                       |
| DC_3A-19A_n257I     | DC_3A_n257A                | CA_3A-19A                           | CA_n257I                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-19A                           | CA_n257I                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-19A                           | CA_n257I                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_3A_n257H                | CA_3A-19A                           | CA_n257I                        | 3A                                | CA_n257H                      | No                                       |
|                     | DC_3A_n257I                | CA_3A-19A                           | CA_n257I                        | 3A                                | CA_n257I                      | No                                       |
|                     | DC_19A_n257A               | CA_3A-19A                           | CA_n257I                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257D               | CA_3A-19A                           | CA_n257I                        | 19A                               | CA_n257D                      | No                                       |
| DC_3A-21A_n257A     | DC_3A_n257A                | CA_3A-21A                           | n257A                           | 3A                                | n257A                         | No                                       |
|                     | DC_21A_n257A               | CA_3A-21A                           | n257A                           | 21A                               | n257A                         | No                                       |
| DC_3A-21A_n257G     | DC_3A_n257A                | CA_3A-21A                           | CA_n257G                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-21A                           | CA_n257G                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-21A                           | CA_n257G                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_21A_n257A               | CA_3A-21A                           | CA_n257G                        | 21A                               | n257A                         | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
|                     | DC_21A_n257D               | CA_3A-21A                           | CA_n257G                        | 21A                               | CA_n257D                      | No                                       |
| DC_3A-21A_n257H     | DC_3A_n257A                | CA_3A-21A                           | CA_n257H                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-21A                           | CA_n257H                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-21A                           | CA_n257H                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_3A_n257H                | CA_3A-21A                           | CA_n257H                        | 3A                                | CA_n257H                      | No                                       |
|                     | DC_21A_n257A               | CA_3A-21A                           | CA_n257H                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257D               | CA_3A-21A                           | CA_n257H                        | 21A                               | CA_n257D                      | No                                       |
| DC_3A-21A_n257I     | DC_3A_n257A                | CA_3A-21A                           | CA_n257I                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-21A                           | CA_n257I                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-21A                           | CA_n257I                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_3A_n257H                | CA_3A-21A                           | CA_n257I                        | 3A                                | CA_n257H                      | No                                       |
|                     | DC_3A_n257I                | CA_3A-21A                           | CA_n257I                        | 3A                                | CA_n257I                      | No                                       |
|                     | DC_21A_n257A               | CA_3A-21A                           | CA_n257I                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257D               | CA_3A-21A                           | CA_n257I                        | 21A                               | CA_n257D                      | No                                       |
| DC_3A-42A_n257A     | DC_3A_n257A                | CA_3A-42A                           | n257A                           | 3A                                | n257A                         | No                                       |
|                     | DC_42A_n257A               | CA_3A-42A                           | n257A                           | 42A                               | n257A                         | No                                       |
| DC_3A-42A_n257G     | DC_3A_n257A                | CA_3A-42A                           | CA_n257G                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-42A                           | CA_n257G                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-42A                           | CA_n257G                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_42A_n257A               | CA_3A-42A                           | CA_n257G                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_3A-42A                           | CA_n257G                        | 42A                               | CA_n257D                      | No                                       |
| DC_3A-42A_n257H     | DC_3A_n257A                | CA_3A-42A                           | CA_n257H                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-42A                           | CA_n257H                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-42A                           | CA_n257H                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_3A_n257H                | CA_3A-42A                           | CA_n257H                        | 3A                                | CA_n257H                      | No                                       |
|                     | DC_42A_n257A               | CA_3A-42A                           | CA_n257H                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_3A-42A                           | CA_n257H                        | 42A                               | CA_n257D                      | No                                       |
| DC_3A-42A_n257I     | DC_3A_n257A                | CA_3A-42A                           | CA_n257I                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-42A                           | CA_n257I                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-42A                           | CA_n257I                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_3A_n257H                | CA_3A-42A                           | CA_n257I                        | 3A                                | CA_n257H                      | No                                       |
|                     | DC_3A_n257I                | CA_3A-42A                           | CA_n257I                        | 3A                                | CA_n257I                      | No                                       |
|                     | DC_42A_n257A               | CA_3A-42A                           | CA_n257I                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_3A-42A                           | CA_n257I                        | 42A                               | CA_n257D                      | No                                       |
| DC_3A-42C_n257A     | DC_3A_n257A                | CA_3A-42C                           | n257A                           | 3A                                | n257A                         | No                                       |
|                     | DC_42A_n257A               | CA_3A-42C                           | n257A                           | 42A                               | n257A                         | No                                       |
| DC_3A-42C_n257G     | DC_3A_n257A                | CA_3A-42C                           | CA_n257G                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-42C                           | CA_n257G                        | 3A                                | CA_n257D                      | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_3A-42C_n257H     | DC_3A_n257G                | CA_3A-42C                           | CA_n257G                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_42A_n257A               | CA_3A-42C                           | CA_n257G                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_3A-42C                           | CA_n257G                        | 42A                               | CA_n257D                      | No                                       |
| DC_3A-42C_n257I     | DC_3A_n257A                | CA_3A-42C                           | CA_n257H                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-42C                           | CA_n257H                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-42C                           | CA_n257H                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_3A_n257H                | CA_3A-42C                           | CA_n257H                        | 3A                                | CA_n257H                      | No                                       |
|                     | DC_42A_n257A               | CA_3A-42C                           | CA_n257H                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_3A-42C                           | CA_n257H                        | 42A                               | CA_n257D                      | No                                       |
| DC_3A-42D_n257G     | DC_3A_n257A                | CA_3A-42D                           | CA_n257G                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-42D                           | CA_n257G                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-42D                           | CA_n257G                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_42A_n257A               | CA_3A-42D                           | CA_n257G                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_3A-42D                           | CA_n257G                        | 42A                               | CA_n257D                      | No                                       |
| DC_3A-42D_n257H     | DC_3A_n257A                | CA_3A-42D                           | CA_n257H                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-42D                           | CA_n257H                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-42D                           | CA_n257H                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_3A_n257H                | CA_3A-42D                           | CA_n257H                        | 3A                                | CA_n257H                      | No                                       |
|                     | DC_42A_n257A               | CA_3A-42D                           | CA_n257H                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_3A-42D                           | CA_n257H                        | 42A                               | CA_n257D                      | No                                       |
| DC_3A-42D_n257I     | DC_3A_n257A                | CA_3A-42D                           | CA_n257I                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-42D                           | CA_n257I                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-42D                           | CA_n257I                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_3A_n257H                | CA_3A-42D                           | CA_n257I                        | 3A                                | CA_n257H                      | No                                       |
|                     | DC_3A_n257I                | CA_3A-42D                           | CA_n257I                        | 3A                                | CA_n257I                      | No                                       |
|                     | DC_42A_n257A               | CA_3A-42D                           | CA_n257I                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_3A-42D                           | CA_n257I                        | 42A                               | CA_n257D                      | No                                       |
| DC_3A-42E_n257G     | DC_3A_n257A                | CA_3A-42E                           | CA_n257G                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-42E                           | CA_n257G                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-42E                           | CA_n257G                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_42A_n257A               | CA_3A-42E                           | CA_n257G                        | 42A                               | n257A                         | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
|                     | DC_42A_n257D               | CA_3A-42E                           | CA_n257G                        | 42A                               | CA_n257D                      | No                                       |
| DC_3A-42E_n257H     | DC_3A_n257A                | CA_3A-42E                           | CA_n257H                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-42E                           | CA_n257H                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-42E                           | CA_n257H                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_3A_n257H                | CA_3A-42E                           | CA_n257H                        | 3A                                | CA_n257H                      | No                                       |
|                     | DC_42A_n257A               | CA_3A-42E                           | CA_n257H                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_3A-42E                           | CA_n257H                        | 42A                               | CA_n257D                      | No                                       |
| DC_3A-42E_n257I     | DC_3A_n257A                | CA_3A-42E                           | CA_n257I                        | 3A                                | n257A                         | No                                       |
|                     | DC_3A_n257D                | CA_3A-42E                           | CA_n257I                        | 3A                                | CA_n257D                      | No                                       |
|                     | DC_3A_n257G                | CA_3A-42E                           | CA_n257I                        | 3A                                | CA_n257G                      | No                                       |
|                     | DC_3A_n257H                | CA_3A-42E                           | CA_n257I                        | 3A                                | CA_n257H                      | No                                       |
|                     | DC_3A_n257I                | CA_3A-42E                           | CA_n257I                        | 3A                                | CA_n257I                      | No                                       |
|                     | DC_42A_n257A               | CA_3A-42E                           | CA_n257I                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_3A-42E                           | CA_n257I                        | 42A                               | CA_n257D                      | No                                       |
| DC_5A-7A_n257A      | DC_5A_n257A                | CA_5A-7A                            | n257A                           | 5A                                | n257A                         | No                                       |
| DC_5A-30A_n260A     | DC_7A_n257A                | CA_5A-7A                            | n257A                           | 7A                                | n257A                         | No                                       |
|                     | DC_5A_n260A                | CA_5A-30A                           | n260A                           | 5A                                | n260A                         | No                                       |
| DC_5A-66A_n257A     | DC_30A_n260A               | CA_5A-30A                           | n260A                           | 30A                               | n260A                         | No                                       |
|                     | DC_5A_n257A                | CA_5A-66A                           | n257A                           | 5A                                | n257A                         | No                                       |
| DC_5A-66A_n260A     | DC_66A_n257A               | CA_5A-66A                           | n257A                           | 66A                               | n257A                         | No                                       |
|                     | DC_5A_n260A                | CA_5A-66A                           | n260A                           | 5A                                | n260A                         | No                                       |
| DC_12A-30A_n260A    | DC_66A_n260A               | CA_5A-66A                           | n260A                           | 66A                               | n260A                         | No                                       |
|                     | DC_12A_n260A               | CA_12A-30A                          | n260A                           | 12A                               | n260A                         | No                                       |
| DC_12A-66A_n260A    | DC_30A_n260A               | CA_12A-30A                          | n260A                           | 30A                               | n260A                         | No                                       |
|                     | DC_12A_n260A               | CA_12A-66A                          | n260A                           | 12A                               | n260A                         | No                                       |
| DC_12A-66A_n260A    | DC_66A_n260A               | CA_12A-66A                          | n260A                           | 66A                               | n260A                         | No                                       |
|                     | DC_19A_n257A               | CA_12A-66A                          | n260A                           | 12A                               | n260A                         | No                                       |
| DC_19A-21A_n257A    | DC_19A_n257A               | CA_19A-21A                          | n257A                           | 19A                               | n257A                         | No                                       |
|                     | DC_21A_n257A               | CA_19A-21A                          | n257A                           | 21A                               | n257A                         | No                                       |
| DC_19A-21A_n257G    | DC_19A_n257A               | CA_19A-21A                          | CA_n257G                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257D               | CA_19A-21A                          | CA_n257G                        | 19A                               | CA_n257D                      | No                                       |
|                     | DC_21A_n257A               | CA_19A-21A                          | CA_n257G                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257D               | CA_19A-21A                          | CA_n257G                        | 21A                               | CA_n257D                      | No                                       |
|                     | DC_21A_n257G               | CA_19A-21A                          | CA_n257G                        | 21A                               | CA_n257G                      | No                                       |
| DC_19A-21A_n257H    | DC_19A_n257A               | CA_19A-21A                          | CA_n257H                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257D               | CA_19A-21A                          | CA_n257H                        | 19A                               | CA_n257D                      | No                                       |
|                     | DC_21A_n257A               | CA_19A-21A                          | CA_n257H                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257D               | CA_19A-21A                          | CA_n257H                        | 21A                               | CA_n257D                      | No                                       |
|                     | DC_21A_n257G               | CA_19A-21A                          | CA_n257H                        | 21A                               | CA_n257G                      | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
|                     | DC_21A_n257H               | CA_19A-21A                          | CA_n257H                        | 21A                               | CA_n257H                      | No                                       |
| DC_19A-21A_n257I    | DC_19A_n257A               | CA_19A-21A                          | CA_n257I                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257D               | CA_19A-21A                          | CA_n257I                        | 19A                               | CA_n257D                      | No                                       |
|                     | DC_21A_n257A               | CA_19A-21A                          | CA_n257I                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257D               | CA_19A-21A                          | CA_n257I                        | 21A                               | CA_n257D                      | No                                       |
|                     | DC_21A_n257G               | CA_19A-21A                          | CA_n257I                        | 21A                               | CA_n257G                      | No                                       |
|                     | DC_21A_n257H               | CA_19A-21A                          | CA_n257I                        | 21A                               | CA_n257H                      | No                                       |
|                     | DC_21A_n257I               | CA_19A-21A                          | CA_n257I                        | 21A                               | CA_n257I                      | No                                       |
| DC_19A-42A_n257A    | DC_19A_n257A               | CA_19A-42A                          | n257A                           | 19A                               | n257A                         | No                                       |
|                     | DC_42A_n257A               | CA_19A-42A                          | n257A                           | 42A                               | n257A                         | No                                       |
| DC_19A-42A_n257G    | DC_19A_n257A               | CA_19A-42A                          | CA_n257G                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257D               | CA_19A-42A                          | CA_n257G                        | 19A                               | CA_n257D                      | No                                       |
|                     | DC_19A_n257G               | CA_19A-42A                          | CA_n257G                        | 19A                               | CA_n257G                      | No                                       |
|                     | DC_42A_n257A               | CA_19A-42A                          | CA_n257G                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_19A-42A                          | CA_n257G                        | 42A                               | CA_n257D                      | No                                       |
|                     | DC_42A_n257G               | CA_19A-42A                          | CA_n257G                        | 42A                               | CA_n257G                      | No                                       |
| DC_19A-42A_n257H    | DC_19A_n257A               | CA_19A-42A                          | CA_n257H                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257D               | CA_19A-42A                          | CA_n257H                        | 19A                               | CA_n257D                      | No                                       |
|                     | DC_19A_n257G               | CA_19A-42A                          | CA_n257H                        | 19A                               | CA_n257G                      | No                                       |
|                     | DC_19A_n257H               | CA_19A-42A                          | CA_n257H                        | 19A                               | CA_n257H                      | No                                       |
|                     | DC_42A_n257A               | CA_19A-42A                          | CA_n257H                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_19A-42A                          | CA_n257H                        | 42A                               | CA_n257D                      | No                                       |
|                     | DC_42A_n257G               | CA_19A-42A                          | CA_n257H                        | 42A                               | CA_n257G                      | No                                       |
|                     | DC_42A_n257H               | CA_19A-42A                          | CA_n257H                        | 42A                               | CA_n257H                      | No                                       |
| DC_19A-42A_n257I    | DC_19A_n257A               | CA_19A-42A                          | CA_n257I                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257D               | CA_19A-42A                          | CA_n257I                        | 19A                               | CA_n257D                      | No                                       |
|                     | DC_19A_n257G               | CA_19A-42A                          | CA_n257I                        | 19A                               | CA_n257G                      | No                                       |
|                     | DC_19A_n257H               | CA_19A-42A                          | CA_n257I                        | 19A                               | CA_n257H                      | No                                       |
|                     | DC_19A_n257I               | CA_19A-42A                          | CA_n257I                        | 19A                               | CA_n257I                      | No                                       |
|                     | DC_42A_n257A               | CA_19A-42A                          | CA_n257I                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_19A-42A                          | CA_n257I                        | 42A                               | CA_n257D                      | No                                       |
|                     | DC_42A_n257G               | CA_19A-42A                          | CA_n257I                        | 42A                               | CA_n257G                      | No                                       |
|                     | DC_42A_n257H               | CA_19A-42A                          | CA_n257I                        | 42A                               | CA_n257H                      | No                                       |
|                     | DC_42A_n257I               | CA_19A-42A                          | CA_n257I                        | 42A                               | CA_n257I                      | No                                       |
| DC_19A-42C_n257A    | DC_19A_n257A               | CA_19A-42C                          | n257A                           | 19A                               | n257A                         | No                                       |
|                     | DC_42A_n257A               | CA_19A-42C                          | n257A                           | 42A                               | n257A                         | No                                       |
| DC_19A-42C_n257G    | DC_19A_n257A               | CA_19A-42C                          | CA_n257G                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257D               | CA_19A-42C                          | CA_n257G                        | 19A                               | CA_n257D                      | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_19A-42C_n257H    | DC_19A_n257G               | CA_19A-42C                          | CA_n257G                        | 19A                               | CA_n257G                      | No                                       |
|                     | DC_42A_n257A               | CA_19A-42C                          | CA_n257G                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_19A-42C                          | CA_n257G                        | 42A                               | CA_n257D                      | No                                       |
|                     | DC_42A_n257G               | CA_19A-42C                          | CA_n257G                        | 42A                               | CA_n257G                      | No                                       |
| DC_19A-42C_n257H    | DC_19A_n257A               | CA_19A-42C                          | CA_n257H                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257D               | CA_19A-42C                          | CA_n257H                        | 19A                               | CA_n257D                      | No                                       |
|                     | DC_19A_n257G               | CA_19A-42C                          | CA_n257H                        | 19A                               | CA_n257G                      | No                                       |
|                     | DC_19A_n257H               | CA_19A-42C                          | CA_n257H                        | 19A                               | CA_n257H                      | No                                       |
|                     | DC_42A_n257A               | CA_19A-42C                          | CA_n257H                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_19A-42C                          | CA_n257H                        | 42A                               | CA_n257D                      | No                                       |
|                     | DC_42A_n257G               | CA_19A-42C                          | CA_n257H                        | 42A                               | CA_n257G                      | No                                       |
|                     | DC_42A_n257H               | CA_19A-42C                          | CA_n257H                        | 42A                               | CA_n257H                      | No                                       |
| DC_19A-42C_n257I    | DC_19A_n257A               | CA_19A-42C                          | CA_n257I                        | 19A                               | n257A                         | No                                       |
|                     | DC_19A_n257D               | CA_19A-42C                          | CA_n257I                        | 19A                               | CA_n257D                      | No                                       |
|                     | DC_19A_n257G               | CA_19A-42C                          | CA_n257I                        | 19A                               | CA_n257G                      | No                                       |
|                     | DC_19A_n257H               | CA_19A-42C                          | CA_n257I                        | 19A                               | CA_n257H                      | No                                       |
|                     | DC_19A_n257I               | CA_19A-42C                          | CA_n257I                        | 19A                               | CA_n257I                      | No                                       |
|                     | DC_42A_n257A               | CA_19A-42C                          | CA_n257I                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_19A-42C                          | CA_n257I                        | 42A                               | CA_n257D                      | No                                       |
|                     | DC_42A_n257G               | CA_19A-42C                          | CA_n257I                        | 42A                               | CA_n257G                      | No                                       |
|                     | DC_42A_n257H               | CA_19A-42C                          | CA_n257I                        | 42A                               | CA_n257H                      | No                                       |
|                     | DC_42A_n257I               | CA_19A-42C                          | CA_n257I                        | 42A                               | CA_n257I                      | No                                       |
| DC_21A-42A_n257A    | DC_21A_n257A               | CA_21A-42A                          | n257A                           | 21A                               | n257A                         | No                                       |
|                     | DC_42A_n257A               | CA_21A-42A                          | n257A                           | 42A                               | n257A                         | No                                       |
| DC_21A-42A_n257G    | DC_21A_n257A               | CA_21A-42A                          | CA_n257G                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257D               | CA_21A-42A                          | CA_n257G                        | 21A                               | CA_n257D                      | No                                       |
|                     | DC_42A_n257A               | CA_21A-42A                          | CA_n257G                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_21A-42A                          | CA_n257G                        | 42A                               | CA_n257D                      | No                                       |
|                     | DC_21A_n257G               | CA_21A-42A                          | CA_n257G                        | 21A                               | CA_n257G                      | No                                       |
| DC_21A-42A_n257H    | DC_21A_n257A               | CA_21A-42A                          | CA_n257H                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257D               | CA_21A-42A                          | CA_n257H                        | 21A                               | CA_n257D                      | No                                       |
|                     | DC_42A_n257A               | CA_21A-42A                          | CA_n257H                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_21A-42A                          | CA_n257H                        | 42A                               | CA_n257D                      | No                                       |
|                     | DC_21A_n257G               | CA_21A-42A                          | CA_n257H                        | 21A                               | CA_n257G                      | No                                       |
|                     | DC_21A_n257H               | CA_21A-42A                          | CA_n257H                        | 21A                               | CA_n257H                      | No                                       |
| DC_21A-42A_n257I    | DC_21A_n257A               | CA_21A-42A                          | CA_n257I                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257D               | CA_21A-42A                          | CA_n257I                        | 21A                               | CA_n257D                      | No                                       |
|                     | DC_42A_n257A               | CA_21A-42A                          | CA_n257I                        | 42A                               | n257A                         | No                                       |

| EN-DC configuration | Uplink EN-DC Configuration | EN-DC E-UTRA downlink configuration | EN-DC NR downlink configuration | EN-DC E-UTRA uplink configuration | EN-DC NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------------|---------------------------------|-----------------------------------|-------------------------------|--|
| DC_42A_n257D        | DC_42A_n257D               | CA_21A-42A                          | CA_n257I                        | 42A                               | CA_n257D                      | No                                       |
|                     | DC_21A_n257G               | CA_21A-42A                          | CA_n257I                        | 21A                               | CA_n257G                      | No                                       |
|                     | DC_21A_n257H               | CA_21A-42A                          | CA_n257I                        | 21A                               | CA_n257H                      | No                                       |
|                     | DC_21A_n257I               | CA_21A-42A                          | CA_n257I                        | 21A                               | CA_n257I                      | No                                       |
| DC_21A-42C_n257A    | DC_21A_n257A               | CA_21A-42C                          | n257A                           | 21A                               | n257A                         | No                                       |
|                     | DC_42A_n257A               | CA_21A-42C                          | n257A                           | 42A                               | n257A                         | No                                       |
| DC_21A-42C_n257G    | DC_21A_n257A               | CA_21A-42C                          | CA_n257G                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257D               | CA_21A-42C                          | CA_n257G                        | 21A                               | CA_n257D                      | No                                       |
|                     | DC_42A_n257A               | CA_21A-42C                          | CA_n257G                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_21A-42C                          | CA_n257G                        | 42A                               | CA_n257D                      | No                                       |
|                     | DC_21A_n257G               | CA_21A-42C                          | CA_n257G                        | 21A                               | CA_n257G                      | No                                       |
| DC_21A-42C_n257H    | DC_21A_n257A               | CA_21A-42C                          | CA_n257H                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257D               | CA_21A-42C                          | CA_n257H                        | 21A                               | CA_n257D                      | No                                       |
|                     | DC_42A_n257A               | CA_21A-42C                          | CA_n257H                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_21A-42C                          | CA_n257H                        | 42A                               | CA_n257D                      | No                                       |
|                     | DC_21A_n257G               | CA_21A-42C                          | CA_n257H                        | 21A                               | CA_n257G                      | No                                       |
|                     | DC_21A_n257H               | CA_21A-42C                          | CA_n257H                        | 21A                               | CA_n257H                      | No                                       |
| DC_21A-42C_n257I    | DC_21A_n257A               | CA_21A-42C                          | CA_n257I                        | 21A                               | n257A                         | No                                       |
|                     | DC_21A_n257D               | CA_21A-42C                          | CA_n257I                        | 21A                               | CA_n257D                      | No                                       |
|                     | DC_42A_n257A               | CA_21A-42C                          | CA_n257I                        | 42A                               | n257A                         | No                                       |
|                     | DC_42A_n257D               | CA_21A-42C                          | CA_n257I                        | 42A                               | CA_n257D                      | No                                       |
|                     | DC_21A_n257G               | CA_21A-42C                          | CA_n257I                        | 21A                               | CA_n257G                      | No                                       |
|                     | DC_21A_n257H               | CA_21A-42C                          | CA_n257I                        | 21A                               | CA_n257H                      | No                                       |
|                     | DC_21A_n257I               | CA_21A-42C                          | CA_n257I                        | 21A                               | CA_n257I                      | No                                       |

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

## 4.3.1.5.1.4 Inter-band EN-DC configurations including FR2 (four bands)

**Table 4.3.1.5.1.4-1: Inter-band EN-DC configurations including FR2 (four bands)**

| EN-DC Configuration | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
| DC_1A-3A-19A_n257A  | DC_1A_n257A                | CA_1A-3A-19A                  | n257A                     | 1A                          | n257A                   | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-19A                  | n257A                     | 3A                          | n257A                   | No                                       |
|                     | DC_19A_n257A               | CA_1A-3A-19A                  | n257A                     | 19A                         | n257A                   | No                                       |
| DC_1A-3A-19A_n257G  | DC_1A_n257A                | CA_1A-3A-19A                  | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-19A                  | CA_n257G                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-19A                  | CA_n257G                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-19A                  | CA_n257G                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_19A_n257A               | CA_1A-3A-19A                  | CA_n257G                  | 19A                         | n257A                   | No                                       |
| DC_1A-3A-19A_n257H  | DC_1A_n257A                | CA_1A-3A-19A                  | CA_n257H                  | 1A                          | n257A                   | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-19A                  | CA_n257H                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-19A                  | CA_n257H                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-19A                  | CA_n257H                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_1A-3A-19A                  | CA_n257H                  | 3A                          | CA_n257H                | No                                       |
|                     | DC_19A_n257A               | CA_1A-3A-19A                  | CA_n257H                  | 19A                         | n257A                   | No                                       |
| DC_1A-3A-19A_n257I  | DC_1A_n257A                | CA_1A-3A-19A                  | CA_n257I                  | 1A                          | n257A                   | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-19A                  | CA_n257I                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-19A                  | CA_n257I                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-19A                  | CA_n257I                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_1A-3A-19A                  | CA_n257I                  | 3A                          | CA_n257H                | No                                       |
|                     | DC_3A_n257I                | CA_1A-3A-19A                  | CA_n257I                  | 3A                          | CA_n257I                | No                                       |
|                     | DC_19A_n257A               | CA_1A-3A-19A                  | CA_n257I                  | 19A                         | n257A                   | No                                       |
| DC_1A-3A-21A_n257A  | DC_1A_n257A                | CA_1A-3A-21A                  | n257A                     | 1A                          | n257A                   | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-21A                  | n257A                     | 3A                          | n257A                   | No                                       |
|                     | DC_21A_n257A               | CA_1A-3A-21A                  | n257A                     | 21A                         | n257A                   | No                                       |
| DC_1A-3A-21A_n257G  | DC_1A_n257A                | CA_1A-3A-21A                  | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-21A                  | CA_n257G                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-21A                  | CA_n257G                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_21A_n257A               | CA_1A-3A-21A                  | CA_n257G                  | 21A                         | n257A                   | No                                       |
| DC_1A-3A-21A_n257H  | DC_1A_n257A                | CA_1A-3A-21A                  | CA_n257H                  | 1A                          | n257A                   | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-21A                  | CA_n257H                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-21A                  | CA_n257H                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_1A-3A-21A                  | CA_n257H                  | 3A                          | CA_n257H                | No                                       |
|                     | DC_21A_n257A               | CA_1A-3A-21A                  | CA_n257H                  | 21A                         | n257A                   | No                                       |
| DC_1A-3A-21A_n257I  | DC_1A_n257A                | CA_1A-3A-21A                  | CA_n257I                  | 1A                          | n257A                   | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-21A                  | CA_n257I                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-21A                  | CA_n257I                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_1A-3A-21A                  | CA_n257I                  | 3A                          | CA_n257H                | No                                       |
|                     | DC_3A_n257I                | CA_1A-3A-21A                  | CA_n257I                  | 3A                          | CA_n257I                | No                                       |
|                     | DC_21A_n257A               | CA_1A-3A-21A                  | CA_n257I                  | 21A                         | n257A                   | No                                       |
| DC_1A-3A-42A_n257A  | DC_1A_n257A                | CA_1A-3A-42A                  | n257A                     | 1A                          | n257A                   | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-42A                  | n257A                     | 3A                          | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_1A-3A-42A                  | n257A                     | 42A                         | n257A                   | No                                       |
| DC_1A-3A-42A_n257G  | DC_1A_n257A                | CA_1A-3A-42A                  | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-3A-42A                  | CA_n257G                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-42A                  | CA_n257G                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-42A                  | CA_n257G                  | 3A                          | CA_n257G                | No                                       |
| DC_1A-3A-           | DC_1A_n257A                | CA_1A-3A-42A                  | CA_n257H                  | 1A                          | n257A                   | No                                       |

| EN-DC Configuration | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
| 42A_n257H           |                            |                               |                           |                             |                         |  |
|                     | DC_1A_n257G                | CA_1A-3A-42A                  | CA_n257H                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_1A_n257H                | CA_1A-3A-42A                  | CA_n257H                  | 1A                          | CA_n257H                | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-42A                  | CA_n257H                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-42A                  | CA_n257H                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_1A-3A-42A                  | CA_n257H                  | 3A                          | CA_n257H                | No                                       |
| DC_1A-3A-42A_n257I  | DC_1A_n257A                | CA_1A-3A-42A                  | CA_n257I                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-3A-42A                  | CA_n257I                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_1A_n257H                | CA_1A-3A-42A                  | CA_n257I                  | 1A                          | CA_n257H                | No                                       |
|                     | DC_1A_n257I                | CA_1A-3A-42A                  | CA_n257I                  | 1A                          | CA_n257I                | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-42A                  | CA_n257I                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-42A                  | CA_n257I                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_1A-3A-42A                  | CA_n257I                  | 3A                          | CA_n257H                | No                                       |
|                     | DC_3A_n257I                | CA_1A-3A-42A                  | CA_n257I                  | 3A                          | CA_n257I                | No                                       |
| DC_1A-3A-42C_n257A  | DC_1A_n257A                | CA_1A-3A-42C                  | n257A                     | 1A                          | n257A                   | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-42C                  | n257A                     | 3A                          | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_1A-3A-42C                  | n257A                     | 42A                         | n257A                   | No                                       |
| DC_1A-3A-42C_n257G  | DC_1A_n257A                | CA_1A-3A-42C                  | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-3A-42C                  | CA_n257G                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-42C                  | CA_n257G                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-42C                  | CA_n257G                  | 3A                          | CA_n257G                | No                                       |
| DC_1A-3A-42C_n257H  | DC_1A_n257A                | CA_1A-3A-42C                  | CA_n257H                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-3A-42C                  | CA_n257H                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_1A_n257H                | CA_1A-3A-42C                  | CA_n257H                  | 1A                          | CA_n257H                | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-42C                  | CA_n257H                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-42C                  | CA_n257H                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_1A-3A-42C                  | CA_n257H                  | 3A                          | CA_n257H                | No                                       |
| DC_1A-3A-42C_n257I  | DC_1A_n257A                | CA_1A-3A-42C                  | CA_n257I                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-3A-42C                  | CA_n257I                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_1A_n257H                | CA_1A-3A-42C                  | CA_n257I                  | 1A                          | CA_n257H                | No                                       |
|                     | DC_1A_n257I                | CA_1A-3A-42C                  | CA_n257I                  | 1A                          | CA_n257I                | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-42C                  | CA_n257I                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-42C                  | CA_n257I                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_1A-3A-42C                  | CA_n257I                  | 3A                          | CA_n257H                | No                                       |
| DC_1A-3A-42D_n257G  | DC_1A_n257A                | CA_1A-3A-42D                  | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-3A-42D                  | CA_n257G                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-42D                  | CA_n257G                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-42D                  | CA_n257G                  | 3A                          | CA_n257G                | No                                       |
| DC_1A-3A-42D_n257H  | DC_1A_n257A                | CA_1A-3A-42D                  | CA_n257H                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-3A-42D                  | CA_n257H                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_1A_n257H                | CA_1A-3A-42D                  | CA_n257H                  | 1A                          | CA_n257H                | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-42D                  | CA_n257H                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-42D                  | CA_n257H                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_1A-3A-42D                  | CA_n257H                  | 3A                          | CA_n257H                | No                                       |
| DC_1A-3A-42D_n257I  | DC_1A_n257A                | CA_1A-3A-42D                  | CA_n257I                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-3A-42D                  | CA_n257I                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_1A_n257H                | CA_1A-3A-42D                  | CA_n257I                  | 1A                          | CA_n257H                | No                                       |
|                     | DC_1A_n257I                | CA_1A-3A-42D                  | CA_n257I                  | 1A                          | CA_n257I                | No                                       |
|                     | DC_3A_n257A                | CA_1A-3A-42D                  | CA_n257I                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257G                | CA_1A-3A-42D                  | CA_n257I                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_1A-3A-42D                  | CA_n257I                  | 3A                          | CA_n257H                | No                                       |
|                     | DC_3A_n257I                | CA_1A-3A-42D                  | CA_n257I                  | 3A                          | CA_n257I                | No                                       |
| DC_1A-19A-          | DC_1A_n257A                | CA_1A-19A-21A                 | n257A                     | 1A                          | n257A                   | No                                       |

| EN-DC Configuration | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
| 21A_n257A           |                            |                               |                           |                             |                         |  |
|                     | DC_19A_n257A               | CA_1A-19A-21A                 | n257A                     | 19A                         | n257A                   | No                                       |
|                     | DC_21A_n257A               | CA_1A-19A-21A                 | n257A                     | 21A                         | n257A                   | No                                       |
| DC_1A-19A-21A_n257G | DC_1A_n257A                | CA_1A-19A-21A                 | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-19A-21A                 | CA_n257G                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_19A_n257A               | CA_1A-19A-21A                 | CA_n257G                  | 19A                         | n257A                   | No                                       |
|                     | DC_21A_n257A               | CA_1A-19A-21A                 | CA_n257G                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257G               | CA_1A-19A-21A                 | CA_n257G                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_1A_n257A                | CA_1A-19A-21A                 | CA_n257H                  | 1A                          | n257A                   | No                                       |
| DC_1A-19A-21A_n257H | DC_1A_n257G                | CA_1A-19A-21A                 | CA_n257H                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_1A_n257H                | CA_1A-19A-21A                 | CA_n257H                  | 1A                          | CA_n257H                | No                                       |
|                     | DC_19A_n257A               | CA_1A-19A-21A                 | CA_n257H                  | 19A                         | n257A                   | No                                       |
|                     | DC_21A_n257A               | CA_1A-19A-21A                 | CA_n257H                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257G               | CA_1A-19A-21A                 | CA_n257H                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_21A_n257H               | CA_1A-19A-21A                 | CA_n257H                  | 21A                         | CA_n257H                | No                                       |
|                     | DC_1A_n257A                | CA_1A-19A-21A                 | CA_n257I                  | 1A                          | n257A                   | No                                       |
| DC_1A-19A-21A_n257I | DC_1A_n257G                | CA_1A-19A-21A                 | CA_n257I                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_1A_n257H                | CA_1A-19A-21A                 | CA_n257I                  | 1A                          | CA_n257H                | No                                       |
|                     | DC_1A_n257I                | CA_1A-19A-21A                 | CA_n257I                  | 1A                          | CA_n257I                | No                                       |
|                     | DC_19A_n257A               | CA_1A-19A-21A                 | CA_n257I                  | 19A                         | n257A                   | No                                       |
|                     | DC_21A_n257A               | CA_1A-19A-21A                 | CA_n257I                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257G               | CA_1A-19A-21A                 | CA_n257I                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_21A_n257H               | CA_1A-19A-21A                 | CA_n257I                  | 21A                         | CA_n257H                | No                                       |
|                     | DC_21A_n257I               | CA_1A-19A-21A                 | CA_n257I                  | 21A                         | CA_n257I                | No                                       |
|                     | DC_1A_n257A                | CA_1A-19A-42A                 | n257A                     | 1A                          | n257A                   | No                                       |
| DC_1A-19A-42A_n257A | DC_19A_n257A               | CA_1A-19A-42A                 | n257A                     | 19A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_1A-19A-42A                 | n257A                     | 42A                         | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-19A-42A                 | CA_n257G                  | 1A                          | n257A                   | No                                       |
| DC_1A-19A-42A_n257G | DC_19A_n257A               | CA_1A-19A-42A                 | CA_n257G                  | 19A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_1A-19A-42A                 | CA_n257G                  | 42A                         | n257A                   | No                                       |
|                     | DC_1A_n257A                | CA_1A-19A-42A                 | CA_n257H                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-19A-42A                 | CA_n257H                  | 1A                          | CA_n257G                | No                                       |
| DC_1A-19A-42A_n257H | DC_19A_n257A               | CA_1A-19A-42A                 | CA_n257H                  | 19A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_1A-19A-42A                 | CA_n257H                  | 42A                         | n257A                   | No                                       |
|                     | DC_1A_n257A                | CA_1A-19A-42A                 | CA_n257H                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-19A-42A                 | CA_n257H                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_1A_n257I                | CA_1A-19A-42A                 | CA_n257H                  | 1A                          | CA_n257I                | No                                       |
| DC_1A-19A-42A_n257I | DC_19A_n257A               | CA_1A-19A-42A                 | CA_n257I                  | 19A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_1A-19A-42A                 | CA_n257I                  | 42A                         | n257A                   | No                                       |
|                     | DC_1A_n257A                | CA_1A-19A-42C                 | n257A                     | 1A                          | n257A                   | No                                       |
|                     | DC_19A_n257A               | CA_1A-19A-42C                 | n257A                     | 19A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_1A-19A-42C                 | n257A                     | 42A                         | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-19A-42C                 | CA_n257G                  | 1A                          | n257A                   | No                                       |
| DC_1A-19A-42C_n257G | DC_19A_n257A               | CA_1A-19A-42C                 | CA_n257G                  | 19A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_1A-19A-42C                 | CA_n257G                  | 42A                         | n257A                   | No                                       |
|                     | DC_1A_n257A                | CA_1A-19A-42C                 | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-19A-42C                 | CA_n257G                  | 1A                          | CA_n257G                | No                                       |
| DC_1A-19A-42C_n257H | DC_19A_n257A               | CA_1A-19A-42C                 | CA_n257G                  | 19A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_1A-19A-42C                 | CA_n257G                  | 42A                         | n257A                   | No                                       |
|                     | DC_1A_n257A                | CA_1A-19A-42C                 | CA_n257H                  | 1A                          | n257A                   | No                                       |
| DC_1A-19A-42C_n257I | DC_19A_n257A               | CA_1A-19A-42C                 | CA_n257H                  | 19A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_1A-19A-42C                 | CA_n257H                  | 42A                         | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-19A-42C                 | CA_n257H                  | 1A                          | CA_n257G                | No                                       |

| EN-DC Configuration | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
|                     | DC_19A_n257A               | CA_1A-19A-42C                 | CA_n257H                  | 19A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_1A-19A-42C                 | CA_n257H                  | 42A                         | n257A                   | No                                       |
| DC_1A-19A-42C_n257I | DC_1A_n257A                | CA_1A-19A-42C                 | CA_n257I                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-19A-42C                 | CA_n257I                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_1A_n257H                | CA_1A-19A-42C                 | CA_n257I                  | 1A                          | CA_n257H                | No                                       |
|                     | DC_1A_n257I                | CA_1A-19A-42C                 | CA_n257I                  | 1A                          | CA_n257I                | No                                       |
|                     | DC_19A_n257A               | CA_1A-19A-42C                 | CA_n257I                  | 19A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_1A-19A-42C                 | CA_n257I                  | 42A                         | n257A                   | No                                       |
| DC_1A-21A-42A_n257A | DC_1A_n257A                | CA_1A-21A-42A                 | n257A                     | 1A                          | n257A                   | No                                       |
|                     | DC_21A_n257A               | CA_1A-21A-42A                 | n257A                     | 21A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_1A-21A-42A                 | n257A                     | 42A                         | n257A                   | No                                       |
| DC_1A-21A-42A_n257G | DC_1A_n257A                | CA_1A-21A-42A                 | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-21A-42A                 | CA_n257G                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_21A_n257A               | CA_1A-21A-42A                 | CA_n257G                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257G               | CA_1A-21A-42A                 | CA_n257G                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_42A_n257A               | CA_1A-21A-42A                 | CA_n257G                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_1A-21A-42A                 | CA_n257G                  | 42A                         | CA_n257D                | No                                       |
| DC_1A-21A-42A_n257H | DC_1A_n257A                | CA_1A-21A-42A                 | CA_n257H                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-21A-42A                 | CA_n257H                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_1A_n257H                | CA_1A-21A-42A                 | CA_n257H                  | 1A                          | CA_n257H                | No                                       |
|                     | DC_21A_n257A               | CA_1A-21A-42A                 | CA_n257H                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257G               | CA_1A-21A-42A                 | CA_n257H                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_21A_n257H               | CA_1A-21A-42A                 | CA_n257H                  | 21A                         | CA_n257H                | No                                       |
|                     | DC_42A_n257A               | CA_1A-21A-42A                 | CA_n257H                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_1A-21A-42A                 | CA_n257H                  | 42A                         | CA_n257D                | No                                       |
| DC_1A-21A-42A_n257I | DC_1A_n257A                | CA_1A-21A-42A                 | CA_n257I                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-21A-42A                 | CA_n257I                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_1A_n257H                | CA_1A-21A-42A                 | CA_n257I                  | 1A                          | CA_n257H                | No                                       |
|                     | DC_1A_n257I                | CA_1A-21A-42A                 | CA_n257I                  | 1A                          | CA_n257I                | No                                       |
|                     | DC_21A_n257A               | CA_1A-21A-42A                 | CA_n257I                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257G               | CA_1A-21A-42A                 | CA_n257I                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_21A_n257H               | CA_1A-21A-42A                 | CA_n257I                  | 21A                         | CA_n257H                | No                                       |
|                     | DC_21A_n257I               | CA_1A-21A-42A                 | CA_n257I                  | 21A                         | CA_n257I                | No                                       |
|                     | DC_42A_n257A               | CA_1A-21A-42A                 | CA_n257I                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_1A-21A-42A                 | CA_n257I                  | 42A                         | CA_n257D                | No                                       |
| DC_1A-21A-42C_n257A | DC_1A_n257A                | CA_1A-21A-42C                 | n257A                     | 1A                          | n257A                   | No                                       |
|                     | DC_21A_n257A               | CA_1A-21A-42C                 | n257A                     | 21A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_1A-21A-42C                 | n257A                     | 42A                         | n257A                   | No                                       |
| DC_1A-21A-42C_n257G | DC_1A_n257A                | CA_1A-21A-42C                 | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-21A-42C                 | CA_n257G                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_21A_n257A               | CA_1A-21A-42C                 | CA_n257G                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257G               | CA_1A-21A-42C                 | CA_n257G                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_42A_n257A               | CA_1A-21A-42C                 | CA_n257G                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_1A-21A-42C                 | CA_n257G                  | 42A                         | CA_n257D                | No                                       |
| DC_1A-21A-42C_n257H | DC_1A_n257A                | CA_1A-21A-42C                 | CA_n257H                  | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n257G                | CA_1A-21A-42C                 | CA_n257H                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_1A_n257H                | CA_1A-21A-42C                 | CA_n257H                  | 1A                          | CA_n257H                | No                                       |
|                     | DC_21A_n257A               | CA_1A-21A-42C                 | CA_n257H                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257G               | CA_1A-21A-42C                 | CA_n257H                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_21A_n257H               | CA_1A-21A-42C                 | CA_n257H                  | 21A                         | CA_n257H                | No                                       |
|                     | DC_42A_n257A               | CA_1A-21A-42C                 | CA_n257H                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_1A-21A-42C                 | CA_n257H                  | 42A                         | CA_n257D                | No                                       |
| DC_1A-21A-42C_n257I | DC_1A_n257A                | CA_1A-21A-42C                 | CA_n257I                  | 1A                          | n257A                   | No                                       |

| EN-DC Configuration | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
|                     | DC_1A_n257G                | CA_1A-21A-42C                 | CA_n257I                  | 1A                          | CA_n257G                | No                                       |
|                     | DC_1A_n257H                | CA_1A-21A-42C                 | CA_n257I                  | 1A                          | CA_n257H                | No                                       |
|                     | DC_1A_n257I                | CA_1A-21A-42C                 | CA_n257I                  | 1A                          | CA_n257I                | No                                       |
|                     | DC_21A_n257A               | CA_1A-21A-42C                 | CA_n257I                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257G               | CA_1A-21A-42C                 | CA_n257I                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_21A_n257H               | CA_1A-21A-42C                 | CA_n257I                  | 21A                         | CA_n257H                | No                                       |
|                     | DC_21A_n257I               | CA_1A-21A-42C                 | CA_n257I                  | 21A                         | CA_n257I                | No                                       |
|                     | DC_42A_n257A               | CA_1A-21A-42C                 | CA_n257I                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_1A-21A-42C                 | CA_n257I                  | 42A                         | CA_n257D                | No                                       |
| DC_3A-19A-21A_n257A | DC_3A_n257A                | CA_3A-19A-21A                 | n257A                     | 3A                          | n257A                   | No                                       |
|                     | DC_19A_n257A               | CA_3A-19A-21A                 | n257A                     | 19A                         | n257A                   | No                                       |
|                     | DC_21A_n257A               | CA_3A-19A-21A                 | n257A                     | 21A                         | n257A                   | No                                       |
| DC_3A-19A-42A_n257A | DC_3A_n257A                | CA_3A-19A-42A                 | n257A                     | 3A                          | n257A                   | No                                       |
|                     | DC_19A_n257A               | CA_3A-19A-42A                 | n257A                     | 19A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_3A-19A-42A                 | n257A                     | 42A                         | n257A                   | No                                       |
| DC_3A-19A-42A_n257G | DC_3A_n257A                | CA_3A-19A-42A                 | CA_n257G                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257D                | CA_3A-19A-42A                 | CA_n257G                  | 3A                          | CA_n257D                | No                                       |
|                     | DC_3A_n257G                | CA_3A-19A-42A                 | CA_n257G                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_19A_n257A               | CA_3A-19A-42A                 | CA_n257G                  | 19A                         | n257A                   | No                                       |
|                     | DC_19A_n257D               | CA_3A-19A-42A                 | CA_n257G                  | 19A                         | CA_n257D                | No                                       |
|                     | DC_19A_n257G               | CA_3A-19A-42A                 | CA_n257G                  | 19A                         | CA_n257G                | No                                       |
|                     | DC_42A_n257A               | CA_3A-19A-42A                 | CA_n257G                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_3A-19A-42A                 | CA_n257G                  | 42A                         | CA_n257D                | No                                       |
|                     | DC_42A_n257G               | CA_3A-19A-42A                 | CA_n257G                  | 42A                         | CA_n257G                | No                                       |
| DC_3A-19A-42A_n257H | DC_3A_n257A                | CA_3A-19A-42A                 | CA_n257H                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257D                | CA_3A-19A-42A                 | CA_n257H                  | 3A                          | CA_n257D                | No                                       |
|                     | DC_3A_n257G                | CA_3A-19A-42A                 | CA_n257H                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_3A-19A-42A                 | CA_n257H                  | 3A                          | CA_n257H                | No                                       |
|                     | DC_19A_n257A               | CA_3A-19A-42A                 | CA_n257H                  | 19A                         | n257A                   | No                                       |
|                     | DC_19A_n257D               | CA_3A-19A-42A                 | CA_n257H                  | 19A                         | CA_n257D                | No                                       |
|                     | DC_19A_n257G               | CA_3A-19A-42A                 | CA_n257H                  | 19A                         | CA_n257G                | No                                       |
|                     | DC_19A_n257H               | CA_3A-19A-42A                 | CA_n257H                  | 19A                         | CA_n257H                | No                                       |
|                     | DC_42A_n257A               | CA_3A-19A-42A                 | CA_n257H                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_3A-19A-42A                 | CA_n257H                  | 42A                         | CA_n257D                | No                                       |
|                     | DC_42A_n257G               | CA_3A-19A-42A                 | CA_n257H                  | 42A                         | CA_n257G                | No                                       |
|                     | DC_42A_n257H               | CA_3A-19A-42A                 | CA_n257H                  | 42A                         | CA_n257H                | No                                       |
| DC_3A-19A-42A_n257I | DC_3A_n257A                | CA_3A-19A-42A                 | CA_n257I                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257D                | CA_3A-19A-42A                 | CA_n257I                  | 3A                          | CA_n257D                | No                                       |
|                     | DC_3A_n257G                | CA_3A-19A-42A                 | CA_n257I                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_3A-19A-42A                 | CA_n257I                  | 3A                          | CA_n257H                | No                                       |
|                     | DC_3A_n257I                | CA_3A-19A-42A                 | CA_n257I                  | 3A                          | CA_n257I                | No                                       |
|                     | DC_19A_n257A               | CA_3A-19A-42A                 | CA_n257I                  | 19A                         | n257A                   | No                                       |
|                     | DC_19A_n257D               | CA_3A-19A-42A                 | CA_n257I                  | 19A                         | CA_n257D                | No                                       |
|                     | DC_19A_n257G               | CA_3A-19A-42A                 | CA_n257I                  | 19A                         | CA_n257G                | No                                       |
|                     | DC_19A_n257H               | CA_3A-19A-42A                 | CA_n257I                  | 19A                         | CA_n257H                | No                                       |
|                     | DC_19A_n257I               | CA_3A-19A-42A                 | CA_n257I                  | 19A                         | CA_n257I                | No                                       |
|                     | DC_42A_n257A               | CA_3A-19A-42A                 | CA_n257I                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_3A-19A-42A                 | CA_n257I                  | 42A                         | CA_n257D                | No                                       |
| DC_3A-19A-42C_n257A | DC_3A_n257A                | CA_3A-19A-42C                 | n257A                     | 3A                          | n257A                   | No                                       |
|                     | DC_19A_n257A               | CA_3A-19A-42C                 | n257A                     | 19A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_3A-19A-42C                 | n257A                     | 42A                         | n257A                   | No                                       |
| DC_3A-19A-42C_n257G | DC_3A_n257A                | CA_3A-19A-42C                 | CA_n257G                  | 3A                          | n257A                   | No                                       |

| EN-DC Configuration | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
|                     | DC_3A_n257D                | CA_3A-19A-42C                 | CA_n257G                  | 3A                          | CA_n257D                | No                                       |
|                     | DC_3A_n257G                | CA_3A-19A-42C                 | CA_n257G                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_19A_n257A               | CA_3A-19A-42C                 | CA_n257G                  | 19A                         | n257A                   | No                                       |
|                     | DC_19A_n257D               | CA_3A-19A-42C                 | CA_n257G                  | 19A                         | CA_n257D                | No                                       |
|                     | DC_19A_n257G               | CA_3A-19A-42C                 | CA_n257G                  | 19A                         | CA_n257G                | No                                       |
|                     | DC_42A_n257A               | CA_3A-19A-42C                 | CA_n257G                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_3A-19A-42C                 | CA_n257G                  | 42A                         | CA_n257D                | No                                       |
|                     | DC_42A_n257G               | CA_3A-19A-42C                 | CA_n257G                  | 42A                         | CA_n257G                | No                                       |
| DC_3A-19A-42C_n257H | DC_3A_n257A                | CA_3A-19A-42C                 | CA_n257H                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257D                | CA_3A-19A-42C                 | CA_n257H                  | 3A                          | CA_n257D                | No                                       |
|                     | DC_3A_n257G                | CA_3A-19A-42C                 | CA_n257H                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_3A-19A-42C                 | CA_n257H                  | 3A                          | CA_n257H                | No                                       |
|                     | DC_19A_n257A               | CA_3A-19A-42C                 | CA_n257H                  | 19A                         | n257A                   | No                                       |
|                     | DC_19A_n257D               | CA_3A-19A-42C                 | CA_n257H                  | 19A                         | CA_n257D                | No                                       |
|                     | DC_19A_n257G               | CA_3A-19A-42C                 | CA_n257H                  | 19A                         | CA_n257G                | No                                       |
|                     | DC_19A_n257H               | CA_3A-19A-42C                 | CA_n257H                  | 19A                         | CA_n257H                | No                                       |
|                     | DC_42A_n257A               | CA_3A-19A-42C                 | CA_n257H                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_3A-19A-42C                 | CA_n257H                  | 42A                         | CA_n257D                | No                                       |
|                     | DC_42A_n257G               | CA_3A-19A-42C                 | CA_n257H                  | 42A                         | CA_n257G                | No                                       |
|                     | DC_42A_n257H               | CA_3A-19A-42C                 | CA_n257H                  | 42A                         | CA_n257H                | No                                       |
| DC_3A-19A-42C_n257I | DC_3A_n257A                | CA_3A-19A-42C                 | CA_n257I                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257D                | CA_3A-19A-42C                 | CA_n257I                  | 3A                          | CA_n257D                | No                                       |
|                     | DC_3A_n257G                | CA_3A-19A-42C                 | CA_n257I                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_3A-19A-42C                 | CA_n257I                  | 3A                          | CA_n257H                | No                                       |
|                     | DC_3A_n257I                | CA_3A-19A-42C                 | CA_n257I                  | 3A                          | CA_n257I                | No                                       |
|                     | DC_19A_n257A               | CA_3A-19A-42C                 | CA_n257I                  | 19A                         | n257A                   | No                                       |
|                     | DC_19A_n257D               | CA_3A-19A-42C                 | CA_n257I                  | 19A                         | CA_n257D                | No                                       |
|                     | DC_19A_n257G               | CA_3A-19A-42C                 | CA_n257I                  | 19A                         | CA_n257G                | No                                       |
|                     | DC_19A_n257H               | CA_3A-19A-42C                 | CA_n257I                  | 19A                         | CA_n257H                | No                                       |
|                     | DC_19A_n257I               | CA_3A-19A-42C                 | CA_n257I                  | 19A                         | CA_n257I                | No                                       |
|                     | DC_42A_n257A               | CA_3A-19A-42C                 | CA_n257I                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_3A-19A-42C                 | CA_n257I                  | 42A                         | CA_n257D                | No                                       |
|                     | DC_42A_n257G               | CA_3A-19A-42C                 | CA_n257I                  | 42A                         | CA_n257G                | No                                       |
|                     | DC_42A_n257H               | CA_3A-19A-42C                 | CA_n257I                  | 42A                         | CA_n257H                | No                                       |
|                     | DC_42A_n257I               | CA_3A-19A-42C                 | CA_n257I                  | 42A                         | CA_n257I                | No                                       |
| DC_3A-21A-42A_n257A | DC_3A_n257A                | CA_3A-21A-42A                 | n257A                     | 3A                          | n257A                   | No                                       |
|                     | DC_21A_n257A               | CA_3A-21A-42A                 | n257A                     | 21A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_3A-21A-42A                 | n257A                     | 42A                         | n257A                   | No                                       |
| DC_3A-21A-42A_n257G | DC_3A_n257A                | CA_3A-21A-42A                 | CA_n257G                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257D                | CA_3A-21A-42A                 | CA_n257G                  | 3A                          | CA_n257D                | No                                       |
|                     | DC_3A_n257G                | CA_3A-21A-42A                 | CA_n257G                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_21A_n257A               | CA_3A-21A-42A                 | CA_n257G                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257D               | CA_3A-21A-42A                 | CA_n257G                  | 21A                         | CA_n257D                | No                                       |
|                     | DC_21A_n257G               | CA_3A-21A-42A                 | CA_n257G                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_42A_n257A               | CA_3A-21A-42A                 | CA_n257G                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_3A-21A-42A                 | CA_n257G                  | 42A                         | CA_n257D                | No                                       |
|                     | DC_42A_n257G               | CA_3A-21A-42A                 | CA_n257G                  | 42A                         | CA_n257G                | No                                       |
| DC_3A-21A-42A_n257H | DC_3A_n257A                | CA_3A-21A-42A                 | CA_n257H                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257D                | CA_3A-21A-42A                 | CA_n257H                  | 3A                          | CA_n257D                | No                                       |
|                     | DC_3A_n257G                | CA_3A-21A-42A                 | CA_n257H                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_3A-21A-42A                 | CA_n257H                  | 3A                          | CA_n257H                | No                                       |
|                     | DC_21A_n257A               | CA_3A-21A-42A                 | CA_n257H                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257D               | CA_3A-21A-42A                 | CA_n257H                  | 21A                         | CA_n257D                | No                                       |
|                     | DC_21A_n257G               | CA_3A-21A-42A                 | CA_n257H                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_21A_n257H               | CA_3A-21A-42A                 | CA_n257H                  | 21A                         | CA_n257H                | No                                       |
|                     | DC_42A_n257A               | CA_3A-21A-42A                 | CA_n257H                  | 42A                         | n257A                   | No                                       |

| EN-DC Configuration | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
|                     | DC_42A_n257D               | CA_3A-21A-42A                 | CA_n257H                  | 42A                         | CA_n257D                | No                                       |
|                     | DC_42A_n257G               | CA_3A-21A-42A                 | CA_n257H                  | 42A                         | CA_n257G                | No                                       |
|                     | DC_42A_n257H               | CA_3A-21A-42A                 | CA_n257H                  | 42A                         | CA_n257H                | No                                       |
| DC_3A-21A-42A_n257I | DC_3A_n257A                | CA_3A-21A-42A                 | CA_n257I                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257D                | CA_3A-21A-42A                 | CA_n257I                  | 3A                          | CA_n257D                | No                                       |
|                     | DC_3A_n257G                | CA_3A-21A-42A                 | CA_n257I                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_3A-21A-42A                 | CA_n257I                  | 3A                          | CA_n257H                | No                                       |
|                     | DC_3A_n257I                | CA_3A-21A-42A                 | CA_n257I                  | 3A                          | CA_n257I                | No                                       |
|                     | DC_21A_n257A               | CA_3A-21A-42A                 | CA_n257I                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257D               | CA_3A-21A-42A                 | CA_n257I                  | 21A                         | CA_n257D                | No                                       |
|                     | DC_21A_n257G               | CA_3A-21A-42A                 | CA_n257I                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_21A_n257H               | CA_3A-21A-42A                 | CA_n257I                  | 21A                         | CA_n257H                | No                                       |
|                     | DC_21A_n257I               | CA_3A-21A-42A                 | CA_n257I                  | 21A                         | CA_n257I                | No                                       |
|                     | DC_42A_n257A               | CA_3A-21A-42A                 | CA_n257I                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_3A-21A-42A                 | CA_n257I                  | 42A                         | CA_n257D                | No                                       |
|                     | DC_42A_n257G               | CA_3A-21A-42A                 | CA_n257I                  | 42A                         | CA_n257G                | No                                       |
|                     | DC_42A_n257H               | CA_3A-21A-42A                 | CA_n257I                  | 42A                         | CA_n257H                | No                                       |
|                     | DC_42A_n257I               | CA_3A-21A-42A                 | CA_n257I                  | 42A                         | CA_n257I                | No                                       |
| DC_3A-21A-42C_n257A | DC_3A_n257A                | CA_3A-21A-42C                 | n257A                     | 3A                          | n257A                   | No                                       |
|                     | DC_21A_n257A               | CA_3A-21A-42C                 | n257A                     | 21A                         | n257A                   | No                                       |
|                     | DC_42A_n257A               | CA_3A-21A-42C                 | n257A                     | 42A                         | n257A                   | No                                       |
| DC_3A-21A-42C_n257G | DC_3A_n257A                | CA_3A-21A-42C                 | CA_n257G                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257D                | CA_3A-21A-42C                 | CA_n257G                  | 3A                          | CA_n257D                | No                                       |
|                     | DC_3A_n257G                | CA_3A-21A-42C                 | CA_n257G                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_21A_n257A               | CA_3A-21A-42C                 | CA_n257G                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257D               | CA_3A-21A-42C                 | CA_n257G                  | 21A                         | CA_n257D                | No                                       |
|                     | DC_21A_n257G               | CA_3A-21A-42C                 | CA_n257G                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_42A_n257A               | CA_3A-21A-42C                 | CA_n257G                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_3A-21A-42C                 | CA_n257G                  | 42A                         | CA_n257D                | No                                       |
|                     | DC_42A_n257G               | CA_3A-21A-42C                 | CA_n257G                  | 42A                         | CA_n257G                | No                                       |
|                     | DC_42A_n257H               | CA_3A-21A-42C                 | CA_n257G                  | 42A                         | CA_n257G                | No                                       |
| DC_3A-21A-42C_n257H | DC_3A_n257A                | CA_3A-21A-42C                 | CA_n257H                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257D                | CA_3A-21A-42C                 | CA_n257H                  | 3A                          | CA_n257D                | No                                       |
|                     | DC_3A_n257G                | CA_3A-21A-42C                 | CA_n257H                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_3A-21A-42C                 | CA_n257H                  | 3A                          | CA_n257H                | No                                       |
|                     | DC_21A_n257A               | CA_3A-21A-42C                 | CA_n257H                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257D               | CA_3A-21A-42C                 | CA_n257H                  | 21A                         | CA_n257D                | No                                       |
|                     | DC_21A_n257G               | CA_3A-21A-42C                 | CA_n257H                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_21A_n257H               | CA_3A-21A-42C                 | CA_n257H                  | 21A                         | CA_n257H                | No                                       |
|                     | DC_42A_n257A               | CA_3A-21A-42C                 | CA_n257H                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_3A-21A-42C                 | CA_n257H                  | 42A                         | CA_n257D                | No                                       |
|                     | DC_42A_n257G               | CA_3A-21A-42C                 | CA_n257H                  | 42A                         | CA_n257G                | No                                       |
|                     | DC_42A_n257H               | CA_3A-21A-42C                 | CA_n257H                  | 42A                         | CA_n257H                | No                                       |
| DC_3A-21A-42C_n257I | DC_3A_n257A                | CA_3A-21A-42C                 | CA_n257I                  | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n257D                | CA_3A-21A-42C                 | CA_n257I                  | 3A                          | CA_n257D                | No                                       |
|                     | DC_3A_n257G                | CA_3A-21A-42C                 | CA_n257I                  | 3A                          | CA_n257G                | No                                       |
|                     | DC_3A_n257H                | CA_3A-21A-42C                 | CA_n257I                  | 3A                          | CA_n257H                | No                                       |
|                     | DC_3A_n257I                | CA_3A-21A-42C                 | CA_n257I                  | 3A                          | CA_n257I                | No                                       |
|                     | DC_21A_n257A               | CA_3A-21A-42C                 | CA_n257I                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257D               | CA_3A-21A-42C                 | CA_n257I                  | 21A                         | CA_n257D                | No                                       |
|                     | DC_21A_n257G               | CA_3A-21A-42C                 | CA_n257I                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_21A_n257H               | CA_3A-21A-42C                 | CA_n257I                  | 21A                         | CA_n257H                | No                                       |
|                     | DC_21A_n257I               | CA_3A-21A-42C                 | CA_n257I                  | 21A                         | CA_n257I                | No                                       |
|                     | DC_42A_n257A               | CA_3A-21A-42C                 | CA_n257I                  | 42A                         | n257A                   | No                                       |
|                     | DC_42A_n257D               | CA_3A-21A-42C                 | CA_n257I                  | 42A                         | CA_n257D                | No                                       |
|                     | DC_42A_n257G               | CA_3A-21A-42C                 | CA_n257I                  | 42A                         | CA_n257G                | No                                       |
|                     | DC_42A_n257H               | CA_3A-21A-42C                 | CA_n257I                  | 42A                         | CA_n257H                | No                                       |

| EN-DC Configuration  | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|----------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
|                      | DC_42A_n257I               | CA_3A-21A-42C                 | CA_n257I                  | 42A                         | CA_n257I                | No                                       |
| DC_19A-21A-42A_n257A | DC_19A_n257A               | CA_19A-21A-42A                | n257A                     | 19A                         | n257A                   | No                                       |
|                      | DC_21A_n257A               | CA_19A-21A-42A                | n257A                     | 21A                         | n257A                   | No                                       |
|                      | DC_42A_n257A               | CA_19A-21A-42A                | n257A                     | 42A                         | n257A                   | No                                       |
|                      | DC_19A_n257A               | CA_19A-21A-42A                | CA_n257G                  | 19A                         | n257A                   | No                                       |
| DC_19A-21A-42A_n257G | DC_19A_n257D               | CA_19A-21A-42A                | CA_n257G                  | 19A                         | CA_n257D                | No                                       |
|                      | DC_19A_n257G               | CA_19A-21A-42A                | CA_n257G                  | 19A                         | CA_n257G                | No                                       |
|                      | DC_21A_n257A               | CA_19A-21A-42A                | CA_n257G                  | 21A                         | n257A                   | No                                       |
|                      | DC_21A_n257D               | CA_19A-21A-42A                | CA_n257G                  | 21A                         | CA_n257D                | No                                       |
|                      | DC_21A_n257G               | CA_19A-21A-42A                | CA_n257G                  | 21A                         | CA_n257G                | No                                       |
|                      | DC_42A_n257A               | CA_19A-21A-42A                | CA_n257G                  | 42A                         | n257A                   | No                                       |
|                      | DC_42A_n257D               | CA_19A-21A-42A                | CA_n257G                  | 42A                         | CA_n257D                | No                                       |
|                      | DC_42A_n257G               | CA_19A-21A-42A                | CA_n257G                  | 42A                         | CA_n257G                | No                                       |
|                      | DC_19A_n257A               | CA_19A-21A-42A                | CA_n257H                  | 19A                         | n257A                   | No                                       |
|                      | DC_19A_n257D               | CA_19A-21A-42A                | CA_n257H                  | 19A                         | CA_n257D                | No                                       |
| DC_19A-21A-42A_n257H | DC_19A_n257G               | CA_19A-21A-42A                | CA_n257H                  | 19A                         | CA_n257G                | No                                       |
|                      | DC_19A_n257H               | CA_19A-21A-42A                | CA_n257H                  | 19A                         | CA_n257H                | No                                       |
|                      | DC_21A_n257A               | CA_19A-21A-42A                | CA_n257H                  | 21A                         | n257A                   | No                                       |
|                      | DC_21A_n257D               | CA_19A-21A-42A                | CA_n257H                  | 21A                         | CA_n257D                | No                                       |
|                      | DC_21A_n257G               | CA_19A-21A-42A                | CA_n257H                  | 21A                         | CA_n257G                | No                                       |
|                      | DC_21A_n257H               | CA_19A-21A-42A                | CA_n257H                  | 21A                         | CA_n257H                | No                                       |
|                      | DC_42A_n257A               | CA_19A-21A-42A                | CA_n257H                  | 42A                         | n257A                   | No                                       |
|                      | DC_42A_n257D               | CA_19A-21A-42A                | CA_n257H                  | 42A                         | CA_n257D                | No                                       |
|                      | DC_42A_n257G               | CA_19A-21A-42A                | CA_n257H                  | 42A                         | CA_n257G                | No                                       |
|                      | DC_42A_n257H               | CA_19A-21A-42A                | CA_n257H                  | 42A                         | CA_n257H                | No                                       |
| DC_19A-21A-42A_n257I | DC_19A_n257A               | CA_19A-21A-42A                | CA_n257I                  | 19A                         | n257A                   | No                                       |
|                      | DC_19A_n257D               | CA_19A-21A-42A                | CA_n257I                  | 19A                         | CA_n257D                | No                                       |
|                      | DC_19A_n257G               | CA_19A-21A-42A                | CA_n257I                  | 19A                         | CA_n257G                | No                                       |
|                      | DC_19A_n257H               | CA_19A-21A-42A                | CA_n257I                  | 19A                         | CA_n257H                | No                                       |
|                      | DC_19A_n257I               | CA_19A-21A-42A                | CA_n257I                  | 19A                         | CA_n257I                | No                                       |
|                      | DC_21A_n257A               | CA_19A-21A-42A                | CA_n257I                  | 21A                         | n257A                   | No                                       |
|                      | DC_21A_n257D               | CA_19A-21A-42A                | CA_n257I                  | 21A                         | CA_n257D                | No                                       |
|                      | DC_21A_n257G               | CA_19A-21A-42A                | CA_n257I                  | 21A                         | CA_n257G                | No                                       |
|                      | DC_21A_n257H               | CA_19A-21A-42A                | CA_n257I                  | 21A                         | CA_n257H                | No                                       |
|                      | DC_21A_n257I               | CA_19A-21A-42A                | CA_n257I                  | 21A                         | CA_n257I                | No                                       |
|                      | DC_42A_n257A               | CA_19A-21A-42A                | CA_n257I                  | 42A                         | n257A                   | No                                       |
|                      | DC_42A_n257D               | CA_19A-21A-42A                | CA_n257I                  | 42A                         | CA_n257D                | No                                       |
|                      | DC_42A_n257G               | CA_19A-21A-42A                | CA_n257I                  | 42A                         | CA_n257G                | No                                       |
|                      | DC_42A_n257H               | CA_19A-21A-42A                | CA_n257I                  | 42A                         | CA_n257H                | No                                       |
| DC_19A-21A-42C_n257A | DC_19A_n257A               | CA_19A-21A-42C                | n257A                     | 19A                         | n257A                   | No                                       |
|                      | DC_21A_n257A               | CA_19A-21A-42C                | n257A                     | 21A                         | n257A                   | No                                       |
|                      | DC_42A_n257A               | CA_19A-21A-42C                | n257A                     | 42A                         | n257A                   | No                                       |
| DC_19A-21A-42C_n257G | DC_19A_n257A               | CA_19A-21A-42C                | CA_n257G                  | 19A                         | n257A                   | No                                       |
|                      | DC_19A_n257D               | CA_19A-21A-42C                | CA_n257G                  | 19A                         | CA_n257D                | No                                       |
|                      | DC_19A_n257G               | CA_19A-21A-42C                | CA_n257G                  | 19A                         | CA_n257G                | No                                       |
|                      | DC_21A_n257A               | CA_19A-21A-42C                | CA_n257G                  | 21A                         | n257A                   | No                                       |
|                      | DC_21A_n257D               | CA_19A-21A-42C                | CA_n257G                  | 21A                         | CA_n257D                | No                                       |
|                      | DC_21A_n257G               | CA_19A-21A-42C                | CA_n257G                  | 21A                         | CA_n257G                | No                                       |
|                      | DC_42A_n257A               | CA_19A-21A-42C                | CA_n257G                  | 42A                         | n257A                   | No                                       |
|                      | DC_42A_n257D               | CA_19A-21A-42C                | CA_n257G                  | 42A                         | CA_n257D                | No                                       |
|                      | DC_42A_n257G               | CA_19A-21A-42C                | CA_n257G                  | 42A                         | CA_n257G                | No                                       |
| DC_19A-21A-42C_n257H | DC_19A_n257A               | CA_19A-21A-42C                | CA_n257H                  | 19A                         | n257A                   | No                                       |
|                      | DC_19A_n257D               | CA_19A-21A-42C                | CA_n257H                  | 19A                         | CA_n257D                | No                                       |
|                      | DC_19A_n257G               | CA_19A-21A-42C                | CA_n257H                  | 19A                         | CA_n257G                | No                                       |

| EN-DC Configuration  | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|----------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
| DC_19A-21A-42C_n257I | DC_19A_n257H               | CA_19A-21A-42C                | CA_n257H                  | 19A                         | CA_n257H                | No                                       |
|                      | DC_21A_n257A               | CA_19A-21A-42C                | CA_n257H                  | 21A                         | n257A                   | No                                       |
|                      | DC_21A_n257D               | CA_19A-21A-42C                | CA_n257H                  | 21A                         | CA_n257D                | No                                       |
|                      | DC_21A_n257G               | CA_19A-21A-42C                | CA_n257H                  | 21A                         | CA_n257G                | No                                       |
|                      | DC_21A_n257H               | CA_19A-21A-42C                | CA_n257H                  | 21A                         | CA_n257H                | No                                       |
|                      | DC_42A_n257A               | CA_19A-21A-42C                | CA_n257H                  | 42A                         | n257A                   | No                                       |
|                      | DC_42A_n257D               | CA_19A-21A-42C                | CA_n257H                  | 42A                         | CA_n257D                | No                                       |
|                      | DC_42A_n257G               | CA_19A-21A-42C                | CA_n257H                  | 42A                         | CA_n257G                | No                                       |
|                      | DC_42A_n257H               | CA_19A-21A-42C                | CA_n257H                  | 42A                         | CA_n257H                | No                                       |
|                      | DC_19A_n257A               | CA_19A-21A-42C                | CA_n257I                  | 19A                         | n257A                   | No                                       |
|                      | DC_19A_n257D               | CA_19A-21A-42C                | CA_n257I                  | 19A                         | CA_n257D                | No                                       |
|                      | DC_19A_n257G               | CA_19A-21A-42C                | CA_n257I                  | 19A                         | CA_n257G                | No                                       |
|                      | DC_19A_n257H               | CA_19A-21A-42C                | CA_n257I                  | 19A                         | CA_n257H                | No                                       |
|                      | DC_19A_n257I               | CA_19A-21A-42C                | CA_n257I                  | 19A                         | CA_n257I                | No                                       |
|                      | DC_21A_n257A               | CA_19A-21A-42C                | CA_n257I                  | 21A                         | n257A                   | No                                       |
|                      | DC_21A_n257D               | CA_19A-21A-42C                | CA_n257I                  | 21A                         | CA_n257D                | No                                       |
|                      | DC_21A_n257G               | CA_19A-21A-42C                | CA_n257I                  | 21A                         | CA_n257G                | No                                       |
|                      | DC_21A_n257H               | CA_19A-21A-42C                | CA_n257I                  | 21A                         | CA_n257H                | No                                       |
|                      | DC_21A_n257I               | CA_19A-21A-42C                | CA_n257I                  | 21A                         | CA_n257I                | No                                       |
|                      | DC_42A_n257A               | CA_19A-21A-42C                | CA_n257I                  | 42A                         | n257A                   | No                                       |
|                      | DC_42A_n257D               | CA_19A-21A-42C                | CA_n257I                  | 42A                         | CA_n257D                | No                                       |
|                      | DC_42A_n257G               | CA_19A-21A-42C                | CA_n257I                  | 42A                         | CA_n257G                | No                                       |
|                      | DC_42A_n257H               | CA_19A-21A-42C                | CA_n257I                  | 42A                         | CA_n257H                | No                                       |
|                      | DC_42A_n257I               | CA_19A-21A-42C                | CA_n257I                  | 42A                         | CA_n257I                | No                                       |

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

## 4.3.1.5.1.5 Inter-band EN-DC configurations including FR2 (five bands)

**Table 4.3.1.5.1.5-1: Inter-band EN-DC configurations including FR2 (five bands)**

| EN-DC Configuration    | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|------------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
| DC_1A-3A-19A-42A_n257A | DC_1A_n257A                | CA_1A-3A-19A-42A              | n257A                     | 1A                          | n257A                   | No                                       |
|                        | DC_3A_n257A                | CA_1A-3A-19A-42A              | n257A                     | 3A                          | n257A                   | No                                       |
|                        | DC_19A_n257A               | CA_1A-3A-19A-42A              | n257A                     | 19A                         | n257A                   | No                                       |
|                        | DC_42A_n257A               | CA_1A-3A-19A-42A              | n257A                     | 42A                         | n257A                   | No                                       |
| DC_1A-3A-19A-42A_n257G | DC_1A_n257A                | CA_1A-3A-19A-42A              | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                        | DC_3A_n257A                | CA_1A-3A-19A-42A              | CA_n257G                  | 3A                          | n257A                   | No                                       |
|                        | DC_3A_n257G                | CA_1A-3A-19A-42A              | CA_n257G                  | 3A                          | CA_n257G                | No                                       |
|                        | DC_19A_n257A               | CA_1A-3A-19A-42A              | CA_n257G                  | 19A                         | n257A                   | No                                       |
|                        | DC_42A_n257A               | CA_1A-3A-19A-42A              | CA_n257G                  | 42A                         | n257A                   | No                                       |
| DC_1A-3A-19A-42C_n257A | DC_1A_n257A                | CA_1A-3A-19A-42C              | n257A                     | 1A                          | n257A                   | No                                       |
|                        | DC_3A_n257A                | CA_1A-3A-19A-42C              | n257A                     | 3A                          | n257A                   | No                                       |
|                        | DC_19A_n257A               | CA_1A-3A-19A-42C              | n257A                     | 19A                         | n257A                   | No                                       |
|                        | DC_42A_n257A               | CA_1A-3A-19A-42C              | n257A                     | 42A                         | n257A                   | No                                       |
| DC_1A-3A-19A-42C_n257G | DC_1A_n257A                | CA_1A-3A-19A-42C              | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                        | DC_3A_n257A                | CA_1A-3A-19A-42C              | CA_n257G                  | 3A                          | n257A                   | No                                       |
|                        | DC_3A_n257G                | CA_1A-3A-19A-42C              | CA_n257G                  | 3A                          | CA_n257G                | No                                       |
|                        | DC_19A_n257A               | CA_1A-3A-19A-42C              | CA_n257G                  | 19A                         | n257A                   | No                                       |
|                        | DC_42A_n257A               | CA_1A-3A-19A-42C              | CA_n257G                  | 42A                         | n257A                   | No                                       |
| DC_1A-3A-19A-42C_n257H | DC_1A_n257A                | CA_1A-3A-19A-42C              | CA_n257H                  | 1A                          | n257A                   | No                                       |
|                        | DC_3A_n257A                | CA_1A-3A-19A-42C              | CA_n257H                  | 3A                          | n257A                   | No                                       |
|                        | DC_3A_n257G                | CA_1A-3A-19A-42C              | CA_n257H                  | 3A                          | CA_n257G                | No                                       |
|                        | DC_3A_n257H                | CA_1A-3A-19A-42C              | CA_n257H                  | 3A                          | CA_n257H                | No                                       |
|                        | DC_19A_n257A               | CA_1A-3A-19A-42C              | CA_n257H                  | 19A                         | n257A                   | No                                       |
|                        | DC_42A_n257A               | CA_1A-3A-19A-42C              | CA_n257H                  | 42A                         | n257A                   | No                                       |
| DC_1A-3A-19A-42C_n257I | DC_1A_n257A                | CA_1A-3A-19A-42C              | CA_n257I                  | 1A                          | n257A                   | No                                       |
|                        | DC_3A_n257A                | CA_1A-3A-19A-42C              | CA_n257I                  | 3A                          | n257A                   | No                                       |
|                        | DC_3A_n257G                | CA_1A-3A-19A-42C              | CA_n257I                  | 3A                          | CA_n257G                | No                                       |
|                        | DC_3A_n257H                | CA_1A-3A-19A-42C              | CA_n257I                  | 3A                          | CA_n257H                | No                                       |

| EN-DC Configuration     | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|-------------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
| DC_1A-3A-21A-42A_n257A  | DC_3A_n257I                | CA_1A-3A-19A-42C              | CA_n257I                  | 3A                          | CA_n257I                | No                                       |
|                         | DC_19A_n257A               | CA_1A-3A-19A-42C              | CA_n257I                  | 19A                         | n257A                   | No                                       |
|                         | DC_42A_n257A               | CA_1A-3A-19A-42C              | CA_n257I                  | 42A                         | n257A                   | No                                       |
| DC_1A-3A-21A-42C_n257A  | DC_1A_n257A                | CA_1A-3A-21A-42A              | n257A                     | 1A                          | n257A                   | No                                       |
|                         | DC_3A_n257A                | CA_1A-3A-21A-42A              | n257A                     | 3A                          | n257A                   | No                                       |
|                         | DC_21A_n257A               | CA_1A-3A-21A-42A              | n257A                     | 21A                         | n257A                   | No                                       |
|                         | DC_42A_n257A               | CA_1A-3A-21A-42A              | n257A                     | 42A                         | n257A                   | No                                       |
| DC_1A-3A-21A-42C_n257G  | DC_1A_n257A                | CA_1A-3A-21A-42C              | n257A                     | 1A                          | n257A                   | No                                       |
|                         | DC_3A_n257A                | CA_1A-3A-21A-42C              | n257A                     | 3A                          | n257A                   | No                                       |
|                         | DC_21A_n257A               | CA_1A-3A-21A-42C              | n257A                     | 21A                         | n257A                   | No                                       |
|                         | DC_42A_n257A               | CA_1A-3A-21A-42C              | n257A                     | 42A                         | n257A                   | No                                       |
| DC_1A-3A-21A-42C_n257H  | DC_1A_n257A                | CA_1A-3A-21A-42C              | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                         | DC_3A_n257A                | CA_1A-3A-21A-42C              | CA_n257G                  | 3A                          | n257A                   | No                                       |
|                         | DC_3A_n257G                | CA_1A-3A-21A-42C              | CA_n257G                  | 3A                          | CA_n257G                | No                                       |
|                         | DC_3A_n257H                | CA_1A-3A-21A-42C              | CA_n257H                  | 3A                          | CA_n257H                | No                                       |
|                         | DC_21A_n257A               | CA_1A-3A-21A-42C              | CA_n257H                  | 21A                         | n257A                   | No                                       |
| DC_1A-3A-21A-42C_n257I  | DC_1A_n257A                | CA_1A-3A-21A-42C              | CA_n257H                  | 42A                         | n257A                   | No                                       |
|                         | DC_3A_n257A                | CA_1A-3A-21A-42C              | CA_n257I                  | 1A                          | n257A                   | No                                       |
|                         | DC_3A_n257G                | CA_1A-3A-21A-42C              | CA_n257I                  | 3A                          | n257A                   | No                                       |
|                         | DC_3A_n257H                | CA_1A-3A-21A-42C              | CA_n257I                  | 3A                          | CA_n257G                | No                                       |
|                         | DC_3A_n257I                | CA_1A-3A-21A-42C              | CA_n257I                  | 3A                          | CA_n257H                | No                                       |
|                         | DC_21A_n257A               | CA_1A-3A-21A-42C              | CA_n257I                  | 21A                         | n257A                   | No                                       |
|                         | DC_42A_n257A               | CA_1A-3A-21A-42C              | CA_n257I                  | 42A                         | n257A                   | No                                       |
| DC_1A-19A-21A-42A_n257A | DC_1A_n257A                | CA_1A-19A-21A-42A             | n257A                     | 1A                          | n257A                   | No                                       |
|                         | DC_19A_n257A               | CA_1A-19A-21A-42A             | n257A                     | 19A                         | n257A                   | No                                       |
|                         | DC_21A_n257A               | CA_1A-19A-21A-42A             | n257A                     | 21A                         | n257A                   | No                                       |
|                         | DC_42A_n257A               | CA_1A-19A-21A-42A             | n257A                     | 42A                         | n257A                   | No                                       |

| EN-DC Configuration     | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|-------------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
| DC_1A-19A-21A-42A_n257G | DC_1A_n257A                | CA_1A-19A-21A-42A             | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                         | DC_1A_n257G                | CA_1A-19A-21A-42A             | CA_n257G                  | 1A                          | CA_n257G                | No                                       |
|                         | DC_19A_n257A               | CA_1A-19A-21A-42A             | CA_n257G                  | 19A                         | n257A                   | No                                       |
|                         | DC_21A_n257A               | CA_1A-19A-21A-42A             | CA_n257G                  | 21A                         | n257A                   | No                                       |
|                         | DC_21A_n257G               | CA_1A-19A-21A-42A             | CA_n257G                  | 21A                         | CA_n257G                | No                                       |
|                         | DC_42A_n257A               | CA_1A-19A-21A-42A             | CA_n257G                  | 42A                         | n257A                   | No                                       |
| DC_1A-19A-21A-42A_n257H | DC_1A_n257A                | CA_1A-19A-21A-42A             | CA_n257H                  | 1A                          | n257A                   | No                                       |
|                         | DC_1A_n257G                | CA_1A-19A-21A-42A             | CA_n257H                  | 1A                          | CA_n257G                | No                                       |
|                         | DC_1A_n257H                | CA_1A-19A-21A-42A             | CA_n257H                  | 1A                          | CA_n257H                | No                                       |
|                         | DC_19A_n257A               | CA_1A-19A-21A-42A             | CA_n257H                  | 19A                         | n257A                   | No                                       |
|                         | DC_21A_n257A               | CA_1A-19A-21A-42A             | CA_n257H                  | 21A                         | n257A                   | No                                       |
|                         | DC_21A_n257G               | CA_1A-19A-21A-42A             | CA_n257H                  | 21A                         | CA_n257G                | No                                       |
|                         | DC_21A_n257H               | CA_1A-19A-21A-42A             | CA_n257H                  | 21A                         | CA_n257H                | No                                       |
|                         | DC_42A_n257A               | CA_1A-19A-21A-42A             | CA_n257H                  | 42A                         | n257A                   | No                                       |
| DC_1A-19A-21A-42A_n257I | DC_1A_n257A                | CA_1A-19A-21A-42A             | CA_n257I                  | 1A                          | n257A                   | No                                       |
|                         | DC_1A_n257G                | CA_1A-19A-21A-42A             | CA_n257I                  | 1A                          | CA_n257G                | No                                       |
|                         | DC_1A_n257H                | CA_1A-19A-21A-42A             | CA_n257I                  | 1A                          | CA_n257H                | No                                       |
|                         | DC_1A_n257I                | CA_1A-19A-21A-42A             | CA_n257I                  | 1A                          | CA_n257I                | No                                       |
|                         | DC_19A_n257A               | CA_1A-19A-21A-42A             | CA_n257I                  | 19A                         | n257A                   | No                                       |
|                         | DC_21A_n257A               | CA_1A-19A-21A-42A             | CA_n257I                  | 21A                         | n257A                   | No                                       |
|                         | DC_21A_n257G               | CA_1A-19A-21A-42A             | CA_n257I                  | 21A                         | CA_n257G                | No                                       |
|                         | DC_21A_n257H               | CA_1A-19A-21A-42A             | CA_n257I                  | 21A                         | CA_n257H                | No                                       |
|                         | DC_21A_n257I               | CA_1A-19A-21A-42A             | CA_n257I                  | 21A                         | CA_n257I                | No                                       |
|                         | DC_42A_n257A               | CA_1A-19A-21A-42A             | CA_n257I                  | 42A                         | n257A                   | No                                       |
| DC_1A-19A-21A-42C_n257A | DC_1A_n257A                | CA_1A-19A-21A-42C             | n257A                     | 1A                          | n257A                   | No                                       |
|                         | DC_19A_n257A               | CA_1A-19A-21A-42C             | n257A                     | 19A                         | n257A                   | No                                       |
|                         | DC_21A_n257A               | CA_1A-19A-21A-42C             | n257A                     | 21A                         | n257A                   | No                                       |
|                         | DC_42A_n257A               | CA_1A-19A-21A-42C             | n257A                     | 42A                         | n257A                   | No                                       |
| DC_1A-19A-21A-42A_n257G | DC_1A_n257A                | CA_1A-19A-21A-42A             | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                         | DC_1A_n257G                | CA_1A-19A-21A-42A             | CA_n257G                  | 1A                          | CA_n257G                | No                                       |
|                         | DC_19A_n257A               | CA_1A-19A-21A-42A             | CA_n257G                  | 19A                         | n257A                   | No                                       |
|                         | DC_21A_n257A               | CA_1A-19A-21A-42A             | CA_n257G                  | 21A                         | n257A                   | No                                       |
|                         | DC_21A_n257G               | CA_1A-19A-21A-42A             | CA_n257G                  | 21A                         | CA_n257G                | No                                       |
|                         | DC_42A_n257A               | CA_1A-19A-21A-42A             | CA_n257G                  | 42A                         | n257A                   | No                                       |

| EN-DC Configuration     | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|-------------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
| DC_1A-19A-21A-42A_n257H | DC_1A_n257A                | CA_1A-19A-21A-42A             | CA_n257H                  | 1A                          | n257A                   | No                                       |
|                         | DC_1A_n257G                | CA_1A-19A-21A-42A             | CA_n257H                  | 1A                          | CA_n257G                | No                                       |
|                         | DC_1A_n257H                | CA_1A-19A-21A-42A             | CA_n257H                  | 1A                          | CA_n257H                | No                                       |
|                         | DC_19A_n257A               | CA_1A-19A-21A-42A             | CA_n257H                  | 19A                         | n257A                   | No                                       |
|                         | DC_21A_n257A               | CA_1A-19A-21A-42A             | CA_n257H                  | 21A                         | n257A                   | No                                       |
|                         | DC_21A_n257G               | CA_1A-19A-21A-42A             | CA_n257H                  | 21A                         | CA_n257G                | No                                       |
|                         | DC_21A_n257H               | CA_1A-19A-21A-42A             | CA_n257H                  | 21A                         | CA_n257H                | No                                       |
|                         | DC_42A_n257A               | CA_1A-19A-21A-42A             | CA_n257H                  | 42A                         | n257A                   | No                                       |
| DC_1A-19A-21A-42A_n257I | DC_1A_n257A                | CA_1A-19A-21A-42A             | CA_n257I                  | 1A                          | n257A                   | No                                       |
|                         | DC_1A_n257G                | CA_1A-19A-21A-42A             | CA_n257I                  | 1A                          | CA_n257G                | No                                       |
|                         | DC_1A_n257H                | CA_1A-19A-21A-42A             | CA_n257I                  | 1A                          | CA_n257H                | No                                       |
|                         | DC_1A_n257I                | CA_1A-19A-21A-42A             | CA_n257I                  | 1A                          | CA_n257I                | No                                       |
|                         | DC_19A_n257A               | CA_1A-19A-21A-42A             | CA_n257I                  | 19A                         | n257A                   | No                                       |
|                         | DC_21A_n257A               | CA_1A-19A-21A-42A             | CA_n257I                  | 21A                         | n257A                   | No                                       |
|                         | DC_21A_n257G               | CA_1A-19A-21A-42A             | CA_n257I                  | 21A                         | CA_n257G                | No                                       |
|                         | DC_21A_n257H               | CA_1A-19A-21A-42A             | CA_n257I                  | 21A                         | CA_n257H                | No                                       |
|                         | DC_21A_n257I               | CA_1A-19A-21A-42A             | CA_n257I                  | 21A                         | CA_n257I                | No                                       |
|                         | DC_42A_n257A               | CA_1A-19A-21A-42A             | CA_n257I                  | 42A                         | n257A                   | No                                       |
| DC_1A-19A-21A-42C_n257G | DC_1A_n257A                | CA_1A-19A-21A-42C             | CA_n257G                  | 1A                          | n257A                   | No                                       |
|                         | DC_1A_n257G                | CA_1A-19A-21A-42C             | CA_n257G                  | 1A                          | CA_n257G                | No                                       |
|                         | DC_19A_n257A               | CA_1A-19A-21A-42C             | CA_n257G                  | 19A                         | n257A                   | No                                       |
|                         | DC_21A_n257A               | CA_1A-19A-21A-42C             | CA_n257G                  | 21A                         | n257A                   | No                                       |
|                         | DC_21A_n257G               | CA_1A-19A-21A-42C             | CA_n257G                  | 21A                         | CA_n257G                | No                                       |
|                         | DC_42A_n257A               | CA_1A-19A-21A-42C             | CA_n257G                  | 42A                         | n257A                   | No                                       |
| DC_1A-19A-21A-42C_n257H | DC_1A_n257A                | CA_1A-19A-21A-42C             | CA_n257H                  | 1A                          | n257A                   | No                                       |
|                         | DC_1A_n257G                | CA_1A-19A-21A-42C             | CA_n257H                  | 1A                          | CA_n257G                | No                                       |
|                         | DC_1A_n257H                | CA_1A-19A-21A-42C             | CA_n257H                  | 1A                          | CA_n257H                | No                                       |
|                         | DC_19A_n257A               | CA_1A-19A-21A-42C             | CA_n257H                  | 19A                         | n257A                   | No                                       |
|                         | DC_21A_n257A               | CA_1A-19A-21A-42C             | CA_n257H                  | 21A                         | n257A                   | No                                       |
|                         | DC_21A_n257G               | CA_1A-19A-21A-42C             | CA_n257H                  | 21A                         | CA_n257G                | No                                       |
|                         | DC_21A_n257H               | CA_1A-19A-21A-42C             | CA_n257H                  | 21A                         | CA_n257H                | No                                       |
|                         | DC_42A_n257A               | CA_1A-19A-21A-42C             | CA_n257H                  | 42A                         | n257A                   | No                                       |
| DC_1A-19A-21A-42C_n257I | DC_1A_n257A                | CA_1A-19A-21A-42C             | CA_n257I                  | 1A                          | n257A                   | No                                       |
|                         | DC_1A_n257G                | CA_1A-19A-21A-42C             | CA_n257I                  | 1A                          | CA_n257G                | No                                       |

| EN-DC Configuration | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
|                     | DC_1A_n257H                | CA_1A-19A-21A-42C             | CA_n257I                  | 1A                          | CA_n257H                | No                                       |
|                     | DC_1A_n257I                | CA_1A-19A-21A-42C             | CA_n257I                  | 1A                          | CA_n257I                | No                                       |
|                     | DC_19A_n257A               | CA_1A-19A-21A-42C             | CA_n257I                  | 19A                         | n257A                   | No                                       |
|                     | DC_21A_n257A               | CA_1A-19A-21A-42C             | CA_n257I                  | 21A                         | n257A                   | No                                       |
|                     | DC_21A_n257G               | CA_1A-19A-21A-42C             | CA_n257I                  | 21A                         | CA_n257G                | No                                       |
|                     | DC_21A_n257H               | CA_1A-19A-21A-42C             | CA_n257I                  | 21A                         | CA_n257H                | No                                       |
|                     | DC_21A_n257I               | CA_1A-19A-21A-42C             | CA_n257I                  | 21A                         | CA_n257I                | No                                       |
|                     | DC_42A_n257A               | CA_1A-19A-21A-42C             | CA_n257I                  | 42A                         | n257A                   | No                                       |

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

#### 4.3.1.5.1.6 Inter-band EN-DC configurations including FR2 (six bands)

**Table 4.3.1.5.1.6-1: Inter-band EN-DC configurations including FR2 (six bands)**

| EN-DC Configuration | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
| FFS                 | FFS                        | FFS                           | FFS                       | FFS                         | FFS                     | FFS                                      |

#### 4.3.1.6 Test frequencies for EN-DC band combinations including FR1 and FR2

##### 4.3.1.6.1 Inter-band EN-DC configurations including FR1 and FR2

###### 4.3.1.6.1.1 General

For inter-band EN-DC configurations as listed in this clause, the following apply:

For the E-UTRA band and E-UTRA CA configurations, test frequencies as specified in TS 36.508 [2], clause 4.3.1 are used.

For the NR band and NR CA configurations, test frequencies as specified in clause 4.3.1 for FR1 and 4.3.2 for FR2 are used.

## 4.3.1.6.1.2

Inter-band EN-DC configurations including FR1 and FR2 (three bands)

**Table 4.3.1.6.1.2-1: Inter-band EN-DC including FR1 and FR2 (three bands)**

| EN-DC Configuration | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration | Applicable for protocol testing (Note 1) |
|---------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|--|
| DC_1A_n78A-n257A    | DC_1A_n78A                 | 1A                            | CA_n78A-n257A             | 1A                          | n78A                    | Yes (NR 2CC)                             |
|                     | DC_1A_n257A                | 1A                            | CA_n78A-n257A             | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n78A-n257A           | 1A                            | CA_n78A-n257A             | 1A                          | CA_n78A-n257A           | Yes (NR 2CC)                             |
| DC_1A_n79A-n257A    | DC_1A_n79A                 | 1A                            | CA_n79A-n257A             | 1A                          | n79A                    | Yes (NR 2CC)                             |
|                     | DC_1A_n257A                | 1A                            | CA_n79A-n257A             | 1A                          | n257A                   | No                                       |
|                     | DC_1A_n79A-n257A           | 1A                            | CA_n79A-n257A             | 1A                          | CA_n79A-n257A           | Yes (NR 2CC)                             |
| DC_3A_n78A-n257A    | DC_3A_n78A                 | 3A                            | CA_n78A-n257A             | 3A                          | n78A                    | Yes (NR 2CC)                             |
|                     | DC_3A_n257A                | 3A                            | CA_n78A-n257A             | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n78A-n257A           | 3A                            | CA_n78A-n257A             | 3A                          | CA_n78A-n257A           | Yes (NR 2CC)                             |
| DC_3A_n79A-n257A    | DC_3A_n79A                 | 3A                            | CA_n79A-n257A             | 3A                          | n79A                    | Yes (NR 2CC)                             |
|                     | DC_3A_n257A                | 3A                            | CA_n79A-n257A             | 3A                          | n257A                   | No                                       |
|                     | DC_3A_n79A-n257A           | 3A                            | CA_n79A-n257A             | 3A                          | CA_n79A-n257A           | Yes (NR 2CC)                             |
| DC_19A_n78A-n257A   | DC_19A_n78A                | 19A                           | CA_n78A-n257A             | 19A                         | n78A                    | Yes (NR 2CC)                             |
|                     | DC_19A_n257A               | 19A                           | CA_n78A-n257A             | 19A                         | n257A                   | No                                       |
|                     | DC_19A_n78A-n257A          | 19A                           | CA_n78A-n257A             | 19A                         | CA_n78A-n257A           | Yes (NR 2CC)                             |
| DC_19A_n79A-n257A   | DC_19A_n79A                | 19A                           | CA_n79A-n257A             | 19A                         | n79A                    | Yes (NR 2CC)                             |
|                     | DC_19A_n257A               | 19A                           | CA_n79A-n257A             | 19A                         | n257A                   | No                                       |
|                     | DC_19A_n79A-n257A          | 19A                           | CA_n79A-n257A             | 19A                         | CA_n79A-n257A           | Yes (NR 2CC)                             |

Note 1: Protocol testing is limited to EN-DC configurations with 1 CC E-UTRA and 1CC or 2CC NR configurations.

## 4.3.1.6.1.3 Inter-band EN-DC configurations including FR1 and FR2 (four bands)

**Table 4.3.1.6.1.3-1: Inter-band EN-DC including FR1 and FR2 (four bands)**

| <b>EN-DC Configuration</b> | <b>Uplink EN-DC configuration</b> | <b>E-UTRA downlink configuration</b> | <b>NR downlink configuration</b> | <b>E-UTRA uplink configuration</b> | <b>NR uplink configuration</b> |
|----------------------------|-----------------------------------|--------------------------------------|----------------------------------|------------------------------------|--------------------------------|
| DC_1A-3A_n78A-n257A        | DC_1A_n78A                        | CA_1A-3A                             | CA_n78A-n257A                    | 1A                                 | n78A                           |
|                            | DC_1A_n257A                       | CA_1A-3A                             | CA_n78A-n257A                    | 1A                                 | n257A                          |
|                            | DC_3A_n78A                        | CA_1A-3A                             | CA_n78A-n257A                    | 3A                                 | n78A                           |
|                            | DC_3A_n257A                       | CA_1A-3A                             | CA_n78A-n257A                    | 3A                                 | n257A                          |
| DC_1A-3A_n78A-n257G        | DC_1A_n78A                        | CA_1A-3A                             | CA_n78A-n257G                    | 1A                                 | n78A                           |
|                            | DC_1A_n257A                       | CA_1A-3A                             | CA_n78A-n257G                    | 1A                                 | n257A                          |
|                            | DC_1A_n257D                       | CA_1A-3A                             | CA_n78A-n257G                    | 1A                                 | CA_n257D                       |
|                            | DC_1A_n257G                       | CA_1A-3A                             | CA_n78A-n257G                    | 1A                                 | CA_n257G                       |
|                            | DC_3A_n78A                        | CA_1A-3A                             | CA_n78A-n257G                    | 3A                                 | n78A                           |
|                            | DC_3A_n257A                       | CA_1A-3A                             | CA_n78A-n257G                    | 3A                                 | n257A                          |
|                            | DC_3A_n257D                       | CA_1A-3A                             | CA_n78A-n257G                    | 3A                                 | CA_n257D                       |
|                            | DC_3A_n257G                       | CA_1A-3A                             | CA_n78A-n257G                    | 3A                                 | CA_n257G                       |
| DC_1A-3A_n78A-n257H        | DC_1A_n78A                        | CA_1A-3A                             | CA_n78A-n257H                    | 1A                                 | n78A                           |
|                            | DC_1A_n257A                       | CA_1A-3A                             | CA_n78A-n257H                    | 1A                                 | n257A                          |
|                            | DC_1A_n257D                       | CA_1A-3A                             | CA_n78A-n257H                    | 1A                                 | CA_n257D                       |
|                            | DC_1A_n257G                       | CA_1A-3A                             | CA_n78A-n257H                    | 1A                                 | CA_n257G                       |
|                            | DC_1A_n257H                       | CA_1A-3A                             | CA_n78A-n257H                    | 1A                                 | CA_n257H                       |
|                            | DC_3A_n78A                        | CA_1A-3A                             | CA_n78A-n257H                    | 3A                                 | n78A                           |
|                            | DC_3A_n257A                       | CA_1A-3A                             | CA_n78A-n257H                    | 3A                                 | n257A                          |
|                            | DC_3A_n257D                       | CA_1A-3A                             | CA_n78A-n257H                    | 3A                                 | CA_n257D                       |
|                            | DC_3A_n257G                       | CA_1A-3A                             | CA_n78A-n257H                    | 3A                                 | CA_n257G                       |
|                            | DC_3A_n257H                       | CA_1A-3A                             | CA_n78A-n257H                    | 3A                                 | CA_n257H                       |
| DC_1A-3A_n78A-n257I        | DC_1A_n78A                        | CA_1A-3A                             | CA_n78A-n257I                    | 1A                                 | n78A                           |
|                            | DC_1A_n257A                       | CA_1A-3A                             | CA_n78A-n257I                    | 1A                                 | n257A                          |
|                            | DC_1A_n257D                       | CA_1A-3A                             | CA_n78A-n257I                    | 1A                                 | CA_n257D                       |
|                            | DC_1A_n257G                       | CA_1A-3A                             | CA_n78A-n257I                    | 1A                                 | CA_n257G                       |
|                            | DC_1A_n257H                       | CA_1A-3A                             | CA_n78A-n257I                    | 1A                                 | CA_n257H                       |
|                            | DC_1A_n257I                       | CA_1A-3A                             | CA_n78A-n257I                    | 1A                                 | CA_n257I                       |
|                            | DC_3A_n78A                        | CA_1A-3A                             | CA_n78A-n257I                    | 3A                                 | n78A                           |
|                            | DC_3A_n257A                       | CA_1A-3A                             | CA_n78A-n257I                    | 3A                                 | n257A                          |
|                            | DC_3A_n257D                       | CA_1A-3A                             | CA_n78A-n257I                    | 3A                                 | CA_n257D                       |
|                            | DC_3A_n257G                       | CA_1A-3A                             | CA_n78A-n257I                    | 3A                                 | CA_n257G                       |
|                            | DC_3A_n257H                       | CA_1A-3A                             | CA_n78A-n257I                    | 3A                                 | CA_n257H                       |
|                            | DC_3A_n257I                       | CA_1A-3A                             | CA_n78A-n257I                    | 3A                                 | CA_n257I                       |

4.3.1.6.1.4 Inter-band EN-DC configurations including FR1 and FR2 (five bands)

**Table 4.3.1.6.1.4-1: Inter-band EN-DC including FR1 and FR2 (five bands)**

| EN-DC Configuration | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration |
|---------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|
| FFS                 | FFS                        | FFS                           | FFS                       | FFS                         | FFS                     |

4.3.1.6.1.5 Inter-band EN-DC configurations including FR1 and FR2 (six bands)

**Table 4.3.1.6.1.5-1: Inter-band EN-DC including FR1 and FR2 (six bands)**

| EN-DC Configuration | Uplink EN-DC configuration | E-UTRA downlink configuration | NR downlink configuration | E-UTRA uplink configuration | NR uplink configuration |
|---------------------|----------------------------|-------------------------------|---------------------------|-----------------------------|-------------------------|
| FFS                 | FFS                        | FFS                           | FFS                       | FFS                         | FFS                     |

### 4.3.1.7 Test frequencies for Non-3GPP Access

#### 4.3.1.7.1 WLAN Test frequencies

The same WLAN test frequencies as in TS 36.508 [2] clause 4.3.1.6 applies.

## 4.3.2 Radio conditions

### 4.3.2.1 FR1, normal propagation condition for connected

The downlink connection between the System Simulator and the UE is without Additive White Gaussian Noise, and has no fading or multipath effects.

The uplink connection between the UE and System Simulator is without Additive White Gaussian Noise, and has no fading or multipath effects.

### 4.3.2.2 FR2, condition for OTA

FFS

## 4.3.3 Physical channel allocations

### 4.3.3.1 E-UTRA

The same physical channel allocations as in TS 36.508 [2] clause 4.3.3 applies.

### 4.3.3.2 NR

#### 4.3.3.2.1 Antennas

For FR1 testing, if the UE has two or four Rx antennas, the same downlink signal is applied to each antenna. All UE Rx antennas shall be connected unless otherwise stated in the test case.

#### 4.3.3.2.2 Downlink physical channels and physical signals

**Table 4.3.3.2.2-1: Power allocation for OFDM symbols and reference signals**

| Parameter                         | Unit | Value                  |
|-----------------------------------|------|------------------------|
| SSS transmit power                | W    | Test specific (Note 1) |
| EPRE ratio of PSS to SSS          | dB   | 0                      |
| EPRE ratio of PBCH DMRS to SSS    | dB   | 0                      |
| EPRE ratio of PBCH to PBCH DMRS   | dB   | 0                      |
| EPRE ratio of PDCCH DMRS to SSS   | dB   | 0                      |
| EPRE ratio of PDCCH to PDCCH DMRS | dB   | 0                      |
| EPRE ratio of PDSCH DMRS to SSS   | dB   | 0                      |
| EPRE ratio of PDSCH to PDSCH DMRS | dB   | 0                      |
| EPRE ratio of PTRS to PDSCH       | dB   | 0                      |
| EPRE ratio of CSI-RS to SSS       | dB   | 0                      |

Note 1: For signalling test cases the power allocation according to clause 6.2.1.2 applies.

#### 4.3.3.2.3 Mapping of downlink physical channels and signals to physical resources

Parameters for mapping of downlink physical channels and signals are specified as follows.

Normal Cyclic Prefix

$N_{ID}^{cell}$ , Physical layer cell identity = 0 is used as the default physical layer cell identity

For Signalling testing, the same subcarrier spacing (SCS) is used for carrier and SS blocks; the tables in clause 6.2.3.1 specify which SCS to use for a particular NR band. In general, SCS=15kHz is used for FR1 FDD, SCS=15kHz or SCS=30kHz is used for FR1 TDD and SCS=120kHz is used for FR2.

For Signalling testing, the default channel bandwidth is specified in clause 6.2.3.1 for each NR band.

For Signalling testing, single SS Tx antenna is used, in FR1, unless specified otherwise in the test case.

For RF testing, the mapping of DL physical channels to resource element is defined in Annex C of TS 38.101-1 [7] and TS 38.101-2 [8] and TS 38.101-3 [9].

#### 4.3.4 Signal levels

##### 4.3.4.1 Signal levels for conducted testing

###### 4.3.4.1.1 Downlink signal levels

For E-UTRA cell in EN-DC with FR1 NR, the downlink power setting specified in Table 4.3.4.1-1 of TS 36.508[2] are used unless otherwise specified in a test case.

##### 4.3.4.2 Signal levels for OTA testing

As defined in clause 5.2.1.2 for RF tests.

As defined in clause 6.2.1.2 for Signalling tests.

As defined in clause 7.2.1.2 for RRM tests.

#### 4.3.5 Standard test signals

#### 4.3.6 Physical layer parameters

##### 4.3.6.1 Downlink physical layer parameters

###### 4.3.6.1.1 Physical layer parameters for scheduling of PUSCH

###### 4.3.6.1.1.1 Physical layer parameters for DCI format 0\_0

DCI format 0\_0 is used for the scheduling of PUSCH in one cell.

Default physical layer parameters for DCI format 0\_0 are specified in table 4.3.6.1.1.1-1.

**Table 4.3.6.1.1.1-1: Physical layer parameters for DCI format 0\_0**

| Parameter                            | Value  | Value in binary |
|--------------------------------------|--|-----------------|
| Identifier for DCI formats           | Indicating an UL DCI format  | "0"             |
| Frequency domain resource assignment | Dependent on test parameters   | -               |
| Time domain resource assignment      | Indicating the first entry of PUSCH-TimeDomainResourceAllocationList to be used              | "0000"          |
| Frequency hopping flag               | w/o hopping  | "0"             |
| Modulation and coding scheme         | Dependent on test parameters   |                 |
| New data indicator                   | Set for every data transmission/retransmission according to the rules specified in TS 38.321 | -               |
| Redundancy version                   | Dependent on test parameters   | -               |
| HARQ process number                  | Dependent on test parameters   | -               |
| TPC command for scheduled PUSCH      | 0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213                                     | "01"            |
| UL/SUL indicator                     | Not present (0 bit for UEs not configured with SUL in the cell)                              | -               |

#### 4.3.6.1.1.2 Physical layer parameters for DCI format 0\_1

DCI format 0\_1 is used for the scheduling of PUSCH in one cell.

Default physical layer parameters for DCI format 0\_1 are specified in table 4.3.6.1.1.2-1.

**Table 4.3.6.1.1.2-1: Physical layer parameters for DCI format 0\_1**

| Parameter                                  | Value  | Value in binary                             | Condition                   |
|--|--|---|-----------------------------|
| Carrier indicator                          | Not present  | -   |                             |
| UL/SUL indicator                           | Not present (0 bit for UEs not configured with SUL in the cell)  | -   |                             |
|  | 1  | 1   | SUL                         |
| Identifier for DCI formats                 | Indicating an UL DCI format  | "0"   |                             |
| Bandwidth part indicator                   | Not present (indicating active BWP, not present in case of only one <i>BWP-Id</i> as per Table 4.6.3-8)                              | -   |                             |
| Frequency domain resource assignment       | Dependent on test parameters   | -   |                             |
| Time domain resource assignment            | Indicating the first entry of PUSCH-TimeDomainResourceAllocationList to be used  | "0000"                                      |                             |
| Frequency hopping flag                     | Not present  | -   |                             |
| Modulation and coding scheme               | Dependent on test parameters   | -   |                             |
| New data indicator                         | Set for every data transmission / retransmission according to the rules specified in TS 38.321 [20]                                  | -   |                             |
| Redundancy version                         | Dependent on test parameters   | -   |                             |
| HARQ process number                        | Dependent on test parameters   | -   |                             |
| 1 <sup>st</sup> downlink assignment index  | Dependent on test parameters   |   |                             |
| 2 <sup>nd</sup> downlink assignment index  | Not present (0 bit if one HARQ-ACK sub-codebook)   | -   |                             |
| TPC command for scheduled PUSCH            | 0 dB (accumulated TPC) as per Table 7.1.1-1 in TS 38.213 [22]  | "01"  |                             |
| SRS resource indicator                     | Not present  | -   |                             |
| Precoding information and number of layers | Not present (0 bits for 1 antenna port and if the higher layer parameter txConfig = Codebook as per clause 7.3.1.1.2 TS 38.212 [27]) | -   |                             |
|  | 2  | "10"  | 2TX_UL_MIMO or ULFPTx_Mode1 |
|  | Dependent on UE reported full power PMI  | 1 bit as per Table 7.3.1.1.2-5 in TS 38.212 | ULFPTx_Mode2                |
|  | 0 or 1   | 1 bit                                       | ULFPTx_ModeFull             |
| Antenna ports                              | Port 0 (NOTE 2)  | "000"                                       |                             |
|  |  | "00"  | TRANSFORM_PRECODER_ENABLED  |
| SRS request                                | No aperiodic SRS resource set triggered as per Table 7.3.1.1.2-24 in TS 38.212 (no SUL configured)                                   | "00"  |                             |
| CSI request                                | Not present  | -   |                             |
| CBG transmission information               | Not present  | -   |                             |
| PTRS-DMRS association                      | DMRS port 0  | "00"  | PTRS_UL_CONFIG              |
|  | Not present  | -   |                             |
| beta_offset indicator                      | Not present (0 bit if the higher layer parameter dynamic in uci-on-PUSCH is not configured)  | -   |                             |
| DMRS sequence initialization               | $n_{\text{SCID}} = 0$ (ScramblingID0 is not present as per Table 4.6.3-50)   | "0"   |                             |
|  | Not present  | -   | TRANSFORM_PRECODER_ENABLED  |

|   |   |   |  |
|---|---|---|--|
| UL-SCH indicator  | Dependent on test parameters<br>1 bit. A value of "1" indicates UL-SCH shall be transmitted on the PUSCH and a value of "0" indicates UL-SCH shall not be transmitted on the PUSCH. | - |  |
| NOTE 1: codebookSubset = nonCoherent, 2 layers, TPMI = 0 as specified in TS 38.212 [27] Table 7.3.1.1.2-4   |   |   |  |
| NOTE 2: Bitsize depends on transform precoder being enabled/disabled (PUSCH_Config, Table 4.6.3-118) and on dmrs-Type and maxLength (DMRS-UplinkConfig, Table 4.6.3-51); 3 bits (transform precoder disabled) or 2 bits (transform precoder enabled) for DMRS type 1 and len1 |   |   |  |

| Condition                  | Explanation   |
|----------------------------|---|
| 2TX_UL_MIMO                | UL-MIMO test cases with 2 Tx antenna ports  |
| PTRS_UL_CONFIG             | When PTRS Uplink is configured  |
| TRANSFORM_PRECODER_ENABLED | Transform precoding is enabled (PUSCH_Config, Table 4.6.3-118)                    |
| SUL                        | On the SUL carrier when supplementary carrier is configured                       |
| ULFPTx_Mode1               | UL-MIMO test cases with UEs supporting UL full power transmission Mode-1          |
| ULFPTx_Mode2               | UL-MIMO test cases with UEs supporting UL full power transmission Mode-2          |
| ULFPTx_ModeFull            | UL-MIMO test cases with UEs supporting UL full power transmission Mode-full power |

#### 4.3.6.1.2 Physical layer parameters for scheduling of PDSCH

##### 4.3.6.1.2.1 Physical layer parameters for DCI format 1\_0

DCI format 1\_0 is used for the scheduling of PDSCH in one cell.

Default physical layer parameters for DCI format 1\_0 are specified in table 4.3.6.1.2.1-1 to 4.3.6.1.2.1-4.

**Table 4.3.6.1.2.1-1: Physical layer parameters for DCI format 1\_0**

| Parameter                               | Value   | Value in binary            |
|---|---|----------------------------|
| Identifier for DCI formats              | Indicating a DL DCI format  | "01"                       |
| Frequency domain resource assignment    | Dependent on test parameters  | -                          |
| Time domain resource assignment         | Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used   | "0000"                     |
| VRB-to-PRB mapping                      | Non-interleaved   | "0"                        |
| Modulation and coding scheme            | Dependent on test parameters  | -                          |
| New data indicator                      | Set for every data transmission/retransmission according to the rules specified in TS 38.321  | -                          |
| Redundancy version                      | Dependent on test parameters  | -                          |
| HARQ process number                     | Dependent on test parameters  | -                          |
| Downlink assignment index               | Dependent on test parameters  | -                          |
| TPC command for scheduled PUCCH         | 0 dB (accumulated TPC) as per Table 7.2.1-1 in TS 38.213  | "01"                       |
| PUCCH resource indicator                | <i>PUCCH-ResourceId[7]</i> = 6 in pucch-ResourceSetID[1] or <i>PUCCH-ResourceId[7]</i> = 14 in pucch-ResourceSetID[2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213) | "110"                      |
| PDSCH-to-HARQ_feedback timing indicator | K <sub>1</sub> slots as specified in 9.2.3 in TS 38.213<br>μ=0 (SCS=15kHz): K <sub>1</sub> =7<br>μ=1 (SCS=30kHz): K <sub>1</sub> =5<br>μ=3 (SCS=120kHz): K <sub>1</sub> =8                      | '110'B<br>'100'B<br>'111'B |

**Table 4.3.6.1.2.1-2: Physical layer parameters for DCI format 1\_0 for paging**

| Parameter                            | Value   | Value in binary |
|--------------------------------------|---|-----------------|
| Short Messages Indicator             | Only scheduling information for Paging is present in the DCI                    | "01"            |
| Short Messages                       | Reserved  | -               |
| Frequency domain resource assignment | Dependent on test parameters  | -               |
| Time domain resource assignment      | Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used | "0000"          |
| VRB-to-PRB mapping                   | Non-interleaved   | "0"             |
| Modulation and coding scheme         | Dependent on test parameters  | -               |
| TB scaling                           | Scaling factor S=1 as defined in Table 5.1.3.2-2 in TS 38.214)                  | "00"            |
| Reserved bits                        | Reserved 6 bits   | -               |

**Table 4.3.6.1.2.1-3: Physical layer parameters for DCI format 1\_0 for SI**

| Parameter                            | Value   | Value in binary | Condition |
|--------------------------------------|---|-----------------|-----------|
| Frequency domain resource assignment | Dependent on test parameters  | -               | -         |
| Time domain resource assignment      | Indicating the first entry of Table 5.1.2.1.1-2 in TS 38.214 [21] to be used    | "0000"          | SIB1      |
|                                      | Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used | "0000"          | SI        |
| VRB-to-PRB mapping                   | Non-interleaved   | "0"             | -         |
| Modulation and coding scheme         | Dependent on test parameters  | -               | -         |
| Redundancy version                   | Dependent on test parameters  | -               | -         |
| System information indicator         | SIB1  | "0"             | SIB1      |
|                                      | SI message  | "1"             | SI        |
| Reserved bits                        | Reserved 15 bits  | -               | -         |

| Condition | Explanation                      |
|-----------|----------------------------------|
| SIB1      | Used for DCI format 1_0 for SIB1 |
| SI        | Used for DCI format 1_0 for SI   |

**Table 4.3.6.1.2.1-4: Physical layer parameters for DCI format 1\_0 for random access**

| Parameter                            | Value   | Value in binary |
|--------------------------------------|---|-----------------|
| Frequency domain resource assignment | Dependent on test parameters  | -               |
| Time domain resource assignment      | Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used | "0000"          |
| VRB-to-PRB mapping                   | Non-interleaved   | "0"             |
| Modulation and coding scheme         | Dependent on test parameters  | -               |
| Redundancy version                   | Dependent on test parameters  | -               |
| TB scaling                           | Scaling factor S=[1] as defined in Table 5.1.3.2-2 in TS 38.214)                | "00"            |
| Reserved bits                        | Reserved 16 bits  | -               |

#### 4.3.6.1.2.2 Physical layer parameters for DCI format 1\_1

DCI format 1\_1 is used for the scheduling of PDSCH in one cell.

Default physical layer parameters for DCI format 1\_1 are specified in table 4.3.6.1.2.2-1.

**Table 4.3.6.1.2.2-1: Physical layer parameters for DCI format 1\_1**

| Parameter                               | Value   | Value in binary         | Condition |
|---|---|-------------------------|-----------|
| Carrier indicator                       | Not present   | -                       |           |
| Identifier for DCI formats              | Indicating a DL DCI format  | "1"                     |           |
| Bandwidth part indicator                | Not present   | -                       |           |
| Frequency domain resource assignment    | Dependent on test parameters  | -                       |           |
| Time domain resource assignment         | Indicating the first entry of PDSCH-TimeDomainResourceAllocationList to be used   | "0000"                  |           |
| VRB-to-PRB mapping                      | Non-interleaved   | "0"                     |           |
| PRB bundling size indicator             | Not present (semi-static PRB_bundling)  | -                       |           |
| Rate matching indicator                 | Not present   | -                       |           |
| ZP CSI-RS trigger                       | Not present   | -                       |           |
| Modulation and coding scheme (TB1)      | Dependent on test parameters  | -                       |           |
| New data indicator (TB1)                | Set for every data transmission/retransmission according to the rules specified in TS 38.321 [20]   | -                       |           |
| Redundancy version (TB1)                | Dependent on test parameters  | -                       |           |
| Modulation and coding scheme (TB2)      | Dependent on test parameters  | -                       |           |
| New data indicator (TB2)                | Set for every data transmission/retransmission according to the rules specified in TS 38.321 [20]   | -                       |           |
| Redundancy version (TB2)                | Dependent on test parameters  | -                       |           |
| HARQ process number                     | Dependent on test parameters  | -                       |           |
| Downlink assignment index               | Dependent on test parameters  | -                       |           |
| TPC command for scheduled PUCCH         | 0 dB (accumulated TPC) as per Table 7.2.1-1 in TS 38.213 [22]   | "01"                    |           |
| PUCCH resource indicator                | <i>PUCCH-Resourceld[7] = 6 in pucch-ResourceSetID[1] or PUCCH-Resourceld[7] = 14 in pucch-ResourceSetID[2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213 [22])</i>   | "110"                   |           |
| PDSCH-to-HARQ_feedback timing indicator | <p>corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112</p> <p><math>\mu=0</math> (SCS=15kHz): K1=7<br/> <math>\mu=1</math> (SCS=30kHz): K1=5<br/> <math>\mu=3</math> (SCS=120kHz): K1=8</p> <p>corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112</p> <p>For 60KHz SCS<br/> K1 = 4 if <math>\text{mod}(i,5) = 0</math><br/> K1 = 3 if <math>\text{mod}(i,5) = 1</math><br/> K1 = 7 if <math>\text{mod}(i,5) = 2</math><br/> where i is slot index per frame; i = {0,...,39}</p> <p>For 120KHz SCS<br/> K1 = 4 if <math>\text{mod}(i,5) = 0</math><br/> K1 = 3 if <math>\text{mod}(i,5) = 1</math><br/> K1 = 7 if <math>\text{mod}(i,5) = 2</math><br/> where i is slot index per frame; i = {0,...,79}</p> | "101"<br>"011"<br>"110" | RF_FR2_DL |

|                                       |  |        |              |
|---------------------------------------|--|--------|--------------|
|                                       | <p>corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112</p> <p>For TDD<br/> <math>K1 = 4</math> if <math>\text{mod}(i,5) = 0</math><br/> <math>K1 = 3</math> if <math>\text{mod}(i,5) = 1</math><br/> <math>K1 = 2</math> if <math>\text{mod}(i,5) = 2</math><br/> where <math>i</math> is slot index per frame; <math>i = \{0, \dots, 9\}</math></p> <p>For FDD<br/> <math>K1 = 2</math></p>   |        | RF_FR1_15kHz |
|                                       | <p>For TDD<br/> corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112<br/> <math>K1 = 8</math> if <math>\text{mod}(i,10) = 0</math><br/> <math>K1 = 7</math> if <math>\text{mod}(i,10) = 1</math><br/> <math>K1 = 6</math> if <math>\text{mod}(i,10) = 2</math><br/> <math>K1 = 5</math> if <math>\text{mod}(i,10) = 3</math><br/> <math>K1 = 4</math> if <math>\text{mod}(i,10) = 4</math><br/> <math>K1 = 3</math> if <math>\text{mod}(i,10) = 5</math><br/> <math>K1 = 2</math> if <math>\text{mod}(i,10) = 6</math><br/> where <math>i</math> is slot index per frame; <math>i = \{0, \dots, 19\}</math></p> <p>For FDD<br/> <math>K1 = 2</math></p>   |        | RF_FR1_30kHz |
|                                       | <p>corresponding to K1 slots as per Table 9.2.3-1 in TS 38.213 [22] and dl-DataToUL-ACK in Table 4.6.3-112</p> <p>For TDD<br/> <math>K1 = 13</math> if <math>\text{mod}(i,20) = 2</math><br/> <math>K1 = 12</math> if <math>\text{mod}(i,20) = 3</math><br/> <math>K1 = 11</math> if <math>\text{mod}(i,20) = 4</math><br/> <math>K1 = 10</math> if <math>\text{mod}(i,20) = 5</math><br/> <math>K1 = 9</math> if <math>\text{mod}(i,20) = 6</math><br/> <math>K1 = 8</math> if <math>\text{mod}(i,20) = 7</math><br/> <math>K1 = 7</math> if <math>\text{mod}(i,20) = 8</math><br/> <math>K1 = 6</math> if <math>\text{mod}(i,20) = 9</math><br/> <math>K1 = 6</math> if <math>\text{mod}(i,20) = 10</math><br/> <math>K1 = 6</math> if <math>\text{mod}(i,20) = 11</math><br/> <math>K1 = 6</math> if <math>\text{mod}(i,20) = 12</math><br/> <math>K1 = 6</math> if <math>\text{mod}(i,20) = 13</math><br/> where <math>i</math> is slot index per frame; <math>i = \{0, \dots, 39\}</math></p> <p>For FDD<br/> <math>K1 = 2</math></p> |        | RF_FR1_60kHz |
| Antenna port(s)                       | DMRS port 0 as per Table 7.3.1.2.2-1 in TS 38.212 [27] ( <i>dmrs-Type</i> = DMRS type 1 and <i>maxLength</i> = len1 as per Table 4.6.3-50)   | "0000" |              |
| Transmission configuration indication | Not present (0 bits, <i>tci-PresentInDCI</i> = Not present as per Table 4.6.3-28)  | -      |              |
| SRS request                           | No aperiodic SRS resource set triggered as per Table 7.3.1.1.2-24 in TS 38.212 [27] (no SUL configured)  | "00"   |              |
| CBG transmission information          | Not present  | -      |              |
| CBG flushing out information          | Not present  | -      |              |
| DMRS sequence initialization          | fix length of 1 bit; '0'B for DMRS-DownlinkConfig.scramblingID0 (or physCellId if scramblingID0 is not present); see Table 4.6.3-50  | "0"    |              |

| Condition    | Explanation  |
|--------------|--|
| RF_FR1_15kHz | RF testing in TS 38.521-x for FR1. SCS is set to 15kHz.          |
| RF_FR1_30kHz | RF testing in TS 38.521-x for FR1. SCS is set to 30kHz.          |
| RF_FR1_60kHz | RF testing in TS 38.521-x for FR1. SCS is set to 60kHz.          |
| RF_FR2_DL    | RF testing in TS 38.521-x for FR2. SCS is set to 60kHz or 120kHz |

#### 4.3.6.1.3      Void

## 4.4      Reference system configurations

The reference system configurations specified in this sub clause apply to all test cases unless otherwise specified.

### 4.4.1      Simulated network scenarios

The simulated network scenarios will simulate UE operation in either standalone NR, standalone E-UTRA or in non-standalone NR and E-UTRA networks. For non-standalone case either the NR or the E-UTRA radio access acts as the master anchor node. For both standalone and non-standalone cases, the simulated networks may be single mode networks (FDD or TDD) or dual mode networks (FDD+TDD). For the standalone NR case the simulated networks may also be inter-RAT networks ((FDD or TDD) + (E-UTRA FDD or E-UTRA TDD)).

Simulated network scenarios to be tested are listed in this sub clause.

NOTE 1: The number of cells specified does not necessarily correspond to the maximum number of resources to be configured simultaneously in test equipment. Please refer to clause 6.1 for such information.

NOTE 2: For NAS test cases see sub clause 6.3.2.

#### 4.4.1.1      Standalone cell network scenarios

##### 4.4.1.1.1      Standalone E-UTRA single cell and multi cell network scenarios

For standalone E-UTRA FDD or TDD single cell environment see TS 36.508 [2], clause 4.4.1.1.

For standalone E-UTRA FDD or TDD multi cell network scenarios see TS 36.508 [2], clause 4.4.1.2.

##### 4.4.1.1.2      Standalone NR single cell network scenarios

For standalone NR FDD or TDD single cell environment, NR Cell 1 is used.

##### 4.4.1.1.3      Standalone NR single mode multi cell network scenarios

For standalone NR FDD or TDD intra-frequency multi cell environment, NR Cell 1, NR Cell 2 and NR Cell 4 are used.

For standalone NR FDD or TDD inter-frequency multi cell environment, NR Cell 1, NR Cell 3 and NR Cell 6 are used.

For standalone NR FDD or TDD inter-band cell environment, NR Cell 1 and NR Cell 10 are used.

For standalone NR FDD or TDD multi tracking area intra-frequency multi cell environment, NR Cell 1 and NR Cell 11 are used.

For standalone NR FDD or TDD multi tracking area inter-frequency multi cell environment, NR Cell 1 and NR Cell 23 are used.

For standalone NR FDD or TDD multi PLMN inter-frequency multi cell environment, NR Cell 1, NR Cell 12, NR Cell 13 and NR Cell 14 are used.

##### 4.4.1.1.4      Standalone NR dual mode multi cell network scenarios

For standalone NR FDD and TDD multi cell environment, NR Cell 1, NR Cell 10 and NR Cell 31 are used.

For standalone NR FDD and TDD multi PLMN multi cell environment, NR Cell 1, NR Cell 28, NR Cell 29 and NR Cell 30 are used.

In addition, standalone NR single mode multi cell network scenarios defined in clause 4.4.1.1.3 are combined with the dual mode scenarios defined in this clause when additional intra or inter-frequency cells are used.

#### 4.4.1.1.5 Standalone NR 3GPP Inter-RAT network scenarios

For standalone NR FDD or TDD single cell with E-UTRA FDD or E-UTRA TDD single cell inter-RAT environment:

- NR Cell 1 is used for the NR cell; and
- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell.

For standalone NR FDD or TDD single cell with E-UTRA FDD or E-UTRA TDD multi cell inter-RAT environment:

- NR Cell 1 is used for the NR cell; and
- Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and

#### 4.4.1.2 Non-standalone cell network scenarios

##### 4.4.1.2.1 Non-standalone E-UTRA single cell and NR single cell network scenarios

For non-standalone NR FDD or TDD single cell and E-UTRA FDD or TDD single cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1 is used for the NR cell.

##### 4.4.1.2.2 Non-standalone E-UTRA single cell and NR single mode multi cell network scenarios

For non-standalone E-UTRA single cell and FDD or TDD NR intra-frequency single mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 2 and NR Cell 4 are used for NR cells.

For non-standalone E-UTRA single cell and FDD or TDD NR inter-frequency single mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 3 and NR Cell 6 are used for the NR cells.

For non-standalone E-UTRA single cell and FDD or TDD NR inter-band single mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1 and NR Cell 10 are used for the NR cells.

##### 4.4.1.2.3 Non-standalone E-UTRA single mode multi cell and NR single mode multi cell network scenarios

For non-standalone E-UTRA intra-frequency single mode multi cell and FDD or TDD NR intra-frequency single mode multi cell environment:

- E-UTRA Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 2 and NR Cell 4 are used for NR cells.

For non-standalone FDD or TDD E-UTRA intra-frequency single mode multi cell and FDD or TDD NR inter-frequency single mode multi cell environment:

- E-UTRA Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 3 and NR Cell 6 are used for the NR cells.

For non-standalone FDD or TDD E-UTRA inter-frequency single mode multi cell and FDD or TDD NR inter-frequency single mode multi cell environment:

- E-UTRA Cell 1, Cell 3 and Cell 6, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 3 and NR Cell 6 are used for the NR cells.

For non-standalone single E-UTRA cell and FDD or TDD NR inter-band single mode multi cell environment:

- E-UTRA Cell 1, Cell 2 and Cell 4, as specified in TS 36.508 [2] clause 4.4.1.2, is used for the E-UTRA cell; and
- NR Cell 1 and NR Cell 10 are used for the NR cells.

#### 4.4.1.2.4 Non-standalone E-UTRA single cell and NR dual mode multi cell network scenarios

**Editor's note: It is FFS if the NR dual mode multi cell environment needs to include multiple E-UTRA cells in addition to the multiple NR cells.**

For non-standalone single E-UTRA cell and FDD and TDD NR dual mode multi cell environment:

- Cell 1, as specified in TS 36.508 [2] clause 4.4.1.1, is used for the E-UTRA cell; and
- NR Cell 1, NR Cell 10 and NR Cell 31 are used for the NR cells.

In addition, standalone NR single mode multi cell network scenarios defined in clause 4.4.1.2.2 are combined with the dual mode scenarios defined in this clause when additional intra or inter-frequency NR cells are used.

#### 4.4.1.3 Non-3GPP Accessss network scenarios

##### 4.4.1.3.1 WLAN network scenario

For non-3GPP access over WLAN single cell environment Cell 27, as specified in TS 36.508 [2] clauses 4.4.2 and 4.4.8 with condition 'TMSoWLAN' is used.

## 4.4.2 Simulated cells

NOTE 1: For NAS test cases see clause 6.3.2.

NOTE 2: Test frequency and range defined in table 4.4.2-1 do not apply to TS 38.521-1, TS 38.521-2 and TS 38.521-3 test cases.

Test frequencies and simulated NR cells are defined in table 4.4.2-1. Test frequencies and simulated E-UTRA cells are defined in TS 36.508 [2] table 4.4.2-1.

For NR cells, NRf1 is the default test frequency. For E-UTRA cells, f1 as specified in TS 36.508 [2] table 4.2.2-1 is the default test frequency.

Default parameters for simulated NR cells are specified in table 4.4.2-1A and table 4.4.2-2.

Default parameters for simulated E-UTRA cells are specified in TS 36.508 [2] table 4.4.2-1A and table 4.4.2-2.

Common parameters for NR simulated cells are specified in clauses 4.4.3 to 4.4.6A.

Common parameters for E-UTRA simulated cells are specified in TS 36.508 [2] clauses 4.4.3 to 4.4.6A.

Other cell specific parameters are specified in clause 4.4.7.

**Table 4.4.2-1: Definition of test frequencies and simulated NR cells**

| <b>Test frequency</b> | <b>RAT</b> | <b>Operating band</b>               | <b>Range</b>                | <b>Simulated NR cells</b>   |
|-----------------------|------------|-------------------------------------|-----------------------------|---|
| NRf1                  | NR         | Operating band under test           | Mid<br>(Note 1,<br>Note 3)  | NR Cell 1, NR Cell 2, NR Cell 4, NR Cell 11 (Note 2), NR Cell 489 |
| NRf2                  | NR         | Operating band under test           | High<br>(Note 1,<br>Note 3) | NR Cell 3, NR Cell 12, NR Cell 23                                 |
| NRf3                  | NR         | Operating band under test           | Low<br>(Note 1,<br>Note 3)  | NR Cell 6, NR Cell 13   |
| NRf4                  | NR         | Operating band under test           | (Note 1)                    | NR Cell 14  |
| NRf5                  | NR         | Operating band for inter-band cells | Mid<br>(Note 1)             | NR Cell 10, NR Cell 30, NR Cell 31                                |
| NRf6                  | NR         | Operating band for inter-band cells | High<br>(Note 1)            | NR Cell 28, NR Cell 29  |
| NRf7                  | NR         | Operating band for inter-band cells | Low<br>(Note 1)             |   |
| NRf8                  | NR         | Operating band for SDL cell         | Mid<br>(note 1)             | NR Cell 32  |
| NRf9                  | NR         | Operating band for SUL cell         | Mid<br>(note 1)             | NR Cell 33  |

Note 1: For signalling test, see clause 6.2.3.  
 Note 2: For signalling test, simultaneous co-existence of NR Cell 2 with NR Cell 11 is not allowed due to the same timing is used for Cell 2 and Cell 11 in 38.523-3 [23].  
 Note 3: For RRM test with NR intra-band non-contiguous CA, the test frequencies for the set of non-contiguous component carriers are specified in clauses 4.3.1.1.4 for FR1 and in clause 4.3.1.2.4 for FR2 without any regard to range. Thus "Low", "Mid" and "High" information in this table does not apply. Unless otherwise stated, test point with maximum Wgap is chosen.

**Table 4.4.2-2: Default NR parameters for simulated NR cells**

| cell ID    | NR Cell Identifier                           |                    | Physical layer cell identity | PRACH-rootSequenceIndex FDD | PRACH-rootSequenceIndex TDD | SSB-Index <sup>2</sup> |
|------------|--|--------------------|------------------------------|-----------------------------|-----------------------------|------------------------|
|            | gNB Identifier                               | Cell Identity      |                              | $L_{RA} = 139$<br>Note 1    | $L_{RA} = 139$<br>Note 1    |                        |
| NR Cell 1  | '00 0000<br>0000 0000<br>0000 0000<br>0001'B | '00 0000<br>0000'B | 0                            | 0                           | 0                           | 1                      |
| NR Cell 2  | '00 0000<br>0000 0000<br>0000 0000<br>0001'B | '00 0000<br>0010'B | 2                            | 32                          | 32                          | 0                      |
| NR Cell 3  | '00 0000<br>0000 0000<br>0000 0000<br>0010'B | '00 0000<br>0011'B | 3                            | 0                           | 0                           | 1                      |
| NR Cell 4  | '00 0000<br>0000 0000<br>0000 0000<br>0011'B | '00 0000<br>0100'B | 4                            | 64                          | 64                          | 1                      |
| NR Cell 6  | '00 0000<br>0000 0000<br>0000 0000<br>0100'B | '00 0000<br>0110'B | 6                            | 0                           | 0                           | 1                      |
| NR Cell 10 | '00 0000<br>0000 0000<br>0000 0000<br>0101'B | '00 0000<br>1010'B | 10                           | 0                           | 0                           | 1                      |
| NR Cell 11 | '00 0000<br>0000 0000<br>0000 0000<br>0110'B | '00 0000<br>1011'B | 11                           | 96                          | 96                          | 0                      |
| NR Cell 12 | '00 0000<br>0000 0000<br>0000 0000<br>0010'B | '00 0000<br>1100'B | 12                           | 32                          | 32                          | 0                      |
| NR Cell 13 | '00 0000<br>0000 0000<br>0000 0000<br>0100'B | '00 0000<br>1101'B | 13                           | 32                          | 32                          | 0                      |
| NR Cell 14 | '00 0000<br>0000 0000<br>0000 0000<br>0111'B | '00 0000<br>1110'B | 14                           | 0                           | 0                           | 1                      |
| NR Cell 23 | '00 0000<br>0000 0000<br>0000 0000<br>0110'B | '00 0001<br>0111'B | 23                           | 64                          | 64                          | 1                      |
| NR Cell 28 | '00 0000<br>0000 0000<br>0000 0000<br>0010'B | '00 0001<br>1100'B | 28                           | 0                           | 0                           | 1                      |
| NR Cell 29 | '00 0000<br>0000 0000<br>0000 0000<br>0100'B | '00 0001<br>1101'B | 29                           | 32                          | 32                          | 0                      |
| NR Cell 30 | '00 0000<br>0000 0000<br>0000 0000<br>0111'B | '00 0001<br>1110'B | 30                           | 32                          | 32                          | 0                      |
| NR Cell 31 | '00 0000<br>0000 0000<br>0000 0000<br>0110'B | '00 0001<br>1111'B | 31                           | 64                          | 64                          | 1                      |

|             |  |                    |     |     |     |     |   |
|-------------|--|--------------------|-----|-----|-----|-----|---|
| NR Cell 32  | '00 0000<br>0000 0000<br>0000<br>0001'B  | '00 0010<br>0000'B | 32  | -   | -   | -   | 1 |
| NR Cell 33  | '00 0000<br>0000 0000<br>0000<br>0001'B  | '00 0010<br>0001'B | 33  | -   | -   | -   | - |
| NR Cell 489 | '00 0000<br>0000 0000<br>0000 0000<br>0001'B   | '01 1110<br>1001'B | 489 | 128 | 128 | 128 | 0 |
| Note 1:     | To avoid collision of the preambles between intra-frequency cells, with the default <i>zeroCorrelationZoneConfig</i> value set to 15, the <i>PRACH-rootSequenceIndex</i> values have been separated by 32 root sequences per intra-frequency cell. |                    |     |     |     |     |   |
| Note 2:     | This SSB-Index does not apply for RRM test cases in TS 38.533 [18]. RRM test cases shall use the SSB index defined in A.3 of TS 38.533 [18].   |                    |     |     |     |     |   |

**Table 4.4.2-3: Default NAS parameters for simulated NR cells**

| cell ID   | Tracking Area |          |     | TA# list<br>(Note 1) | 5G-GUTI (Note 2) |            |             | 5G-TMSI |  |  |
|---|---------------|----------|-----|----------------------|------------------|------------|-------------|---------|--|--|
|   | TA#           | PLMN     |     |                      | AMF Identifier   |            |             |         |  |  |
|   |               | MCC      | MNC |                      | AMF region ID    | AMF Set ID | AMF Pointer |         |  |  |
| NR Cell 1   | TAI-1         | (Note 3) |     | 1                    | TAI-1            | 254        | 1           | 1       |  |  |
| NR Cell 2   | TAI-1         | (Note 3) |     | 1                    | TAI-1            | 254        | 1           | 1       |  |  |
| NR Cell 3   | TAI-1         | (Note 3) |     | 1                    | TAI-1            | 254        | 1           | 1       |  |  |
| NR Cell 4   | TAI-1         | (Note 3) |     | 1                    | TAI-1            | 254        | 1           | 1       |  |  |
| NR Cell 6   | TAI-1         | (Note 3) |     | 1                    | TAI-1            | 254        | 1           | 1       |  |  |
| NR Cell 10  | TAI-1         | (Note 3) |     | 1                    | TAI-1            | 254        | 1           | 1       |  |  |
| NR Cell 11  | TAI-2         | (Note 3) |     | 2                    | TAI-2            | 254        | 1           | 1       |  |  |
| NR Cell 23  | TAI-2         | (Note 3) |     | 2                    | TAI-2            | 254        | 1           | 1       |  |  |
| NR Cell 12,<br>NR Cell 28   | TAI-3         | 002      | 11  | 1                    | TAI-3            | 253        | 1           | 1       |  |  |
| NR Cell 13,<br>NR Cell 29   | TAI-4         | 003      | 21  | 1                    | TAI-4            | 252        | 1           | 1       |  |  |
| NR Cell 14,<br>NR Cell 30   | TAI-5         | 004      | 31  | 1                    | TAI-5            | 251        | 1           | 1       |  |  |
| NR Cell 31  | TAI-2         | (Note 3) |     | 2                    | TAI-2            | 254        | 1           | 1       |  |  |
| NR Cell 489   | TAI-1         | (Note 3) |     | 1                    | TAI-1            | 254        | 1           | 1       |  |  |
| Note 1: The value(s) in the column TA# list indicates TAI(s) included in the response messages of the registration procedure (REGISTRATION ACCEPT) when the UE performs the registration procedure on a corresponding cell. |               |          |     |                      |                  |            |             |         |  |  |
| Note 2: The value in the column 5G-GUTI indicates 5G-GUTI included in the response messages of the registration procedure (REGISTRATION ACCEPT) when the UE performs the registration procedure on a corresponding cell.    |               |          |     |                      |                  |            |             |         |  |  |
| Note 3: Set to the same Mobile Country Code and Mobile Network Code stored in EF <sub>IMSI</sub> on the test USIM card (subclause 4.9.3).   |               |          |     |                      |                  |            |             |         |  |  |

#### 4.4.3 Common parameters for simulated NR cells

The parameters specified in this sub clause apply to the simulated NR cells in standalone NR and non-standalone network scenarios unless otherwise specified.

The common parameters for the simulated E-UTRA cells for standalone E-UTRA and non-standalone network scenarios are specified in TS 36.508 [2] clause 4.4.3 unless otherwise specified.

#### 4.4.3.1 Common configurations of system information blocks

##### 4.4.3.1.1 Combinations of system information blocks for E-UTRA standalone, EN-DC and NGEN-DC

The combination of system information blocks for standalone E-UTRA, EN-DC and NGEN-DC network scenarios are specified in TS 36.508 [2] clause 4.4.3.1.

For EN-DC and NGEN-DC network scenarios the SS shall in addition to broadcasting the E-UTRA system information blocks also broadcast the NR MIB on the NR cell(s).

##### 4.4.3.1.2 Combinations of system information blocks for NR standalone and NE-DC

The combination of system information blocks required by a test case depends on the test case scenario. In this clause, several combinations of system information blocks are defined.

Regardless of the combination of system information blocks indicated as being used by a test case, the SS shall broadcast only the NR MIB on the NR Cell(s) configured on an SDL band.

Combination NR-1 is the default combination which applies to the following test case scenarios:

- NR FDD single cell scenario
- NR TDD single cell scenario

Combination NR-2 applies to the following test case scenarios:

- NR FDD intra-frequency multi cell scenario
- NR TDD intra-frequency multi cell scenario
- NR FDD and NR TDD dual mode multi cell roaming scenario

Combination NR-3 applies to the following test case scenarios:

- NR FDD intra-frequency multi cell scenario with neighbouring cell related information
- NR TDD intra-frequency multi cell scenario with neighbouring cell related information

Combination NR-4 applies to the following test case scenarios:

- NR FDD inter-frequency multi cell scenario
- NR TDD inter-frequency multi cell scenario
- NR FDD inter-band multi cell scenario
- NR TDD inter-band multi cell scenario
- NR FDD and NR TDD dual mode multi cell non-roaming scenario
- NR FDD intra-band carrier aggregation component carriers cell scenario
- NR FDD inter-band carrier aggregation component carriers cell scenario
- NR TDD intra-band carrier aggregation component carriers cell scenario
- NR FDD and NR TDD inter-band carrier aggregation component carriers cell scenario

Combination NR-5 applies to the following test case scenarios:

- NR FDD intra-band carrier aggregation component carriers cell scenario + NR FDD intra-frequency neighbour.
- NR FDD inter-band carrier aggregation component carriers cell scenario+ NR FDD intra-frequency neighbour.
- NR TDD intra-band carrier aggregation component carriers cell scenario+ NR FDD intra-frequency neighbour.

- NR FDD and NR TDD inter-band carrier aggregation component carriers cell scenario+ NR FDD intra-frequency neighbour.

Combination NR-6 applies to the following test case scenarios:

- 3GPP inter-RAT NR FDD + E-UTRA FDD multi cell scenario
- 3GPP inter-RAT NR TDD + E-UTRA TDD multi cell scenario
- 3GPP inter-RAT NR TDD + E-UTRA FDD multi cell scenario

Combination NR-7 applies to the following test case scenarios:

- NR FDD inter-frequency + 3GPP inter-RAT E-UTRA multi-cell scenario
- NR TDD inter-frequency + 3GPP inter-RAT E-UTRA multi-cell scenario

Combination NR-8 applies to the following test case scenarios:

- NR FDD ETWS single cell scenario
- NR TDD ETWS single cell scenario

Combination NR-9 applies to the following test case scenarios:

- 3GPP NR FDD + CMAS single cell scenario
- 3GPP NR TDD + CMAS single cell scenario

Combination NR-10 applies to the following test case scenarios:

- 3GPP NR FDD + ETWS primary notification single cell scenario
- 3GPP NR TDD + ETWS primary notification single cell scenario

Combination NR-11 applies to the following test case scenarios:

- 3GPP NR FDD + ETWS secondary notification single cell scenario
- 3GPP NR TDD + ETWS secondary notification single cell scenario

**Table 4.4.3.1.2-1: Combinations of system information blocks**

| <b>Combination No.</b> | <b>System information block type</b> |             |             |             |             |             |             |             |
|------------------------|--------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                        | <b>SIB1</b>                          | <b>SIB2</b> | <b>SIB3</b> | <b>SIB4</b> | <b>SIB5</b> | <b>SIB6</b> | <b>SIB7</b> | <b>SIB8</b> |
| NR-1                   | X                                    |             |             |             |             |             |             |             |
| NR-2                   | X                                    | X           |             |             |             |             |             |             |
| NR-3                   | X                                    | X           | X           |             |             |             |             |             |
| NR-4                   | X                                    | X           |             | X           |             |             |             |             |
| NR-5                   | X                                    | X           | X           | X           |             |             |             |             |
| NR-6                   | X                                    | X           |             |             | X           |             |             |             |
| NR-7                   | X                                    | X           |             | X           | X           |             |             |             |
| NR-8                   | X                                    |             |             |             |             | X           | X           |             |
| NR-9                   | X                                    |             |             |             |             |             |             | X           |
| NR-10                  | X                                    |             |             |             |             | X           |             |             |
| NR-11                  | X                                    |             |             |             |             |             | X           |             |

#### 4.4.3.1.3 Scheduling of system information blocks

The scheduling configurations for combinations of system information blocks are defined in the following tables. There is no scheduling information for combination NR-1.

**Table 4.4.3.1.3-1: Scheduling for combination NR-2**

| Scheduling Information No. | Periodicity [radio frames] | Mapping of system information blocks |
|----------------------------|----------------------------|--------------------------------------|
| 1                          | 32                         | SIB2                                 |

**Table 4.4.3.1.3-2: Scheduling for combination NR-3**

| Scheduling Information No. | Periodicity [radio frames] | Mapping of system information blocks |
|----------------------------|----------------------------|--------------------------------------|
| 1                          | 32                         | SIB2                                 |
| 2                          | 64                         | SIB3                                 |

**Table 4.4.3.1.3-3: Scheduling for combination NR-4**

| Scheduling Information No. | Periodicity [radio frames] | Mapping of system information blocks |
|----------------------------|----------------------------|--------------------------------------|
| 1                          | 32                         | SIB2                                 |
| 2                          | 64                         | SIB4                                 |

**Table 4.4.3.1.3-4: Scheduling for combination NR-5**

| Scheduling Information No. | Periodicity [radio frames] | Mapping of system information blocks |
|----------------------------|----------------------------|--------------------------------------|
| 1                          | 32                         | SIB2                                 |
| 2                          | 64                         | SIB3                                 |
| 3                          | 64                         | SIB4                                 |

**Table 4.4.3.1.3-5: Scheduling for combination NR-6**

| Scheduling Information No. | Periodicity [radio frames] | Mapping of system information blocks |
|----------------------------|----------------------------|--------------------------------------|
| 1                          | 32                         | SIB2                                 |
| 2                          | 64                         | SIB5                                 |

**Table 4.4.3.1.3-6: Scheduling for combination NR-7**

| Scheduling Information No. | Periodicity [radio frames] | Mapping of system information blocks |
|----------------------------|----------------------------|--------------------------------------|
| 1                          | 32                         | SIB2                                 |
| 2                          | 64                         | SIB4, SIB5                           |

**Table 4.4.3.1.3-7: Scheduling for combination NR-8**

| Scheduling Information No. | Periodicity [radio frames] | Mapping of system information blocks |
|----------------------------|----------------------------|--------------------------------------|
| 1                          | 32                         | SIB6                                 |
| 2                          | 32                         | SIB7                                 |

**Table 4.4.3.1.3-8: Scheduling for combination NR-9**

| Scheduling Information No. | Periodicity [radio frames] | Mapping of system information blocks |
|----------------------------|----------------------------|--------------------------------------|
| 1                          | 32                         | SIB8                                 |

**Table 4.4.3.1.3-9: Scheduling for combination NR-10**

| Scheduling Information No. | Periodicity [radio frames] | Mapping of system information blocks |
|----------------------------|----------------------------|--------------------------------------|
|                            | 32                         | SIB6                                 |

**Table 4.4.3.1.3-10: Scheduling for combination NR-11**

| Scheduling Information No. | Periodicity [radio frames] | Mapping of system information blocks |
|----------------------------|----------------------------|--------------------------------------|
| 1                          | 32                         | SIB7                                 |

## 4.4A Test states

### 4.4A.1 General

The purpose of the test states is to get the UE into specific 5GC and RRC protocol states in the initial condition of test cases. Each test state is identified by a test state ID. The syntax used for test state IDs is described in sub-clause 4.4A.4. The list of defined test states and the associated UE 5GC and RRC/ N3AN protocol states are specified in sub-clause 4.4A.2.

A test case may request that one or more test functions and/or configurations are activated/configured by the SS as part of the procedure used for the requested test state. The test case requests the additional test functions and/or configurations by specifying one or more test state parameters. The list of defined test state parameters is specified in sub-clause 4.4A.3.

### 4.4A.2 Test states and associated 5GC and RRC protocol states

**Table 4.4A.2-0: 5GC and RRC/N3AN protocol states for UE Switched Off**

| 5GS state ID | Connectivity | RRC/N3AN state | 5GMM modes | 5GMM sublayer | 5GSM sublayer | Comments  |
|--------------|--------------|----------------|------------|---------------|---------------|---|
| 0-A          | -            | -              | -          | -             | -             | UE switched off. No change to PLMN stored in the USIM       |
| ON-B         | NR           | -              | -          | -             | -             | UE switched off with the PLMN under test stored in the USIM |
| 0E-B         | E-UTRA       | -              | -          | -             | -             |   |
| 0W-B         | WLAN         | -              | -          | -             | -             |   |

**Table 4.4A.2-1: 5GC and RRC/N3AN protocol states for IDLE**

| 5GS state ID | Connectivity | RRC/N3AN state      | 5GMM modes | 5GMM sublayer   | 5GSM sublayer        |
|--------------|--------------|---------------------|------------|-----------------|----------------------|
| 1N-A         | NR           | NR RRC_IDLE         | 5GMM-IDLE  | 5GMM-REGISTERED | PDU SESSION INACTIVE |
|              |              |                     |            |                 | PDU SESSION ACTIVE   |
| 1E-A         | E-UTRA       | EUTRA RRC_IDLE      | 5GMM-IDLE  | 5GMM-REGISTERED | PDU SESSION INACTIVE |
|              |              |                     |            |                 | PDU SESSION ACTIVE   |
| 1W-A         | WLAN         | Ipsec_SA_Rereleased | 5GMM-IDLE  | 5GMM-REGISTERED | PDU SESSION INACTIVE |
|              |              |                     |            |                 | PDU SESSION ACTIVE   |

**Table 4.4A.2-2: 5GC and RRC protocol states for INACTIVE**

| 5GS state ID | Connectivity | RRC state          | 5GMM modes     | 5GMM sublayer   | 5GSM sublayer        |
|--------------|--------------|--------------------|----------------|-----------------|----------------------|
| 2N-A         | NR           | NR RRC_INACTIVE    | 5GMM-CONNECTED | 5GMM-REGISTERED | PDU SESSION INACTIVE |
|              |              |                    |                |                 | PDU SESSION ACTIVE   |
| 2E-A         | E-UTRA       | EUTRA RRC_INACTIVE | 5GMM-CONNECTED | 5GMM-REGISTERED | PDU SESSION INACTIVE |
|              |              |                    |                |                 | PDU SESSION ACTIVE   |

**Table 4.4A.2-3: 5GC and RRC/N3AN protocol states for CONNECTED**

| 5GS state ID | Connectivity | RRC/N3AN state       | 5GMM modes     | 5GMM sublayer   | 5GSM sublayer        |
|--------------|--------------|----------------------|----------------|-----------------|----------------------|
| 3N-A         | NR           | NR RRC_CONNECTED     | 5GMM-CONNECTED | 5GMM-REGISTERED | PDU SESSION INACTIVE |
|              |              |                      |                |                 | PDU SESSION ACTIVE   |
| 3E-A         | E-UTRA       | EUTRA RRC_CONNECTED  | 5GMM-CONNECTED | 5GMM-REGISTERED | PDU SESSION INACTIVE |
|              |              |                      |                |                 | PDU SESSION ACTIVE   |
| 3W-A         | WLAN         | Ipsec_SA_Established | 5GMM-CONNECTED | 5GMM-REGISTERED | PDU SESSION INACTIVE |
|              |              |                      |                |                 | PDU SESSION ACTIVE   |

### 4.4A.3 Test state parameters

Table 4.4A.3-1 lists the test functions and configurations that a test case can request to be activated/configured. A test case requests a test function or configuration to be used in the preamble by including the test state parameter text in the preamble statement of the test case in *italics*.

Editor's Note: The test state parameters are currently limited to test functions required by standalone NR. Additional test state parameters will be added in future as needed. E.g. for EN-DC, NE-DC and NGEN-DC there will be a need for parameters for bearer type (MCG and SCG, MCG and split or MCG only).

**Table 4.4A.3-1: Test state parameters**

| <b>Test state parameter</b>                 | <b>Description</b>  |
|---|---|
| <i>UE test loop mode &lt;X&gt; prepared</i> | If included the UE test mode is activated in the preamble indicating that UE test loop mode <X> will be activated in the test case test procedure, where <X> is A or B.<br>(Note 1, Note 2, Note 3) |
| <i>UE test loop mode &lt;X&gt; active</i>   | If included the UE Test Mode and UE test loop mode <X> will be activated in the preamble, where <X> is A or B.<br>(Note 1, Note 2, Note 3)  |
| Note 1:                                     | See TS 38.509 [11], clause 5.2.2 for details of UE test mode.   |
| Note 2:                                     | See TS 38.509 [11], clause 5.3.4.1 for details of UE test loop mode A.  |
| Note 3:                                     | See TS 38.509 [11], clause 5.3.4.2.2 for details of UE test loop mode B.  |

#### 4.4A.4 Test state ID syntax

A test state ID is defined as:

<RRC state><Connectivity>-<Variant>

, where <RRC state>, <Connectivity> and <Variant> are defined in Table 4.4A.2-1.

**Table 4.4A.4-1: Test state fields**

| <b>Test state field</b> | <b>Value</b> | <b>Description</b>   |
|-------------------------|--------------|--|
| <RRC state>             | 0            | Indicates that the requested test state will end up in SWITCHED_OFF state.                                 |
|                         | 1            | Indicates that the requested test state will end up in RRC_IDLE/Ipsec_SA Released state.                   |
|                         | 2            | Indicates that the requested test state will end up in RRC_INACTIVE state.                                 |
|                         | 3            | Indicates that the requested test state will end up in RRC_CONNECTED/Ipsec_SA Released state.              |
| <Connectivity>          | E            | E-UTRA is used as the initial access.  |
|                         | N            | NR is used as the initial access.  |
|                         | W            | Un trusted non 3GPP Access over WLAN is used as the initial access   |
| <Variant>               | A            | A, B, C etc. used to represent different variants within a <RRC state><Connectivity> group of test states. |

#### 4.4A.5 Mapping of test state IDs and test parameters to generic procedures, generic procedure parameters and specific message conditions

Depending on the test case preamble requested test state ID and test parameters the SS shall:

- 1> use the applicable generic procedure as specified in Table 4.4A.5-1 using the:
- 2> applicable generic procedure parameters as specified in Table 4.4A.5-1 and Table 4.4A.5-2; and
- 2> applicable message conditions as specified in Table 4.4A.5-2.

**Table 4.4A.5-1: Test state ID mapping to generic procedures and Connectivity generic procedure parameter**

| Test state ID   |                    |               | Generic Procedure    |                                      |        |
|-----------------|--------------------|---------------|----------------------|--------------------------------------|--------|
| RRC state field | Connectivity field | Variant field | Name                 | Generic procedure parameter (Note 1) | Clause |
| 0               | -                  | A             | SWITCHED_OFF         |                                      | 4.5.5  |
| 0               | N                  | B             | SWITCHED_OFF         | Connectivity=NR                      | 4.5.5  |
| 0               | E                  | B             | SWITCHED_OFF         | Connectivity=E-UTRA                  | 4.5.5  |
| 0               | W                  | B             | SWITCHED_OFF         | Connectivity=WLAN                    | 4.5.5  |
| 1               | N                  | A             | RRC_IDLE             | Connectivity=NR                      | 4.5.2  |
| 1               | E                  | A             | RRC_IDLE             | Connectivity=E-UTRA                  | 4.5.2  |
| 1               | W                  | A             | Ipsec_SA_Released    | Connectivity=WLAN                    | 4.5.2  |
| 2               | N                  | A             | RRC_INACTIVE         | Connectivity=NR                      | 4.5.3  |
| 2               | E                  | A             | RRC_INACTIVE         | Connectivity=E-UTRA                  | 4.5.3  |
| 3               | N                  | A             | RRC_CONNECTED        | Connectivity=NR                      | 4.5.4  |
| 3               | E                  | A             | RRC_CONNECTED        | Connectivity=E-UTRA                  | 4.5.4  |
| 3               | W                  | A             | Ipsec_SA_Established | Connectivity=WLAN                    | 4.5.4  |

Note 1: In addition to the Connectivity parameter specified in this table the applicable additional generic procedure parameters and conditions as stated in Table 4.4A.5-2 shall be used

**Table 4.4A.5-2: Additional generic procedure parameters and message conditions**

| Test state parameter                | Additional generic procedure parameter(s) | Specific message conditions          |                     |
|-------------------------------------|---|--------------------------------------|---------------------|
|                                     |   | Message                              | Condition           |
| <i>UE test loop mode A prepared</i> | Test Mode=On                              | Note 1                               | Note 1              |
| <i>UE test loop mode B prepared</i> | Test Mode=On                              | ACTIVATE UE TEST MODE<br>(Table FFS) | UE test loop mode B |
| <i>UE test loop mode A active</i>   | Test Loop Function=On                     | Note 1                               | Note 1              |
| <i>UE test loop mode B active</i>   | Test Loop Function=On                     | ACTIVATE UE TEST MODE<br>(Table FFS) | UE test loop mode B |
|                                     |   | CLOSE UE TEST LOOP<br>(Table FFS)    | UE test loop mode B |

Note 1: For test state parameters *UE test loop mode A prepared* and *UE test loop mode A active* there is no specific message conditions needed as the default UE test loop mode in the messages ACTIVATE UE TEST MODE and CLOSE UE TEST LOOP is UE test loop mode A.

## 4.5 Generic procedures

### 4.5.1 General

The generic procedures are used by test cases to get UE under test into SWITCHED\_OFF, RRC\_IDLE/Ipsec SA not established, RRC\_INACTIVE or RRC\_CONNECTED/Ipsec SA established state.

A test case controls the SS by specifying the required RRC state and a set of generic procedure parameters applicable for the intended testing.

The connectivity *EN-DC* is MR-DC via E-UTRA-NR Dual Connectivity. This is a UE connected to the EPC. The connectivity *E-UTRA/5GC*, *NR*, *NGEN-DC*, *NE-DC* and *NR-DC* are all a UE connected to the 5GC.

The connectivity *E-UTRA/EPC* is E-UTRA connected to the EPC as specified in the present document.

**Table 4.5.1-1: Generic procedure parameters**

| Parameter    | Values            | Description             | Parameter condition |
|--------------|-------------------|-------------------------|---------------------|
| Connectivity | <i>E-UTRA/5GC</i> | E-UTRA connected to 5GC | Mandatory           |

|  |                         |   |   |
|--|-------------------------|---|---|
|  | <i>NR</i>               | NR connected to 5GC   |   |
|  | <i>EN-DC</i>            | E-UTRA-NR Dual Connectivity with E-UTRA connected to EPC  |   |
|  | <i>NGEN-DC</i>          | E-UTRA-NR Dual Connectivity with E-UTRA connected to 5GC  |   |
|  | <i>NE-DC</i>            | NR E-UTRA Dual Connectivity   |   |
|  | <i>NR-DC</i>            | NR-NR Dual Connectivity   |   |
|  | <i>WLAN</i>             | Un trusted non 3GPP access over WLAN  |   |
|  | <i>E-UTRA/EPC</i>       | E-UTRA connected to EPC   |   |
| Bearers                                      | <i>MCG(s) and SCG</i>   | MCG and SCG   | Mandatory when Connectivity is set to <i>EN-DC</i> , <i>NGEN-DC</i> , <i>NE-DC</i> and <i>NR-DC</i> and when the generic procedures are used by test cases to get UE under test into RRC_CONNECTED state.<br>s=1 if MULTI_PDN= FALSE and s=2 if MULTI_PDN=TRUE.<br><i>MCG(s) only</i> is N/A when Connectivity is set to <i>NR-DC</i> .<br>N/A otherwise. |
|  | <i>MCG(s) and split</i> | MCG and split   |   |
|  | <i>MCG(s) only</i>      | MCG only  |   |
| Test Mode                                    | <i>On</i>               | UE test mode active as specified in TS 38.509 [11], clause 5.2.2.   | Optional  |
| Test Loop Function                           | <i>On</i>               | UE test mode active with one of the UE test loop modes activated as specified in TS 38.509 [11], clauses 5.2.2 and 5.3.2. | Optional  |
| Connected without release                    | <i>On</i>               | Enter RRC_Connected with Ipsec_SA_Established and without any release.  | Optional<br>N/A for <i>NR-DC</i> .  |
| Interworking without N26 interface supported | <i>On</i>               | The NWK sets the REGISTRATION ACCEPT message, IE 5GS network feature support, IWK N26 (octet 3, bit 7) = 1                | Optional,<br>Depends on test case scenario. Default message content for REGISTRATION ACCEPT is set to Interworking without N26 interface NOT supported  |

Editor's Note: The following values are not available to use in the current version of this specification because details are still FFS: Connectivity (E-UTRA/5GC, NGEN-DC and NE-DC).

## 4.5.2 RRC\_IDLE

### 4.5.2.1 Initiation

The SS shall:

- 1> if connectivity is *EN-DC*:
- 2> use 1 E-UTRA cell and 1 NR cell, default parameters;
- 2> if connected without release is not present:
  - 3> perform according to the table 4.5.2.2-1: E-UTRA RRC\_IDLE;
- 1> if connectivity is *E-UTRA/EPC*:
  - 2> use 1 E-UTRA cell, default parameters;
  - 2> perform according to the table 4.5.2.2-5: E-UTRA RRC\_IDLE Unrestricted nr PDN;
  - 2> if pc\_noOf\_PDNsNewConnection > 0

3> perform according to the table 4.5.2.2-6: E-UTRA RRC\_IDLE Unrestricted nr PDN Extension;

1> if connectivity is *NR*:

2> use 1 NR cell, default parameters;

2> perform according to the table 4.5.2.2-2: NR RRC\_IDLE;

2> if pc\_noOf\_PDUsNewConnection > 0

3> perform according to the table 4.5.2.2-4: NR RRC\_IDLE Extension;

1> if connectivity is *WLAN*:

2> use 1 WLAN cell, default parameters;

2> if connected without release is not present:

3> perform according to the table 4.5.2.2-3: WLAN Ipsec\_SA Released;

2> else:

3> Not defined:

1> if connectivity is *NR-DC*:

2> use 2 NR cells, default parameters;

2> perform according to the table 4.5.2.2-2: NR RRC\_IDLE.

**Editor's Note:** The value of specify "default parameters" is FFS. For *NR-DC* the requirement is 2 cells, but details might be required for specific test cases. For other connectivities the same assumption applies for 1 cell.

#### 4.5.2.2 Procedures

**Table 4.5.2.2-1: E-UTRA RRC\_IDLE**

| St                     | Procedure   | Message Sequence |         | TP | Verdict |
|------------------------|---|------------------|---------|----|---------|
|                        |   | U - S            | Message |    |         |
| 1-9a2                  | Same as TS 36.508 [2] table 4.5.2.3-1, steps 1-9a2.   | -                | -       | -  | -       |
| -                      | EXCEPTION: Steps 10a1 to 10b8 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value. | -                | -       | -  | -       |
| 10a1<br>-<br>10a1<br>0 | IF Test Mode = On OR Test Loop Function = On THEN steps 10-19 as defined in TS 36.508 [2] table 4.5.2A.3-1, are performed.<br>The ACTIVATE TEST MODE is using the associated condition for the test loop.   | -                | -       | -  | -       |
| 10b1<br>-<br>10b8      | ELSE steps 10-17 as defined in TS 36.508 [2], table 4.5.2.3-1 are performed.  | -                | -       | -  | -       |

**Table 4.5.2.2-2: NR RRC\_IDLE**

| St   | Procedure   | Message Sequence |   | TP | Verdict |
|------|---|------------------|---|----|---------|
|      |   | U - S            | Message   |    |         |
| 1    | -   | <--              | NR RRC: SYSTEM INFORMATION (BCCH)                                     | -  | -       |
| 2    | The UE transmits an <i>RRCSetupRequest</i> message.   | -->              | NR RRC: <i>RRCSetupRequest</i>  | -  | -       |
| 3    | The SS transmits an <i>RRCSetup</i> message.  | <--              | NR RRC: <i>RRCSetup</i>   | -  | -       |
| 4    | The UE transmits an <i>RRCSetupComplete</i> message and a REGISTRATION REQUEST message.   | -->              | NR RRC: <i>RRCSetupComplete</i><br>5GMM: REGISTRATION REQUEST         | -  | -       |
| 5    | The SS transmits a <i>DLInformationTransfer</i> message and an AUTHENTICATION REQUEST message.  | <--              | NR RRC: <i>DLInformationTransfer</i><br>5GMM: AUTHENTICATION REQUEST  | -  | -       |
| 6    | The UE transmits an <i>ULInformationTransfer</i> message and an AUTHENTICATION RESPONSE message.  | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: AUTHENTICATION RESPONSE | -  | -       |
| 7    | Void  | -                | -   | -  | -       |
| 8    | The SS transmits a <i>DLInformationTransfer</i> message and a SECURITY MODE COMMAND message.  | <--              | NR RRC: <i>DLInformationTransfer</i><br>5GMM: SECURITY MODE COMMAND   | -  | -       |
| 9    | The UE transmits an <i>ULInformationTransfer</i> message and a SECURITY MODE COMPLETE message.  | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: SECURITY MODE COMPLETE  | -  | -       |
| -    | EXCEPTION: Step 9Aa1 to 9Aa2 describes behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that takes place if a capability is supported and the procedure parameter Interworking without N26 interface supported is not present. | -                | -   | -  | -       |
| 9Aa1 | IF UE_S1_SUPPORTED the SS transmits a <i>DLInformationTransfer</i> message and a SECURITY MODE COMMAND message.   | <--              | NR RRC: <i>DLInformationTransfer</i><br>5GMM: SECURITY MODE COMMAND   | -  | -       |
| 9Aa2 | The UE transmits an <i>ULInformationTransfer</i> message and a SECURITY MODE COMPLETE message.  | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: SECURITY MODE COMPLETE  | -  | -       |
| -    | EXCEPTION: Steps 9a1 to 9a2 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value  | -                | -   | -  | -       |
| 9a1  | IF Test Mode = On OR Test Loop Function = On, the SS transmits an ACTIVATE TEST MODE message to activate UE radio bearer test mode procedure. The ACTIVATE TEST MODE message is using the associated condition for the test loop.   | <--              | RRC: <i>DLInformationTransfer</i><br>TC: ACTIVATE TEST MODE           | -  | -       |
| 9a2  | The UE transmits an ACTIVATE TEST MODE COMPLETE message.  | -->              | RRC: <i>ULInformationTransfer</i><br>TC: ACTIVATE TEST MODE COMPLETE  | -  | -       |
| 10   | The SS transmits a <i>SecurityModeCommand</i> message.  | <--              | NR RRC: <i>SecurityModeCommand</i>                                    | -  | -       |
| 11   | The UE transmits a <i>SecurityModeComplete</i> message.   | -->              | NR RRC: <i>SecurityModeComplete</i>                                   | -  | -       |
| 12   | The SS transmits a <i>UECapabilityEnquiry</i> message.  | <--              | NR RRC: <i>UECapabilityEnquiry</i>                                    | -  | -       |
| 13   | The UE transmits a <i>UECapabilityInformation</i> message.  | -->              | NR RRC: <i>UECapabilityInformation</i>                                | -  | -       |
| 14   | The SS transmits a <i>DLInformationTransfer</i> message and a REGISTRATION ACCEPT message.  | <--              | NR RRC: <i>DLInformationTransfer</i><br>5GMM: REGISTRATION ACCEPT     | -  | -       |
| 15   | The UE transmits an <i>ULInformationTransfer</i> message and a REGISTRATION COMPLETE message.   | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: REGISTRATION COMPLETE   | -  | -       |
| 16   | Void  | -                | -   | -  | -       |

|        |   |     |  |   |   |
|--------|---|-----|--|---|---|
| 17     | Void  | -   | -  | - | - |
| 18     | Void  | -   | -  | - | - |
| -      | EXCEPTION: Step 19a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.  | -   | -  | - | - |
| 19a1   | IF pc_noOf_PDUsSameConnection > 0 THEN the generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = pc_noOf_PDUsSameConnection. | -   | -  | - | - |
| -      | EXCEPTION: Steps 19Aa1 to 19Aa2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.                                    | -   | -  | - | - |
| 19Aa 1 | IF connected without release is On AND Test Loop Function=On AND pc_noOf_PDUsNewConnection=0 THEN the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.                   | <-- | NR RRC: <i>DLInformationTransfer</i><br>TC: CLOSE UE TEST LOOP             | - | - |
| 19Aa 2 | The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.  | --> | NR RRC: <i>ULInformationTransfer</i><br>TC: CLOSE UE TEST LOOP<br>COMPLETE | - | - |
| -      | EXCEPTION: Step 20a1 depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.  | -   | -  | - | - |
| 20a1   | IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCRelease</i> message.   | <-- | NR RRC: <i>RRCRelease</i>  | - | - |

Table 4.5.2.2-3: WLAN Ipsec\_SA\_Released

| St   | Procedure  | Message Sequence |                               | TP | Verdict |
|------|--|------------------|-------------------------------|----|---------|
|      |  | U - S            | Message                       |    |         |
| 1    | The UE associates with the WLAN AP and obtains the local IP address.   | -                | -                             | -  | -       |
| 2    | The UE performs a dynamic selection of N3IWF using DNS query   | -                | -                             | -  | -       |
| -    | Exception: The UE establishes an IPsec tunnel in parallel to 5GC registration steps 3 to 7 as per the IKEv2 protocol as defined in TS 23.502 [33] clause 4.12.2.2 figure 4.12.2.2-1.                                       | -                | -                             | -  | -       |
| 3    | The UE transmits a REGISTRATION REQUEST message.   | -->              | 5GMM: REGISTRATION REQUEST    | -  | -       |
| 4    | The SS transmits an AUTHENTICATION REQUEST message including EAP-Request/AKA'-Challenge or 5G AKA Challenge.   | <--              | 5GMM: AUTHENTICATION REQUEST  | -  | -       |
| 5    | The UE transmits an AUTHENTICATION RESPONSE message including EAP-Response/AKA'-Challenge or 5G AKA Response.  | -->              | 5GMM: AUTHENTICATION RESPONSE | -  | -       |
| 6    | The SS transmits a SECURITY MODE COMMAND message including EAP-Success if EAP-AKA' used.   | <--              | 5GMM: SECURITY MODE COMMAND   | -  | -       |
| 7    | The UE transmits a SECURITY MODE COMPLETE message.   | -->              | 5GMM: SECURITY MODE COMPLETE  | -  | -       |
| 8    | The SS transmits a REGISTRATION ACCEPT message.  | <--              | 5GMM: REGISTRATION ACCEPT     | -  | -       |
| 9    | The UE transmits a REGISTRATION COMPLETE message.  | -->              | 5GMM: REGISTRATION COMPLETE   | -  | -       |
| 10   | The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2A, takes place performing establishment of UE-requested PDU session.  | -                | -                             | -  | -       |
| -    | EXCEPTION: Step 11a1 depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.                     | -                | -                             | -  | -       |
| 11a1 | IF <i>connected without release</i> is not present THEN generic procedure for SS-requested IPsec Secure tunnel disconnection, specified in subclause 4.5A.5, takes place performing disconnection of security association. | -                | -                             | -  | -       |

Note: The current procedure assumes UE establishes a single PDU session over Non 3GPP Access.

Table 4.5.2.2-4: NR RRC\_IDLE Extension

| St   | Procedure   | Message Sequence |  | TP | Verdict |
|------|---|------------------|--|----|---------|
|      |   | U - S            | Message  |    |         |
| 0    | Wait for 10 sec to allow the UE to start PDU session establishment automatically.<br>IF it does THEN stop the 10 sec timer and continue with the steps from step 2 onwards.<br>IF it does not and the 10 sec timer expires THEN go to step 1. | -                | -  | -  | -       |
| -    | EXCEPTION: Step 1a1 depends on the status of the UE; the "lower case letter" identifies a step sequence that take place if a PDU connection is already active.  | -                | -  | -  | -       |
| 1a1  | IF there is no PDU connection already active THEN Trigger the UE to perform PDU session establishment via AT or MMI command.  | -                | -  | -  | -       |
| 2-6  | Steps 2-6 from Table 4.5.4.2-3 are performed.   | -                | -  | -  | -       |
| 7    | The SS transmits a SERVICE ACCEPT message.  | <--              | NR RRC: <i>DLInformationTransfer</i><br>5GMM: SERVICE ACCEPT               | -  | -       |
| 8    | The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = pc_noOf_PDUsNewConnection.         | -                | -  | -  | -       |
| -    | EXCEPTION: Steps 8Aa1 to 8Aa2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.      | -                | -  | -  | -       |
| 8Aa1 | IF connected without release is <i>On</i> AND Test Loop Function= <i>On</i> THEN the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.    | <--              | NR RRC: <i>DLInformationTransfer</i><br>TC: CLOSE UE TEST LOOP             | -  | -       |
| 8Aa2 | The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.  | -->              | NR RRC: <i>ULInformationTransfer</i><br>TC: CLOSE UE TEST LOOP<br>COMPLETE | -  | -       |
| -    | EXCEPTION: Step 9a1 depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.   | -                | -  | -  | -       |
| 9a1  | IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCRelease</i> message.   | <--              | NR RRC: <i>RRCRelease</i>  | -  | -       |

**Table 4.5.2.2-5: E-UTRA RRC\_IDLE Unrestricted nr PDN**

| St                | Procedure   | Message Sequence |   | TP | Verdict |
|-------------------|---|------------------|---|----|---------|
|                   |   | U - S            | Message   |    |         |
| 1-9a2             | Steps 1 to 9a2 of the generic procedure for UE Registration (State 2) as specified in TS 36.508 [2], table 4.5.2.3-1 take place.  | -                | -   | -  | -       |
| -                 | EXCEPTION: Steps 10a1 to 10b8 describe behaviour which depends on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.   | -                | -   | -  | -       |
| 10a1<br>-<br>10a8 | IF Test Mode = On OR Test Loop Function = On THEN steps 10-17 of the generic procedure for UE Registration, UE Test Mode Activated (State 2A) as specified in TS 36.508 [2] table 4.5.2A.3-1, take place.<br>The ACTIVATE TEST MODE is using the associated condition for the test loop.  | -                | -   | -  | -       |
| 10b1<br>-<br>10b6 | ELSE steps 10-15 as defined in TS 36.508 [2], table 4.5.2.3-1 take place.   | -                | -   | -  | -       |
| -                 | EXCEPTION: IF the 'IP address allocation' for the APN for which the PDN connection is established is set to "Yes" in Table 4.8.4-1 THEN, in parallel to the event described in step 10A below the generic procedure for IP address allocation in the U-plane specified in TS 36.508 [2], subclause 4.5A.1 takes place performing IP address allocation in the U-plane if requested by the UE. | -                | -   | -  | -       |
| -                 | EXCEPTION: IF the 'IMS registration' for the APN for which the PDN connection is established is set to "Yes" in Table 4.8.4-1, THEN in parallel to the event described in step 10A below the relevant generic procedure for IMS signalling in the U-plane specified in Table 4.8.4-1 takes place.   | -                | -   | -  | -       |
| 10A               | This message includes the ATTACH COMPLETE message. The ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT message is piggybacked in ATTACH COMPLETE.  | -->              | RRC: ULInformationTransfer<br>NAS: ATTACH COMPLETE<br>NAS: ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT | -  | -       |
| 11                | The Generic Test Procedure to establish multiple additional PDN connections as specified in subclause 4.5A.2B takes place, ExpectedNumberOfNewPDNConnections=pc_noOf_PDNsSameConnection.  | -                | -   | -  | -       |
| -                 | EXCEPTION: Steps 11Aa1 to 11Aa2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.  | -                | -   | -  | -       |
| 11Aa<br>1         | IF connected without release is On AND Test Loop Function=On AND pc_noOf_PDUsNewConnection =0 THEN the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.  | <--              | RRC: DLInformationTransfer<br>TC: CLOSE UE TEST LOOP  | -  | -       |
| 11Aa<br>2         | The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.  | -->              | RRC: ULInformationTransfer<br>TC: CLOSE UE TEST LOOP COMPLETE   | -  | -       |
| -                 | EXCEPTION: Step 12a1 depends on procedure parameters; the "lower case letter" identifies a step sequence that take place if a   | -                | -   | -  | -       |

|      |   |     |                                  |   |   |
|------|---|-----|----------------------------------|---|---|
|      | procedure parameter has a particular value.   |     |                                  |   |   |
| 12a1 | IF <i>connected without release</i> is not present<br>THEN, the SS transmits an<br><i>RRCConnectionRelease</i> message to release<br>RRC connection and move to E-UTRA<br>RRC_IDLE (State 2). | <-- | RRC: <i>RRCConnectionRelease</i> | - | - |

**Table 4.5.2.2-6: E-UTRA RRC\_IDLE Unrestricted nr PDN Extension**

| St   | Procedure  | Message Sequence |  | TP | Verdict |
|------|--|------------------|--|----|---------|
|      |  | U - S            | Message  |    |         |
| 0    | Wait for 10 sec to allow the UE to start PDN connection establishment automatically.<br>IF it does THEN stop the 10 sec timer and continue with the steps from step 2 onwards.<br>IF it does not and the 10 sec timer expires THEN go to step 1. | -                | -  | -  | -       |
| -    | EXCEPTION: Step 1a1 depends on the status of the UE; the "lower case letter" identifies a step sequence that take place if a PDU connection is already active.   | -                | -  | -  | -       |
| 1a1  | IF there is no PDN connection already active<br>THEN Trigger the UE to perform PDN connection establishment via AT or MMI command.   | -                | -  | -  | -       |
| 2-6  | Steps 3 to 7 of the generic procedure specified in TS 36.508 [2], table 4.5.3.3-1 take place.  | -                | -  | -  | -       |
| 7    | The Generic Test Procedure to establish multiple additional PDN connections as specified in subclause 4.5A.2B takes place, ExpectedNumberOfNewPDNConnections=pc_noOf_PDNsNewConnection.  | -                | -  | -  | -       |
| -    | EXCEPTION: Steps 7Aa1 to 7Aa2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.         | -                | -  | -  | -       |
| 7Aa1 | IF <i>connected without release</i> is On AND Test Loop Function=On THEN the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.               | <--              | RRC: DLInformationTransfer<br>TC: CLOSE UE TEST LOOP             | -  | -       |
| 7Aa2 | The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.   | -->              | RRC: ULInformationTransfer<br>TC: CLOSE UE TEST LOOP<br>COMPLETE | -  | -       |
| -    | EXCEPTION: Step 18a1 depends on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.  | -                | -  | -  | -       |
| 8a1  | IF <i>connected without release</i> is not present<br>THEN, the SS transmits an<br><i>RRCConnectionRelease</i> message to release<br>RRC connection and move to E-UTRA<br>RRC_IDLE (State 2).  | <--              | RRC: <i>RRCConnectionRelease</i>                                 | -  | -       |

#### 4.5.2.3 Specific message contents

All specific message contents shall be according clause 4.6 and 4.7 and TS 36.508 [2] clause 4.6 and 4.7 with the following exception(s).

**Table 4.5.2.3-1: SECURITY MODE COMMAND (Step 9Aa1, Table 4.5.2.2-2)**

|  |
|--|
| Derivation path: Table 4.7.1-25 with condition UE_S1_SUPPORTED |
|--|

**Table 4.5.2.3-2: SERVICE REQUEST (Step 4, Table 4.5.2.2-4)**

| Derivation Path: Table 4.7.1-16. |              |            |           |
|----------------------------------|--------------|------------|-----------|
| Information Element              | Value/remark | Comment    | Condition |
| Service type                     | '0000'B      | signalling |           |

**Table 4.5.2.3-3: Message PDN CONNECTIVITY REQUEST (step 4, Table 4.5.2.2-5)**

| Derivation path: TS 36.508 [2], Table 4.7.3-20.  |  |   |           |
|--|--|---|-----------|
| Information Element  | Value/Remark   | Comment   | Condition |
| Access point name  | Not present or <a href="#">One of the provided APN(s) in the Table 4.8.4-1</a> | If present, the SS shall initialise the APN_Default=False<br>If not present<br>NOTE 2 |           |
| NOTE 1: Unless explicitly specified otherwise, the SS uses the Access point name value to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment and verifying specific UE behaviour e.g. depending on the type of the APN the UE may perform some actions. |  |   |           |
| NOTE 2: The SS uses pc_APN_Default_Configuration to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment.   |  |   |           |

**Table 4.5.2.3-4: Message ESM INFORMATION RESPONSE (step 9a2, Table 4.5.2.2-5)**

| Derivation path: TS 36.508 [2], Table 4.7.3-14.  |  |   |           |
|--|--|---|-----------|
| Information Element  | Value/Remark   | Comment   | Condition |
| Access point name  | Not present or <a href="#">One of the provided APN(s) in the Table 4.8.4-1</a> | If present, the SS shall initialise the APN_Default=False<br>If not present<br>NOTE 2 |           |
| NOTE 1: Unless explicitly specified otherwise, the SS uses the Access point name value to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment and verifying specific UE behaviour e.g. depending on the type of the APN the UE may perform some actions. |  |   |           |
| NOTE 2: The SS uses pc_APN_Default_Configuration to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment.   |  |   |           |

**Table 4.5.2.3-5: Message ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST (Steps 10a5, 10b7, Table 4.5.2.2-5)**

| Derivation path: TS 36.508 [2], Table 4.7.3-6 with CONDITION Interworking_with_5GS. |  |         |           |
|---|--|---------|-----------|
| Information Element   | Value/Remark   | Comment | Condition |
| EPS QoS   | The EPC default bearer context of the entry in Table 4.8.4-1 which has been determined at step 1   |         |           |
| Access point name   | IF the UE provided an Access point name in step 1 THEN the SS returns this name; OTHERWISE the SS includes the DNN/APN ID value of the entry in Table 4.8.4-1 which has been determined at step 1. |         |           |
| Container ID n+3  | '001C'H  |         |           |
| Length of container ID n+3 contents   |  |         |           |
| Container ID n+3 contents   | 5GC QoS rule of the entry in Table 4.8.4-1 which has been determined at step 1   |         |           |
| Container ID n+4  | '001F'H  |         |           |
| Length of container ID n+4 contents   |  |         |           |
| Container ID n+4 contents   | As per the relevant QoS rule (Container ID n+3)  |         |           |

## 4.5.3 RRC\_INACTIVE

### 4.5.3.1 Initiation

The SS shall:

- 1> if connectivity is *NR*
- 2> use 1 NR cell, default parameters;
- 2> perform according to the table 4.5.3.2-1: NR RRC\_INACTIVE;

### 4.5.3.2 Procedures

**Table 4.5.3.2-1: NR RRC\_INACTIVE**

| St     | Procedure   | Message Sequence |                     | TP | Verdict |
|--------|---|------------------|---------------------|----|---------|
|        |   | U - S            | Message             |    |         |
| 1-19a1 | Same as table 4.5.2.2-2, steps 1-19a1.                | -                | -                   | -  | -       |
| 20     | The SS transmits an RRCCRelease message with suspend. | <--              | NR RRC: RRCCRelease | -  | -       |

## 4.5.4 RRC\_CONNECTED

### 4.5.4.1 Initiation

The SS shall:

- 1> perform according to clause 4.5.2 RRC\_IDLE;

- 1> if connectivity is *EN-DC*:
  - 2> use 1 E-UTRA cell and 1 NR cell, default parameters;
  - 2> if connected without release is *On*:
    - 3> perform according to the table 4.5.4.2-2: RF E-UTRA RRC\_CONNECTED;
  - 2> else:
    - 3> perform according to the table 4.5.4.2-1: E-UTRA RRC\_CONNECTED;
- 1> if connectivity is *E-UTRA/EPC*:
  - 2> use 1 E-UTRA cell, default parameters;
  - 2> perform according to the table 4.5.4.2-1: E-UTRA RRC\_CONNECTED with *MCG(s)* only;
- 1> if connectivity is *NR*:
  - 2> use 1 NR cell, default parameters;
  - 2> if connected without release is not present:
    - 3> perform according to the table 4.5.4.2-3: NR RRC\_CONNECTED;
- 1> if connectivity is *WLAN*:
  - 2> use 1 WLAN cell, default parameters;
  - 2> if connected without release is not present:
    - 3> perform according to the table 4.5.4.2-4: WLAN IPsec\_SA\_Established;
  - 2> else:
    - 3> Not defined;
- 1> if connectivity is *NR-DC*:
  - 2> use 2 NR cells, default parameters;
  - 2> perform according to the table 4.5.4.2-5: NR-DC RRC\_CONNECTED;

#### 4.5.4.2 Procedures

**Table 4.5.4.2-1: E-UTRA RRC\_CONNECTED**

| St                | Procedure  | Message Sequence |  | TP | Verdict |
|-------------------|--|------------------|--|----|---------|
|                   |  | U - S            | Message  |    |         |
| 1-6               | Same as TS 36.508 [2] table 4.5.3.3-1, steps 2-7.  | -                | -  | -  | -       |
| 7                 | Same as TS 36.508 [2] table 4.5.3.3-1, step 8. The <i>RRCConnectionReconfiguration</i> is using condition EN-DC_SRB2-DRB for bearers <i>MCG(s) and SCG</i> or <i>MCG(s) only</i> . The <i>RRCConnectionReconfiguration</i> is using an associated condition <i>MCG_and_SCG</i> for bearers <i>MCG(s) and SCG</i> or condition <i>MCG_and_split</i> for bearers <i>MCG(s) and split</i> . For bearers <i>MCG(s) only</i> there's no associated condition. | <--              | <i>RRC:</i><br><i>RRCConnectionReconfiguration</i><br><i>NAS:</i><br>ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST | -  | -       |
| -                 | EXCEPTION: IF <i>MCG(s) and SCG</i> or <i>MCG(s) and split</i> . In parallel to steps 8-9 the UE performs a C-RNTI based Contention Based Random Access (CBRA) procedure on the NR cell.   | -                | -  | -  | -       |
| 8-9               | Same as TS 36.508 [2] table 4.5.3.3-1, steps 9-10a1  | -                | -  | -  | -       |
| 10a1<br>-<br>10a2 | IF Test Loop Function=On, same as TS 36.508 [2] table 4.5.4.3-1, steps 1-2.<br>The CLOSE UE TEST LOOP is using the associated condition for the test loop.   | -                | -  | -  | -       |

**Table 4.5.4.2-2: RF E-UTRA RRC\_CONNECTED**

| St                | Procedure   | Message Sequence |         | TP | Verdict |
|-------------------|---|------------------|---------|----|---------|
|                   |   | U - S            | Message |    |         |
| 1-9               | Same as table 4.5.2.2-1, steps 1-9.   | -                | -       | -  | -       |
| 10a1<br>-<br>10a2 | IF Test Mode = On OR Test Loop Function = On THEN same as TS 36.508 [2] table 4.5.2A.3-1, steps 10-11.<br>The ACTIVATE TEST MODE is using the associated condition for the test loop.                         | -                | -       | -  | -       |
| -                 | EXCEPTION: Steps 11a1 to 11b8 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value. | -                | -       | -  | -       |
| 11a1<br>-<br>11a8 | IF Test Mode = On OR Test Loop Function = On THEN same as TS 36.508 [2] table 4.5.2A.3-1, steps 12-18.  | -                | -       | -  | -       |
| 11b1<br>-<br>11b8 | ELSE, same as TS 36.508 [2] table 4.5.2.3-1, steps 10-16.   | -                | -       | -  | -       |
| 12-15             | Same as table 4.5.4.2-1, steps 7-10.  | -                | -       | -  | -       |

**Table 4.5.4.2-3: NR RRC\_CONNECTED**

| St  | Procedure   | Message Sequence |  | TP | Verdict |
|-----|---|------------------|--|----|---------|
|     |   | U - S            | Message  |    |         |
| 1   | The SS transmits a <i>Paging</i> message.   | <--              | NR RRC: <i>Paging</i>  | -  | -       |
| 2   | The UE transmits an <i>RRCSsetupRequest</i> message.  | -->              | NR RRC: <i>RRCSsetupRequest</i>  | -  | -       |
| 3   | The SS transmits an <i>RRCSsetup</i> message.   | <--              | NR RRC: <i>RRCSsetup</i>   | -  | -       |
| 4   | The UE transmits an <i>RRCSsetupComplete</i> message and a SERVICE REQUEST message.   | -->              | NR RRC: <i>RRCSsetupComplete</i><br>5GMM: SERVICE REQUEST                  | -  | -       |
| 5   | The SS transmits a <i>SecurityModeCommand</i> message.  | <--              | NR RRC: <i>SecurityModeCommand</i>   | -  | -       |
| 6   | The UE transmits a <i>SecurityModeComplete</i> message.   | -->              | NR RRC: <i>SecurityModeComplete</i>  | -  | -       |
| 7   | The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).<br>The RRCReconfiguration message is configured using RRCReconfiguration-SRB2-DRB(n, m) where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively. | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: SERVICE ACCEPT                  | -  | -       |
| 8   | The UE transmits an <i>RRCReconfigurationComplete</i> message.  | -->              | NR RRC: <i>RRCReconfigurationComplete</i>                                  | -  | -       |
| -   | EXCEPTION: Steps 9a1 to 9a2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value.  | -                | -  | -  | -       |
| 9a1 | IF Test Loop Function=On, the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.   | <--              | NR RRC: <i>DLInformationTransfer</i><br>TC: CLOSE UE TEST LOOP             | -  | -       |
| 9a2 | The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.  | -->              | NR RRC: <i>ULInformationTransfer</i><br>TC: CLOSE UE TEST LOOP<br>COMPLETE | -  | -       |

**Table 4.5.4.2-4: WLAN IPsec\_SA\_Established**

| St | Procedure  | Message Sequence |         | TP | Verdict |
|----|--|------------------|---------|----|---------|
|    |  | U - S            | Message |    |         |
| 1  | Trigger UE to initiate IPsec SA.   | -                | -       | -  | -       |
| 2  | The generic procedure for UE-requested IPsec Secure tunnel establishment, specified in subclause 4.5A.64, takes place performing establishment of security association and one child security association. | -                | -       | -  | -       |

**Table 4.5.4.2-5: NR-DC RRC\_CONNECTED**

| St  | Procedure  | Message Sequence |   | TP | Verdict |
|-----|--|------------------|---|----|---------|
|     |  | U - S            | Message   |    |         |
| 1-8 | Same as table 4.5.4.2-3, steps 1-6.  | -                | -   | -  | -       |
| 8A  | The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION MODIFICATION COMMAND to add a new SCG DRB or a new split DRB   | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: DL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMMAND     | -  | -       |
| -   | EXCEPTION: In parallel to steps 8B and 8C the UE performs a C-RNTI based Contention Based Random Access (CBRA) procedure on the PSCell.  | -                | -   | -  | -       |
| 8B  | The UE transmits an <i>RRCReconfigurationComplete</i> message including nr-SCG-Response.   | -->              | NR RRC: <i>RRCReconfigurationComplete</i>   | -  | -       |
| 8C  | The UE transmits a <i>ULInformationTransfer</i> message and an PDU SESSION MODIFICATION COMPLETE message.  | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMPLETE | -  | -       |
| -   | EXCEPTION: Steps 9a1 to 9a2 describe behaviour which depends on the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value. | -                | -   | -  | -       |
| 9a1 | IF Test Loop Function=On, the SS transmits a CLOSE UE TEST LOOP message to enter the UE test loop mode. The CLOSE UE TEST LOOP is using the associated condition for the test loop.  | <--              | NR RRC: <i>DLInformationTransfer</i><br>TC: CLOSE UE TEST LOOP  | -  | -       |
| 9a2 | The UE transmits a CLOSE UE TEST LOOP COMPLETE message to confirm that loopback entities for the radio bearer(s) have been created and loop back is activated.   | -->              | NR RRC: <i>ULInformationTransfer</i><br>TC: CLOSE UE TEST LOOP COMPLETE                                   | -  | -       |

#### 4.5.4.3 Specific message contents

All specific message contents shall be according clause 4.6 and 4.7 and TS 36.508 [2] clause 4.6 and 4.7 with the exceptions below.

**Table 4.5.4.3-0: RRCConnectionReconfiguration (step 7, Table 4.5.4.2-1)**

| Derivation Path: 36.508 table 4.6.1-8              |  |                              |                               |
|--|--|------------------------------|-------------------------------|
| Information Element                                | Value/remark   | Comment                      | Condition                     |
| RRCConnectionReconfiguration ::= SEQUENCE {        |  |                              |                               |
| criticalExtensions CHOICE {                        |  |                              |                               |
| c1 CHOICE {  |  |                              |                               |
| rrcConnectionReconfiguration-r8 SEQUENCE {         |  |                              |                               |
| dedicatedInfoNASList                               | Not present  | no NAS message               | MCG(s) only                   |
| dedicatedInfoNASList SEQUENCE (SIZE(1..maxDRB)) OF | 1 entry  |                              | MCG_and_SCG OR MCG_and_s plit |
| dedicatedInfoNAS [1]                               | OCTET STRING including ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST | according to table 4.5.4.3-1 |                               |
| }  |  |                              |                               |
| }  |  |                              |                               |
| }  |  |                              |                               |
| }  |  |                              |                               |

**Table 4.5.4.3-1: Message ACTIVATE DEDICATED EPS BEARER CONTEXT REQUEST (step 7, Table 4.5.4.2-1)**

| Derivation path: TS 36.508 [2] Table 4.7.3-3 |  |         |           |
|--|--|---------|-----------|
| Information Element                          | Value/Remark   | Comment | Condition |
| Linked EPS bearer identity                   | 12   |         |           |
| EPS QoS                                      | According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A |         |           |
| TFT  | According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A |         |           |
| Negotiated QoS                               | According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A |         |           |
| Negotiated LLC SAPI                          | According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A |         |           |
| Radio priority                               | According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A |         |           |
| Protocol configuration options               | According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A |         |           |
| Extended protocol configuration options      | According to reference dedicated EPS bearer context #6 - in TS 36.508 [2] table 6.6.2-1A |         |           |

**Table 4.5.4.3-2: RRCReconfiguration (step 7, Table 4.5.4.2-3)**

|  |
|--|
| Derivation Path: TS 38.508-1, table 4.8.1-1B |
|--|

**Table 4.5.4.3-3: Void**

**Table 4.5.4.3-4: PDU SESSION MODIFICATION COMMAND (step 8A, Table 4.5.4.2-5)**

| Derivation Path: Table 4.7.2-9.  |   |         |           |
|----------------------------------|---|---------|-----------|
| Information Element              | Value/remark  | Comment | Condition |
| PDU session ID                   | The same as the PDU session ID in PDU SESSION ESTABLISHMENT REQUEST associated with the Internet PDU session if available or with the first PDU session |         |           |
| Authorized QoS rules             | One entry   |         |           |
| QoS rule [1]                     | Reference QoS rule #5 as defined in Table 4.8.2.1-5.  | QFI=5   |           |
| Authorized QoS flow descriptions | One entry   |         |           |
| QoS flow [1]                     | Reference QoS flow #5 as defined in Table 4.8.2.3-5.  | QFI=5   |           |

**Table 4.5.4.3-5: RRCReconfiguration (step 8A, Table 4.5.4.2-5)**

Derivation Path: TS 38.508-1, table 4.8.1-1CA

**Table 4.5.4.3-6: RRCReconfigurationComplete (step 8B, Table 4.5.4.2-5)**

Derivation Path: TS 38.508-1, table 4.6.1-14 with condition NR-DC

## 4.5.5 SWITCHED\_OFF

### 4.5.5.1 Initiation

The SS shall:

- 1> if Test State ID=0-A:
- 2> Do nothing;
- 1> else if Test State ID=0N-B:
  - 2> use 1 NR cell, default parameters;
  - 2> perform the procedure according to the table 4.5.5.2-1: NR SWITCHED\_OFF\_0\_B;
- 1> else if Test State ID=0E-B:
  - 2> FFS

NOTE: The procedure for State 0N-B is used as default.

### 4.5.5.2 Procedures

**Table 4.5.5.2-1: NR SWITCHED\_OFF\_ON\_B**

| St    | Procedure                              | Message Sequence |         | TP | Verdict |
|-------|--|------------------|---------|----|---------|
|       |  | U - S            | Message |    |         |
| 1-20  | Same as table 4.5.2.2-2, steps 1-20.   | -                | -       | -  | -       |
| 21-26 | Same as table 4.9.6.1-1, steps 1a1-1b1 | -                | -       | -  | -       |

### 4.5.5.3 Specific message contents

All specific message contents shall be according clause 4.6 and 4.7.

NOTE: The procedure refers to default messages content. If a test case requires specific parameters to be set during the procedure e.g. list with ePLMN or/and TAIs is stored, new or not 5G-GUTI, etc. then, this needs to be specified in the test case, which uses the procedure.

## 4.5.6 Void

# 4.5A Auxiliary procedures

## 4.5A.1 General

## 4.5A.2 UE-requested PDU session establishment procedure

### 4.5A.2.1 Scope

The purpose of this procedure is to establish UE-requested PDU session(s).

**Table 4.5A.2.1-1: Conditions and other parameters**

| Condition                      | Explanation  |
|--------------------------------|--|
| ExpectedNumberOfNewPDUSessions | <p><b>Usage:</b> Parameter determining procedure sequence.<br/>A value for this parameter shall be provided when the procedure is called.<br/>Unless the test requires specific number of PDU sessions to be established<br/>the value should be either px_noOf_PDUsSameConnection or<br/>px_noOf_PDUsNewConnection ([23]).</p> <p><b>Meaning:</b> The number of PDU sessions which are expected to happen. Depends on the UE configuration and/or the context in which the procedure is used.</p> |
| K                              | <p><b>Usage:</b> Parameter determining procedure sequence.</p> <p><b>Meaning:</b> The number of PDU SESSION ESTABLISHMENT REQUEST messages already processed including the one that is currently being processed.</p>  |
| L                              | <p><b>Usage:</b> Parameter determining procedure sequence.</p> <p><b>Meaning:</b> The number of PDU SESSION ESTABLISHMENT REQUEST messages being received so far.</p>  |
| N                              | <p><b>Usage:</b> Parameter determining procedure sequence.<br/>The parameter is initialised with the value of<br/>ExpectedNumberOfNewPDUSessions</p> <p><b>Meaning:</b> Loop (step sequence repetition) control.</p>   |
| IMS_PDU                        | <p><b>Usage:</b> Condition determining specific message contents.</p> <p><b>Meaning:</b> PDU session establishment for IMS.<br/>Whether a PDU session is for IMS is determined by the DNN/APN type of the entry in Table 4.8.4-1 which itself has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc_APN_Default_Configuration if the DNN IE was not present</p>   |

### 4.5A.2.2 Procedure description

#### 4.5A.2.2.1 Initial conditions

The UE is in RRC\_CONNECTED state.

## 4.5A.2.2.2 Procedure sequence

**Table 4.5A.2.2.2-1: PDU session establishment procedure**

| St   | Procedure  | Message Sequence |   | Verdict |
|--|--|------------------|---|---------|
|  |  | U - S            | Message   |         |
| 0  | Set K = 0, L = 0,<br>N = ExpectedNumberOfNewPDUSessions  | -                | -   | -       |
| 1  | The procedure specified in Table 4.5A.2.2.2-2 takes place.   | -                | -   | -       |
| 2  | Set K = K +1   | -                | -   | -       |
| -  | EXCEPTION: In parallel to the events described in steps 3-6a1 below the events specified in Table 4.5A.2.2.2-2 may take place.   | -                | -   | -       |
| 3  | The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION ESTABLISHMENT ACCEPT  | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: DL NAS TRANSPORT<br>5GSM: PDU SESSION ESTABLISHMENT ACCEPT | -       |
| 4  | The UE transmits an <i>RRCReconfigurationComplete</i> message.   | -->              | NR RRC:<br><i>RRCReconfigurationComplete</i>  | -       |
| -  | EXCEPTION: Step 5a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.  | -                | -   | -       |
| 5a1  | IF the 'IP address allocation' for the DNN for which the PDU session is established is set to "Yes" in Table 4.8.4-1 THEN, the generic procedure for IP address allocation in the user plane, specified in subclause 4.5A.3, takes place performing IP address allocation in the user plane. | -                | -   | -       |
| -  | EXCEPTION: Step 6a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.  | -                | -   | -       |
| 6a1  | IF the 'IMS registration' for the DNN for which the PDU session is established is set to "Yes" in Table 4.8.4-1, THEN the generic procedure for IMS signalling in the U-plane specified in subclause 4.5A.4 takes place.   | -                | -   | -       |
| -  | EXCEPTION: Steps 7a1 to 7b2 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.   | -                | -   | -       |
| 7a1  | IF L > K (NOTE 1) THEN repeat from step 2  | -                | -   | -       |
| 7b1  | ELSE IF K < N (NOTE 2) THEN repeat from step 1.  | -                | -   | -       |
| NOTE 1: One (or more) further PDU SESSION ESTABLISHMENT REQUEST message has been received in parallel.   |  |                  |   |         |
| NOTE 2: Less PDU SESSION ESTABLISHMENT REQUEST messages than expected have been received and processed so far -> further request are expected from the UE. |  |                  |   |         |

**Table 4.5A.2.2.2-2: Reception of PDU SESSION ESTABLISHMENT REQUEST message**

| St   | Procedure  | Message Sequence |   | Verdict |
|--|--|------------------|---|---------|
|  |  | U – S            | Message   |         |
| 1  | Start Wait_Timer = 8 sec.<br>NOTE: 8s were chosen to cater for T3540 being set to 10s.   | -                | -   | -       |
| -  | EXCEPTION: Steps 2a1 to 2b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | -                | -   | -       |
| 2a1  | The UE transmits an <i>ULInformationTransfer</i> message and a PDU SESSION ESTABLISHMENT REQUEST   | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION ESTABLISHMENT REQUEST | -       |
| 2a2  | Stop Wait_Timer.   | -                | -   | -       |
| 2a3  | Set L = L +1.  | -                | -   | -       |
| 2a4  | Check: Does the L>N?<br>(NOTE 1)   | -                | -   | F       |
| 2b1  | Check: Does Wait_Timer expire?<br>(NOTE 2)   | -                | -   | F       |
| NOTE 1: The SS shall raise a fail verdict when there are more PDU SESSION ESTABLISHMENT REQUEST messages than expected and terminate the test. The reason for such a behaviour can be e.g. wrongly set IXIT with which the ExpectedNumberOfNewPDNConnections was initiated,<br>NOTE 2: Unless this is specified explicitly otherwise e.g. in a test procedure which calls the procedure specified in the present table, the SS shall raise a fail verdict when there are less PDN CONNECTIVITY REQUEST messages than expected received at this point and terminate the test. The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDUSessions was initiated. |  |                  |   |         |

#### 4.5A.2.2.3 Specific message contents

All specific message contents shall be according clause 4.6 and 4.7 with the exceptions below.

**Table 4.5A.2.2.3-1: RRCReconfiguration (step 3, Table 4.5A.2.2.2-1)**

| Derivation Path: Table 4.6.1-13 and condition NR if SRB2 is not yet established |   |         |             |
|---|---|---------|-------------|
| Information Element   | Value/remark                                    | Comment | Condition   |
| RRCReconfiguration ::= SEQUENCE {   |   |         |             |
| criticalExtensions CHOICE {   |   |         |             |
| rrcReconfiguration ::= SEQUENCE {   |   |         |             |
| radioBearerConfig   | RadioBearerConfig with conditions SRB2 and DRB2 |         | NOT IMS_PDU |
| nonCriticalExtension SEQUENCE {   |   |         |             |
| masterCellGroup   | CellGroupConfig with condition SRB2_DRB2        |         | NOT IMS_PDU |
| dedicatedNAS-MessageList SEQUENCE {SIZE(1..maxDRB)} OF DedicatedNAS-Message {}} | DedicatedNAS-Message                            |         |             |
| }   |   |         |             |
| }   |   |         |             |
| }   |   |         |             |
| }   |   |         |             |

**Table 4.5A.2.2.3-2: RRCReconfiguration (step 3, Table 4.5A.2.2.2-1)**

| Derivation Path: Table 4.6.1-13 and condition NR if SRB2 is already established |                                       |  |           |
|---|---------------------------------------|--|-----------|
| Information Element   | Value/remark                          | Comment  | Condition |
| RRCReconfiguration ::= SEQUENCE {   |                                       |  |           |
| criticalExtensions CHOICE {   |                                       |  |           |
| rrcReconfiguration ::= SEQUENCE {   |                                       |  |           |
| radioBearerConfig   | RadioBearerConfig with condition DRBn | n is chosen as the next available number higher or equal to 2    |           |
|   | RadioBearerConfig with condition DRB1 |  | IMS_PDU   |
| nonCriticalExtension SEQUENCE {   |                                       |  |           |
| masterCellGroup   | CellGroupConfig with condition DRBn   | n is set to the same value as for the radioBearerConfig IE above |           |
|   | CellGroupConfig with condition DRB1   |  | IMS_PDU   |
| dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message {}} | DedicatedNAS-Message                  |  |           |
| }   |                                       |  |           |
| }   |                                       |  |           |
| }   |                                       |  |           |
| }   |                                       |  |           |

## 4.5A.2A UE-requested PDU session establishment procedure over Non 3GPP Access

### 4.5A.2A.1 Scope

The purpose of this procedure is to establish UE-requested PDU session.

### 4.5A.2A.2 Procedure description

#### 4.5A.2A.2.1 Initial conditions

The UE has established an IPsec security association

#### 4.5A.2A.2.2 Procedure sequence

**Table 4.5A.2A.2.2-1: PDU session establishment procedure over Non 3GPP Access**

| St | Procedure  | Message Sequence |   |
|----|--|------------------|---|
|    |  | U – S            | Message   |
| 1  | The UE transmits a PDU SESSION ESTABLISHMENT REQUEST   | ->               | 5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION ESTABLISHMENT REQUEST |
| 2  | The SS establishes an IPsec child security association according to the IKEv2 specification in RFC 7296 [34] |                  |   |
| 3  | The SS transmits an PDU SESSION ESTABLISHMENT ACCEPT   | <-               | 5GMM: DL NAS TRANSPORT<br>5GSM: PDU SESSION ESTABLISHMENT ACCEPT  |

Note 1: The current procedure assumes UE establishes a single PDU session over Non 3GPP Access.

### 4.5A.2A.3 Specific message contents

None

## 4.5A.2B Procedure to establish multiple additional PDN connections in S1

### 4.5A.2B.1 Scope

The present procedure is intended for test scenarios where it is desirable, due to the tested requirements (e.g. intersystem change between S1 and N1 mode), to allow the UE to set up as many as it may want, and in any order, PDN connections after the first PDN connection is established during the ATTACH to EPS procedure (i.e. when the UE is operating in S1 mode).

**Table 4.5A.2B.1-1: Conditions and other parameters**

| Condition                         | Explanation  |
|-----------------------------------|--|
| ExpectedNumberOfNewPDNConnections | <p><b>Usage:</b> Parameter determining procedure sequence.<br/>A value for this parameter shall be provided when the procedure is called.<br/>Unless the test requires specific number of PDN connections to be established the value should be either pc_noOf_PDNsSameConnection or pc_noOf_PDNsNewConnection ([19]).</p> <p><b>Meaning:</b> The number of PDN connections which are expected to happen. Depends on the UE configuration and/or the context in which the procedure is used.</p> |
| K                                 | <p><b>Usage:</b> Parameter determining procedure sequence.<br/><b>Meaning:</b> The number of PDN CONNECTIVITY REQUEST messages already processed including the one that is currently being processed.</p>  |
| L                                 | <p><b>Usage:</b> Parameter determining procedure sequence.<br/><b>Meaning:</b> The number of PDN CONNECTIVITY REQUEST messages being received so far.</p>  |
| N                                 | <p><b>Usage:</b> Parameter determining procedure sequence.<br/>The parameter is initialised with the value of ExpectedNumberOfNewPDNConnections</p> <p><b>Meaning:</b> Loop (step sequence repetition) control.</p>  |

### 4.5A.2B.2 Procedure description

#### 4.5A.2B.2.1 Initial conditions

System Simulator:

- 1 cell, default parameters.
- The procedure shall be performed under ideal radio conditions as defined in clause 5

User Equipment:

- The UE is in Registered, RRC\_CONNECTED state (State 2).

The default system information messages are used.

## 4.5A.2B.2.2 Procedure sequence

**Table 4.5A.2B.2.2-1: Establishment of additional PDN connectivity**

| St  | Procedure   | Message Sequence |         | Verdict |
|-----|---|------------------|---------|---------|
|     |   | U - S            | Message |         |
| 0   | Set K = 0, L = 0,<br>N = ExpectedNumberOfNewPDNConnections  | -                | -       | -       |
| 1   | The procedure specified in Table 4.5A.2B.2.2-2 takes place.   | -                | -       | -       |
| 2   | Set K = K +1.   | -                | -       | -       |
| -   | EXCEPTION: In parallel to the events described in steps 3-6a1 below the events specified in Table 4.5A.2B.2.2-2 may take place.   | -                | -       | -       |
| 3-4 | Step 2-3 as defined in TS 36.508 [2], Table 4.5A.16.3-1, Generic Test Procedure to establish additional PDN connectivity take place.  | -                | -       | -       |
| -   | EXCEPTION: IF the 'IP address allocation' for the APN for which the PDN connection is established is set to "Yes" in Table 4.8.4-1 THEN, in parallel to the event described in step 5 below the generic procedure for IP address allocation in the U-plane specified in TS 36.508 [2], subclause 4.5A.1 takes place performing IP address allocation in the U-plane if requested by the UE. | -                | -       | -       |
| -   | EXCEPTION: IF the 'IMS registration' for the APN for which the PDN connection is established is set to "Yes" in Table 4.8.4-1, THEN in parallel to the event described in step 5 below the relevant generic procedure for IMS signalling in the U-plane specified in Table 4.8.4-1 takes place.   | -                | -       | -       |
| 5   | Step 4 as defined in TS 36.508 [2], Table 4.5A.16.3-1, Generic Test Procedure to establish additional PDN connectivity takes place.   | -                | -       | -       |
| -   | EXCEPTION: Steps 6a1 to 6b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.  | -                | -       | -       |
| 6a1 | IF L > K (NOTE 1) THEN repeat from step 2.  | -                | -       | -       |
| 6b1 | ELSE IF K < N (NOTE 2) THEN repeat from step 1.   | -                | -       | -       |

NOTE 1: One (or more) further PDN CONNECTIVITY REQUEST message has been received in parallel.

NOTE 2: Less PDN CONNECTIVITY REQUEST messages than expected have been received and processed so far and consequently further requests are expected from the UE.

**Table 4.5A.2B.2.2-2: Reception of PDN CONNECTIVITY REQUEST message**

| St   | Procedure   | Message Sequence |                          | Verdict |
|--|---|------------------|--------------------------|---------|
|  |   | U - S            | Message                  |         |
| 1  | Start Wait_Timer = 10 sec.<br>NOTE: 10 sec is an arbitrary value.   | -                | -                        | -       |
| -  | EXCEPTION: Steps 2a1 to 2b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.  | -                | -                        | -       |
| 2a1  | Step 1 as defined in Table 4.5A.16.3-1, specified in TS 36.508 [2], subclause 4.5A.16 Generic Test Procedure to establish additional PDN connectivity takes place.<br>The UE transmits a PDN CONNECTIVITY REQUEST message to request an additional PDN. | <--              | PDN CONNECTIVITY REQUEST | -       |
| 2a2  | Stop Wait_Timer.  | -                | -                        | -       |
| 2a3  | Set L = L +1.   | -                | -                        | -       |
| 2a4  | Check: Does the L>N?<br>(NOTE 1)  | -                | -                        | F       |
| 2b1  | Check: Does Wait_Timer expire?<br>(NOTE 2)  | -                | -                        | F       |
| <p>NOTE 1: The SS shall raise a fail verdict when there are more PDN CONNECTIVITY REQUEST messages received than expected (<math>L &gt; N</math>) and terminate the test. The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDNConnections was initiated,</p> <p>NOTE 2: Unless this is specified explicitly otherwise, e.g. in a test procedure which calls the procedure specified in the present table, the SS shall raise a fail verdict when there are less PDN CONNECTIVITY REQUEST messages than expected received at this point (note that when this procedure is called from the main behaviour <math>K &lt; N</math>). The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDNConnections was initiated.</p> |   |                  |                          |         |

### 4.5A.2B.3 Specific message contents

All specific message contents shall be referred to TS 36.508 [2] subclauses 4.6 and 4.7 with the exceptions specified below.

**Table 4.5A.2B.3-1: Message PDN CONNECTIVITY REQUEST (step 1, Table 4.5A.2B.2.2-2)**

| Derivation path: TS 36.508 [2], Table 4.7.3-20.   |  |   |           |
|---|--|---|-----------|
| Information Element   | Value/Remark   | Comment   | Condition |
| Access point name   | Not present or <a href="#">One of the provided APN(s) in the Table 4.8.4-1</a> | If present, the SS shall initialise the APN_Default=False<br>If not present<br>NOTE 2 |           |
| <p>NOTE 1: Unless explicitly specified otherwise, the SS uses the Access point name value to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment and verifying specific UE behaviour e.g. depending on the type of the APN the UE may perform some actions.</p> <p>NOTE 2: The SS uses pc_APN_Default_Configuration to address the entry of Table 4.8.4-1 to be used for the subsequent signalling of the PDN connectivity establishment.</p> |  |   |           |

**Table 4.5A.2B.3-2: Message ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST (step 3, Table 4.5A.2B.2.2-1; Step 2, Table 4.5A.16.3-1 TS 36.508 [2])**

| Derivation path: TS 36.508 [2], Table 4.7.3-6 with CONDITION Interworking_with_5GS. |  |         |           |
|---|--|---------|-----------|
| Information Element   | Value/Remark   | Comment | Condition |
| EPS QoS   | The EPC default bearer context of the entry in Table 4.8.4-1 which has been determined at step 1   |         |           |
| Access point name   | IF the UE provided an Access point name in step 1 THEN the SS returns this name; OTHERWISE the SS includes the DNN/APN ID value of the entry in Table 4.8.4-1 which has been determined at step 1. |         |           |
| Container ID n+3  | '001C'H  |         |           |
| Length of container ID n+3 contents   |  |         |           |
| Container ID n+3 contents   | 5GC QoS rule of the entry in Table 4.8.4-1 which has been determined at step 1   |         |           |
| Container ID n+4  | '001F'H  |         |           |
| Length of container ID n+4 contents   |  |         |           |
| Container ID n+4 contents   | As per the relevant QoS rule (Container ID n+3)  |         |           |

## 4.5A.2C Procedure for UE-requested PDU session modification after the first S1 to N1 mode change / Single-registration mode with N26

### 4.5A.2C.1 Scope

The purpose of this procedure is to handle UE-requested PDU session modification after the first S1 to N1 mode change in the scenario of Single-registration mode, 'Interworking without N26 interface not supported'.

**Table 4.5A.2C.1-1: Conditions and other parameters**

| Condition                               | Explanation   |
|---|---|
| ExpectedNumberOfPDUSessionModifications | <b>Usage:</b> Parameter determining procedure sequence.<br>A value for this parameter shall be provided when the procedure is called.<br>Unless the test requires specific number of PDU modifications to take place the value should be set to pc_noOf_PDNsSameConnection + pc_noOf_PDNsNewConnection ([19]).<br><b>Meaning:</b> The number of PDU sessions which are expected to happen. Depends on the UE configuration and/or the context in which the procedure is used. |
| K                                       | <b>Usage:</b> Parameter determining procedure sequence.<br><b>Meaning:</b> The number of PDN SESSION MODIFICATION REQUEST messages already processed including the one that is currently being processed.   |
| L                                       | <b>Usage:</b> Parameter determining procedure sequence.<br><b>Meaning:</b> The number of PDN SESSION MODIFICATION REQUEST being received so far.  |
| N                                       | <b>Usage:</b> Parameter determining procedure sequence.<br>The parameter is initialised with the value of ExpectedNumberOfPDUSessionModifications<br><b>Meaning:</b> Loop (step sequence repetition) control.   |

## 4.5A.2C.2 Procedure description

## 4.5A.2C.2.1 Initial conditions

The UE is in RRC\_CONNECTED state.

## 4.5A.2C.2.2 Procedure sequence

**Table 4.5A.2C.2.2-1: Procedure for UE-requested PDU session modification after the first S1 to N1 mode change**

| St  | Procedure  | Message Sequence |   | Verdict |
|-----|--|------------------|---|---------|
|     |  | U - S            | Message   |         |
| 0   | Set K = 0, L = 0,<br>N = (ExpectedNumberOfPDUSessionModifications).  | -                | -   | -       |
| 1   | The procedure specified in Table 4.5A.2C.2.2-2 takes place.  | -                | -   | -       |
| 2   | Set K = K +1.  | -                | -   | -       |
| -   | EXCEPTION: In parallel to the events described in steps 3-5a1 below the events specified in Table 4.5A.2C.2.2-2 may take place.  | -                | -   | -       |
| 3   | The SS transmits a PDU SESSION MODIFICATION COMMAND.   | <--              | NR RRC: <i>DLInformationTransfer</i><br>5GMM: DL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMMAND  | -       |
| 4   | The UE transmits a PDU SESSION MODIFICATION COMPLETE message.  | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMPLETE | -       |
| -   | EXCEPTION: Steps 5a1 to 5b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | -                | -   | -       |
| 5a1 | IF L > K (NOTE 1) THEN repeat from step 2.   | -                | -   | -       |
| 5b1 | ELSE IF K < N (NOTE 2) THEN repeat from step 1.  | -                | -   | -       |

NOTE 1: One (or more) further PDU SESSION MODIFICATION REQUEST message has been received in parallel.  
 NOTE 2: Less PDU SESSION MODIFICATION REQUEST messages than expected have been received and processed so far -> Further request are expected from the UE.

**Table 4.5A.2C.2.2-2: Reception of PDU SESSION MODIFICATION REQUEST message**

| St   | Procedure   | Message Sequence |  | Verdict |
|--|---|------------------|--|---------|
|  |   | U - S            | Message  |         |
| 1  | Start Wait_Timer = 10 sec.<br>NOTE: 10 sec is an arbitrary value.   | -                | -  | -       |
| -  | EXCEPTION: Steps 2a1 to 2b1 describe behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.                          | -                | -  | -       |
| 2a1  | The UE transmits an <i>ULInformationTransfer</i> message and a PDU SESSION MODIFICATION REQUEST with PDU session ID which has been associated with a default EPS bearer set up during the UE operation in S1. | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GSM: PDU SESSION MODIFICATION REQUEST | -       |
| 2a2  | Stop Wait_Timer.  | -                | -  | -       |
| 2a3  | Set L = L + 1.  | -                | -  | -       |
| 2a4  | Check: Does the L>N?<br>(NOTE 1)  | -                | -  | F       |
| 2b1  | Check: Does Wait_Timer expire?<br>(NOTE 2)  | -                | -  | F       |
| NOTE 1: The SS shall raise a fail verdict when there are more PDU SESSION MODIFICATION REQUEST messages received than expected and terminate the test. The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDNConnections was initiated.<br>NOTE 2: Unless this is specified explicitly otherwise e.g. in a test procedure which calls the procedure specified in the present table, the SS shall raise a fail verdict when there are less PDU SESSION MODIFICATION REQUEST messages than expected received at this point and terminate the test. The reason for such a behaviour can be e.g. wrongly set PICS with which the ExpectedNumberOfNewPDUSessions was initiated, |   |                  |  |         |

#### 4.5A.2C.2.3 Specific message contents

All specific message contents shall be according clause 4.6 and 4.7 with the below exceptions:

**Table 4.5A.2C.2.3-1: UL NAS TRANSPORT (Step 1, Table 4.5A.2C.2.2-2)**

| Derivation Path: Table 4.7.1-10. |              |                        |           |
|----------------------------------|--------------|------------------------|-----------|
| Information Element              | Value/remark | Comment                | Condition |
| Request type                     | '101'B       | "modification request" |           |

**Table 4.5A.2C.2.3-2: PDU SESSION MODIFICATION REQUEST (Step 1, Table 4.5A.2C.2.2-2)**

| Derivation Path: Table 4.7.2-7.  |   |         |           |
|--|---|---------|-----------|
| Information Element  | Value/remark  | Comment | Condition |
| PDU session ID   | The PDU session ID associated with the default EPS bearer of the PDN connection which is being transferred into PDU session and for which the UE needs to indicate its capabilities via the modification procedure.<br>(NOTE 1) |         |           |
| 5GSM capability  | Present. Contents not checked.  |         |           |
| Integrity protection maximum data rate   | Present. Contents not checked.  |         |           |
| NOTE 1: The PDU session ID was provided in the ACTIVATE DEFAULT EPS BEARER CONTEXT ACCEPT when the UE attached in S1. If the UE provides here an unknown PDU session ID then the SS shall set an Inconclusive verdict. |   |         |           |

### 4.5A.3 Procedure for IP address allocation in the user plane

#### 4.5A.3.1 Scope

The purpose of this procedure is to allow the successful completion of IP address allocation if it is initiated by the UE therefore the result from the execution of the Procedure for IP address allocation in the user plane shall not lead to assignment of a verdict.

Depending on the UE configuration there may be unpredictable delay in the start of the procedure. A guarding time of 1.2 sec is suggested within which the procedure is expected to start. If the timer expires then the test procedure, from which the Procedure for IP address allocation in the user plane is called, shall advance to the next specified step.

#### 4.5A.3.2 Procedure description

##### 4.5A.3.2.1 Initial conditions

N/A

##### 4.5A.3.2.2 Procedure sequence

**Table 4.5A.3.2.2-1: Procedure for IP address allocation in the user plane**

| Step | Procedure   | Message Sequence |         |
|------|---|------------------|---------|
|      |   | U - S            | Message |
| -    | EXCEPTION: Step 1 below and Step 1 in Table 4.5A.3.2.2-2 describe behaviour that depends on the contents of the latest PDU SESSION ESTABLISHMENT REQUEST message sent by the UE prior to this procedure.  | -                | -       |
| -    | EXCEPTION: In parallel to the event described in step 1 below the step specified in Table 4.5A.3.2.2-2 may take place.  | -                | -       |
| 1    | If the "PDU session type" in the latest PDU SESSION ESTABLISHMENT REQUEST message prior to this procedure was 'IPv4' or 'IPv4v6' then, IPv4 address allocation by DHCPv4 may occur on the user plane bearer established for the QoS flow of the default QoS rule. | -                | -       |

**Table 4.5A.3.2.2-2: Procedure for IP address allocation in the user plane, parallel behaviour**

| Step | Procedure  | Message Sequence |         |
|------|--|------------------|---------|
|      |  | U - S            | Message |
| 1    | If the "PDU session type" in the latest PDU SESSION ESTABLISHMENT REQUEST message prior to this procedure was 'IPv6' or 'IPv4v6' then stateless address auto configuration occurs on the user plane bearer established for the QoS flow of the default QoS rule. | -                | -       |

#### 4.5A.3.2.3 Specific message contents

None

## 4.5A.4 Procedure for IMS signalling

### 4.5A.4.1 Scope

The purpose of this procedure is to allow the successful completion of IMS signalling.

The procedure is applicable for UEs with IMS support (TS 38.508-2 A.4.4-1/2).

### 4.5A.4.2 Procedure description

#### 4.5A.4.2.1 Initial conditions

N/A

#### 4.5A.4.2.2 Procedure sequence

**Table 4.5A.4.2.2-1: Procedure for IMS signalling**

| Step  | Procedure  | Message Sequence |         |
|---|--|------------------|---------|
|   |  | U - S            | Message |
| -   | EXCEPTION: Steps 1a1 to 1a2b1 describe a transaction that depends on the UE capability                                       | -                | -       |
| 1a1   | IF pc_IMS_5GS then the SS starts timer Timer_1 = 10 s (Note 1)   | -                | -       |
| -   | EXCEPTION: Steps 1a2a1 to 1a2b1 describe a transaction that depends on the UE implementation                                 | -                | -       |
| 1a2a<br>1-<br>1a2a<br>8   | Registration procedure according TS 34.229-5 [47] subclause A.2 (steps 1-8).<br>Note: SS cancels timer Timer_1 at step 1a2a1 | -                | -       |
| 1a2b<br>1   | Timer_1 expires  | -                | -       |
| Note 1: Depending on the UE configuration there may be unpredictable delay in the start of the procedure. A guarding time of [10] sec is suggested within which the procedure is expected to start. If the timer expires then the test procedure, from which the Procedure for IMS signalling U-plane is called, shall advance to the next specified step |  |                  |         |

### 4.5A.4.2.3 Specific message contents

None

## 4.5A.5 IPsec Tunnel Disconnection in 5GC / WLAN

### 4.5A.5.1 Scope

The purpose of this procedure is to disconnect an Ipsec tunnel.

### 4.5A.5.2 Procedure description

#### 4.5A.5.2.1 Initial conditions

The UE has established an IPsec security association

## 4.5A.5.2.2 Procedure sequence

**Table 4.5A.5.2.2-1: IPsec Tunnel Disconnection in 5GC / WLAN**

| St | Procedure   | Message Sequence |         |
|----|---|------------------|---------|
|    |   | U – S            | Message |
| 1  | The SS initiated disconnection from the existing IPsec tunnel as defined in TS 24.502 [35] clause 7.4.2 | -                | -       |

NOTE: It is assumed that the WLAN AP association remains throughout the procedure.

## 4.5A.5.3 Specific message contents

None

**4.5A.6 IPsec Tunnel Establishment in 5GC / WLAN**

## 4.5A.6.1 Scope

The purpose of this procedure is to establish an Ipsec tunnel and NAS signalling connection.

## 4.5A.6.2 Procedure description

## 4.5A.6.2.1 Initial conditions

The UE has Registered to 5GC with a PDU session established and IPsec security association is released

## 4.5A.6.2.2 Procedure sequence

**Table 4.5A.6.2.2-1: IPsec Tunnel Establishment in 5GC / WLAN**

| St | Procedure   | Message Sequence |                       |
|----|---|------------------|-----------------------|
|    |   | U – S            | Message               |
| -  | Exception: In parallel to steps 1 to 2, the UE initiates an IPsec security association and one child security association as defined in TS 24.502 [35] clause 7.3.2 | -                | -                     |
| 1  | The UE transmits a SERVICE REQUEST message.   | -->              | 5GMM: SERVICE REQUEST |
| 2  | The SS transmits a SERVICE Accept message.  | <--              | 5GMM: SERVICE ACCEPT  |

Note 1: The current procedure assumes UE establishes a single PDU session over Non 3GPP Access.

## 4.5A.6.3 Specific message contents

**Table 4.5A.6.3-1: SERVICE REQUEST (step 1, Table 4.5A.6.2.2-1)**

| Derivation Path: 38.508-1 [4], Table 4.7.1-16 |              |            |           |
|---|--------------|------------|-----------|
| Information Element                           | Value/remark | Comment    | Condition |
| Service type                                  |              |            |           |
| Service type value                            | '0000'B      | signalling |           |

## 4.6 Default NG-RAN RRC message and information elements contents

### 4.6.0 General

#### 4.6.0.1 Global conditions

Groups of RRC conditions including always one condition set to true.

**Table 4.6.0.1-1: Signalling, RF/RRM/Performance**

| Condition | Explanation                         |
|-----------|-------------------------------------|
| SIG       | Used for signalling test cases      |
| RF        | Used for RF//Performance test cases |
| RRM       | Used for RRM test cases             |

**Table 4.6.0.1-2: NR operating bands**

| Condition | Explanation           |
|-----------|-----------------------|
| FR1       | 410 MHz – 7125 MHz    |
| FR2       | 24250 MHz – 52600 MHz |

**Table 4.6.0.1-3: FDD/TDD**

| Condition | Explanation               |
|-----------|---------------------------|
| FDD       | Frequency Division Duplex |
| TDD       | Time Division Duplex      |

**Table 4.6.0.1-4: Subcarrier spacing**

| Condition | Explanation |
|-----------|-------------|
| SCS15     | 15kHz       |
| SCS30     | 30kHz       |
| SCS60     | 60kHz       |
| SCS120    | 120kHz      |
| SCS240    | 240kHz      |

### 4.6.1 Contents of RRC messages

- *CounterCheck*

**Table 4.6.1-1: CounterCheck**

| Derivation Path: TS 38.331 [6], clause 6.2.2                           |                           |         |           |
|--|---------------------------|---------|-----------|
| Information Element  | Value/remark              | Comment | Condition |
| CounterCheck ::= SEQUENCE {  |                           |         |           |
| rrc-TransactionIdentifier  | RRC-TransactionIdentifier |         |           |
| criticalExtensions CHOICE {  |                           |         |           |
| counterCheck SEQUENCE {  |                           |         |           |
| drb-CountMSB-InfoList SEQUENCE (SIZE (1..maxDRB)) OF DRB-CountMSB-Info | 1 entry                   |         |           |
| DRB-CountMSB-Info[1] SEQUENCE {  |                           | entry 1 |           |
| drb-Identity   | DRB-Identity              |         |           |
| countMSB-Uplink  | 0                         |         |           |
| countMSB-Downlink  | 0                         |         |           |
| }  |                           |         |           |
| }  |                           |         |           |
| lateNonCriticalExtension   | Not present               |         |           |
| nonCriticalExtension   | Not present               |         |           |
| }  |                           |         |           |
| }  |                           |         |           |
| }  |                           |         |           |

- *CounterCheckResponse*

**Table 4.6.1-2: CounterCheckResponse**

| Derivation Path: TS 38.331 [6], clause 6.2.2                     |                           |         |           |
|--|---------------------------|---------|-----------|
| Information Element  | Value/remark              | Comment | Condition |
| CounterCheckResponse ::= SEQUENCE {                              |                           |         |           |
| rrc-TransactionIdentifier  | RRC-TransactionIdentifier |         |           |
| criticalExtensions CHOICE {                                      |                           |         |           |
| counterCheckResponse SEQUENCE {                                  |                           |         |           |
| drb-CountInfoList SEQUENCE (SIZE (0..maxDRB)) OF DRB-CountInfo { | 1 entry                   |         |           |
| DRB-CountInfo[1] SEQUENCE {                                      |                           | entry 1 |           |
| drb-Identity   | DRB-Identity              |         |           |
| count-Uplink   | Not checked               |         |           |
| count-Downlink   | Not checked               |         |           |
| }  |                           |         |           |
| }  |                           |         |           |
| lateNonCriticalExtension   | Not checked               |         |           |
| nonCriticalExtension   | Not checked               |         |           |
| }  |                           |         |           |
| }  |                           |         |           |
| }  |                           |         |           |

– *DedicatedSIBRequest*

**Table 4.6.1-2A: DedicatedSIBRequest**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| DedicatedSIBRequest-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *DLDedicatedMessageSegment*

**Table 4.6.1-2B: DLDedicatedMessageSegment**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |   |   |              |
|--|---|---|--------------|
| Information Element                          | Value/remark                              | Comment   | Condition    |
| DLDedicatedMessageSegment-r16 ::= SEQUENCE { |   |   |              |
| criticalExtensions CHOICE {                  |   |   |              |
| dlDedicatedMessageSegment-r16 SEQUENCE {     |   |   |              |
| segmentNumber-r16                            | 0   |   | firstSegment |
|  | 1   |   | lastSegment  |
| rrc-MessageSegmentContainer-r16              | Set according to specific message content | OCTET STRING including segmented RRCReconfiguration or RRCCResume message |              |
| rrc-MessageSegmentType-r16                   | notLastSegment                            |   | firstSegment |
|  | lastSegment                               |   | lastSegment  |
| lateNonCriticalExtension                     | Not present                               |   |              |
| nonCriticalExtension                         | Not present                               |   |              |
| }  |   |   |              |
| }  |   |   |              |
| }  |   |   |              |

| Condition    | Explanation   |
|--------------|---|
| firstSegment | The first segment of the RRCReconfiguration or RRCCResume message |
| lastSegment  | The last segment of the RRCReconfiguration or RRCCResume message  |

– *DLInformationTransfer*

**Table 4.6.1-3: DLInformationTransfer**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                           |         |           |
|--|---------------------------|---------|-----------|
| Information Element                          | Value/remark              | Comment | Condition |
| DLInformationTransfer ::= SEQUENCE {         |                           |         |           |
| rrc-TransactionIdentifier                    | RRC-TransactionIdentifier |         |           |
| criticalExtensions CHOICE {                  |                           |         |           |
| dlInformationTransfer SEQUENCE {             |                           |         |           |
| dedicatedNAS-Message                         | DedicatedNAS-Message      |         |           |
| lateNonCriticalExtension SEQUENCE {          | Not present               |         |           |
| referenceTimeInfo-r16                        | ReferenceTimeInfo         |         |           |
| nonCriticalExtension                         | Not present               |         |           |
| }  |                           |         |           |
| nonCriticalExtension                         | Not present               |         |           |
| }  |                           |         |           |
| }  |                           |         |           |
| }  |                           |         |           |

| Condition | Explanation  |
|-----------|--|
| TSC       | For test cases requiring TSC (Time Sensitive Communication) functions enabled. |

– *DLInformationTransferMRDC*

**Table 4.6.1-3A: DLInformationTransferMRDC**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| DLInformationTransferMRDC-r16 ::= SEQUENCE { |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *FailureInformation*

**Table 4.6.1-4: FailureInformation**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |   |           |
|--|--------------|---|-----------|
| Information Element                          | Value/remark | Comment   | Condition |
| FailureInformation ::= SEQUENCE {            |              |   |           |
| criticalExtensions CHOICE {                  |              |   |           |
| failureInformation SEQUENCE {                |              |   |           |
| failureInfoRLC-Bearer SEQUENCE {             |              |   |           |
| cellGroupId                                  | Not checked  |   |           |
| logicalChannelIdentity                       | Not checked  |   |           |
| failureType                                  | Not checked  |   |           |
| }  |              |   |           |
| lateNonCriticalExtension                     | Not checked  |   |           |
| nonCriticalExtension                         | Not checked  |   |           |
| nonCriticalExtension ::= SEQUENCE {          |              |   | DAPS_HOF  |
| FailureInformation-v1610-IEs ::= SEQUENCE {  |              |   |           |
| failureInfoDAPS-r16 ::= SEQUENCE {           |              |   |           |
| failureType-r16                              | daps-failure | Indicate handover failure type is DAPS handover failure |           |
| }  |              |   |           |
| nonCriticalExtension                         |              |   |           |
| }  |              |   |           |
| }  |              |   |           |
| }  |              |   |           |
| }  |              |   |           |

| Condition | Explanation           |
|-----------|-----------------------|
| DAPS_HOF  | DAPS handover failure |

– *IABOtherInformation*

**Table 4.6.1-4A: IABOtherInformation**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| IABOtherInformation-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *LocationMeasurementIndication*

**Table 4.6.1-5: LocationMeasurementIndication**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                         |         |           |
|--|-------------------------|---------|-----------|
| Information Element                          | Value/remark            | Comment | Condition |
| LocationMeasurementIndication ::= SEQUENCE { |                         |         |           |
| criticalExtensions CHOICE {                  |                         |         |           |
| locationMeasurementIndication SEQUENCE {     |                         |         |           |
| measurementIndication CHOICE {               |                         |         |           |
| setup  | LocationMeasurementInfo |         |           |
| }  |                         |         |           |
| lateNonCriticalExtension                     | Not checked             |         |           |
| nonCriticalExtension                         | Not checked             |         |           |
| }  |                         |         |           |
| }  |                         |         |           |
| }  |                         |         |           |

– *LoggedMeasurementConfiguration*

**Table 4.6.1-5AA: LoggedMeasurementConfiguration**

| Derivation Path: TS 38.331 [6], clause 6.2.2      |              |         |           |
|---|--------------|---------|-----------|
| Information Element                               | Value/remark | Comment | Condition |
| LoggedMeasurementConfiguration-r16 ::= SEQUENCE { |              |         |           |
| FFS   |              |         |           |
| }   |              |         |           |

– *MCGFailureInformation*

**Table 4.6.1-5AB: MCGFailureInformation**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MCGFailureInformation-r16 ::= SEQUENCE {     |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *MeasurementReport*

**Table 4.6.1-5A: MeasurementReport**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasurementReport ::= SEQUENCE {             |              |         |           |
| criticalExtensions CHOICE {                  |              |         |           |
| measurementReport SEQUENCE {                 |              |         |           |
| measResults                                  | MeasResults  |         |           |
| lateNonCriticalExtension                     | Not checked  |         |           |
| nonCriticalExtension                         | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |
| }  |              |         |           |

*MIB***Table 4.6.1-6: MIB**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |   |   |            |
|--|---|---|------------|
| Information Element                          | Value/remark  | Comment   | Condition  |
| MIB ::= SEQUENCE {                           |   |   |            |
| systemFrameNumber                            | A valid value as defined in TS 38.331 [6]   |   |            |
| subCarrierSpacingCommon                      | scs15or60   | For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1. | SCS15or60  |
|  | scs30or120  | For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1. | SCS30or120 |
| ssb-subcarrierOffset                         | Set to the integer value of the 4 LSB of kSSB defined for the frequency of the cell | For signalling test cases see clause 6.2.3, otherwise see clause 4.3.1. |            |
| dmrs-TypeA-Position                          | pos2  |   |            |
| pdccch-ConfigSIB1                            | PDCCH-ConfigSIB1  |   |            |
| cellBarred                                   | notBarred   |   |            |
| intraFreqReselection                         | allowed   |   |            |
| spare  | 0   |   |            |
| }  |   |   |            |

| Condition  | Explanation             |
|------------|-------------------------|
| SCS15or60  | SCS is 15kHz or 60kHz   |
| SCS30or120 | SCS is 30kHz or 120kHz. |

*MobilityFromNRCommand***Table 4.6.1-8: MobilityFromNRCommand**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |   |         |           |
|--|---|---------|-----------|
| Information Element                          | Value/remark  | Comment | Condition |
| MobilityFromNRCommand ::= SEQUENCE {         |   |         |           |
| rrc-TransactionIdentifier                    | RRC-TransactionIdentifier   |         |           |
| criticalExtensions CHOICE {                  |   |         |           |
| mobilityFromNRCommand SEQUENCE {             |   |         |           |
| targetRAT-Type                               | eutra   |         |           |
| targetRAT-MessageContainer                   | OCTET STRING including the RRCConnectionReconfiguration message according TS 36.508 [2], table 4.6.1-8 with condition HO-TO-EUTRA |         |           |
| nas-SecurityParamFromNR                      | The 4 LSB of the downlink NAS COUNT   |         |           |
| lateNonCriticalExtension                     | Not present   |         |           |
| nonCriticalExtension                         | Not present   |         |           |
| }  |   |         |           |
| }  |   |         |           |
| }  |   |         |           |

— *Paging*

**Table 4.6.1-9: Paging**

| Derivation Path: TS 38.331 [6], clause 6.2.2                             |              |         |                   |
|--|--------------|---------|-------------------|
| Information Element  | Value/remark | Comment | Condition         |
| Paging ::= SEQUENCE {  |              |         |                   |
| pagingRecordList SEQUENCE<br>(SIZE(1..maxNrofPageRec)) OF PagingRecord { | 1 entry      |         |                   |
| PagingRecord[1] SEQUENCE {   |              | entry 1 |                   |
| ue-Identity CHOICE {   |              |         |                   |
| ng-5G-S-TMSI   | NG-5G-S-TMSI |         |                   |
| fullI-RNTI   | I-RNTI-Value |         | NR_RRC_R<br>ESUME |
| }  |              |         |                   |
| accessType   | Not present  |         |                   |
| }  |              |         |                   |
| }  |              |         |                   |
| lateNonCriticalExtension   | Not present  |         |                   |
| nonCriticalExtension   | Not present  |         |                   |
| }  |              |         |                   |

| Condition     | Explanation   |
|---------------|---|
| NR_RRC_RESUME | To page a UE in RRC_INACTIVE state to request RRC connection resumption |

— *RRCReestablishment*

**Table 4.6.1-10: RRCReestablishment**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                               |         |           |
|--|-------------------------------|---------|-----------|
| Information Element                          | Value/remark                  | Comment | Condition |
| RRCReestablishment ::= SEQUENCE {            |                               |         |           |
| rrc-TransactionIdentifier                    | RRC-<br>TransactionIdentifier |         |           |
| criticalExtensions CHOICE {                  |                               |         |           |
| rrcReestablishment SEQUENCE {                |                               |         |           |
| nextHopChainingCount                         | NextHopChainingCount          |         |           |
| lateNonCriticalExtension                     | Not present                   |         |           |
| nonCriticalExtension                         | Not present                   |         |           |
| }  |                               |         |           |
| }  |                               |         |           |
| }  |                               |         |           |

— *RRCReestablishmentComplete*

**Table 4.6.1-11: RRCReestablishmentComplete**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                               |         |           |
|--|-------------------------------|---------|-----------|
| Information Element                          | Value/remark                  | Comment | Condition |
| RRCReestablishmentComplete ::= SEQUENCE {    |                               |         |           |
| rrc-TransactionIdentifier                    | RRC-<br>TransactionIdentifier |         |           |
| criticalExtensions CHOICE {                  |                               |         |           |
| rrcReestablishmentComplete SEQUENCE {        |                               |         |           |
| lateNonCriticalExtension                     | Not checked                   |         |           |
| nonCriticalExtension                         | Not checked                   |         |           |
| }  |                               |         |           |
| }  |                               |         |           |
| }  |                               |         |           |

– *RRCReestablishmentRequest*

**Table 4.6.1-12: RRCReestablishmentRequest**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                                  |  |           |
|--|----------------------------------|--|-----------|
| Information Element                          | Value/remark                     | Comment  | Condition |
| RRCReestablishmentRequest ::= SEQUENCE {     |                                  |  |           |
| ue-Identity SEQUENCE {                       |                                  |  |           |
| c-RNTI                                       | RNTI-Value                       |  |           |
| physCellId                                   | PhysCellId                       | The physical cell identity of the PCell the UE was connected to prior to the failure |           |
| shortMAC-I                                   | ShortMAC-I                       |  |           |
| }  |                                  |  |           |
| reestablishmentCause                         | Not checked                      |  |           |
| spare  | Present but contents not checked |  |           |
| }  |                                  |  |           |

— *RRCReconfiguration*

**Table 4.6.1-13: RRCReconfiguration**

| Derivation Path: TS 38.331 [6], clause 6.2.2                                  |  |   |   |
|---|--|---|---|
| Information Element   | Value/remark   | Comment   | Condition   |
| RRCReconfiguration ::= SEQUENCE {   |  |   |   |
| rrc-TransactionIdentifier   | RRC-TransactionIdentifier  |   |   |
| criticalExtensions CHOICE {   |  |   |   |
| rrcReconfiguration SEQUENCE {   |  |   |   |
| radioBearerConfig   | Not present<br>RadioBearerConfig with conditions SRB2 and DRB1   |   | NR, NR-DC   |
|   | RadioBearerConfig with conditions SRB2 and REEST   |   | REEST   |
| secondaryCellGroup  | CellGroupConfig<br>CellGroupConfig with condition NR-DC_SCG<br>CellGroupConfig with conditions EN-DC and PSCell_change<br>CellGroupConfig with condition MEAS<br>CellGroupConfig with condition SCell_add<br>Not present | OCTET STRING (CONTAINING CellGroupConfig)<br>OCTET STRING (CONTAINING CellGroupConfig)<br>OCTET STRING (CONTAINING CellGroupConfig)<br>OCTET STRING (CONTAINING CellGroupConfig)<br>OCTET STRING (CONTAINING CellGroupConfig) | EN-DC<br>NR-DC_SCG<br>EN-DC_HO<br>EN-DC_MEAS<br>EN-DC_SCell_add                 |
| measConfig  | Not present<br>MeasConfig  | Measurements configuration  | NR_MEAS, EN-DC_MEAS   |
| lateNonCriticalExtension  | Not present  |   |   |
| nonCriticalExtension  | Not present  |   |   |
| nonCriticalExtension SEQUENCE {   |  |   | NR, SCell_add, NR_MEAS, NR-DC, SIDELINK, DAPS_HO_ReleaseSource, CHO, CPC, REEST |
| masterCellGroup   | CellGroupConfig with condition SRB2_DRB1<br>CellGroupConfig with condition SCell_add<br>CellGroupConfig with condition MEAS  | OCTET STRING (CONTAINING CellGroupConfig)<br>OCTET STRING (CONTAINING CellGroupConfig)<br>OCTET STRING (CONTAINING CellGroupConfig)   | NR, NR-DC<br>SCell_add<br>NR_MEAS   |
|   | CellGroupConfig with condition REEST   | OCTET STRING (CONTAINING CellGroupConfig)   | REEST   |
| fullConfig  | Not present  |   |   |
| dedicatedNAS-MessageList  | Not present  |   |   |
| dedicatedNAS-MessageList SEQUENCE (SIZE(1..maxDRB)) OF DedicatedNAS-Message { | 1 entry  |   | NR  |
| DedicatedNAS-Message[1]   | DedicatedNAS-Message   | entry 1   |   |

|  |  |  |   |
|--|--|--|---|
|  |  | A sequence of OCTET STRING(s) containing one or more DedicatedNAS-Message(s) |   |
| }                                      |  |  |   |
| masterKeyUpdate                        | Not present  |  |   |
| masterKeyUpdate SEQUENCE {             |  |  | MasterKeyChange   |
| keySetChangeIndicator                  | true   |  |   |
| nextHopChainingCount                   | NextHopChainingCount   |  |   |
| nas-Container                          | Not present  |  |   |
| nas-Container                          | OCTET STRING including the 10 Octets value generated according to TS 24.501 [28] clause 9.11.2.9 |  | Inter_Sys_HO  |
| }                                      |  |  |   |
| dedicatedSIB1-Delivery                 | Not present  |  |   |
| dedicatedSystemInformationDelivery     | Not present  |  |   |
| otherConfig                            | Not present  |  |   |
| nonCriticalExtension                   | Not present  |  |   |
| nonCriticalExtension SEQUENCE {        |  |  | NR-DC,<br>SIDELINK,<br>DAPS_HO_ ReleaseSource, CHO, CPC |
| otherConfig-v1540                      | Not present  |  |   |
| nonCriticalExtension SEQUENCE {        |  |  |   |
| mrdc-SecondaryCellGroupConfig          | Not present  |  |   |
| mrdc-SecondaryCellGroupConfig CHOICE { |  |  | NR-DC   |
| setup SEQUENCE {                       |  |  |   |
| mrdc-ReleaseAndAdd                     | Not present  |  |   |
| mrdc-SecondaryCellGroup CHOICE {       |  |  |   |
| nr-SCG                                 | RRCReconfiguration with condition NR-DC_SCG  | OCTET STRING (CONTAINING RRCReconfiguration)                                 |   |
| }                                      |  |  |   |
| }                                      |  |  |   |
| }                                      |  |  |   |
| radioBearerConfig2                     | RadioBearerConfig with condition DRBn and SecondaryKeys  | OCTET STRING (CONTAINING RadioBearerConfig)                                  | NR-DC   |
| sk-Counter                             | SK-Counter   |  |   |
| nonCriticalExtension                   | Not present  |  |   |
| nonCriticalExtension SEQUENCE {        |  |  | SIDELINK,<br>DAPS_HO_ ReleaseSource, CHO, CPC           |
| otherConfig-v1610                      | Not present  |  |   |
| bap-Config-r16                         | Not present  |  |   |
| iab-IP-AddressConfigurationList-r16    | Not present  |  |   |
| conditionalReconfiguration-r16         | Not present  |  |   |
|  | ConditionalReconfiguration   |  | CHO, CPC  |
| daps-SourceRelease-r16                 | Not present  |  |   |
|  | true   |  | DAPS_HO_ ReleaseSource                                  |
| t316-r16                               | Not present  |  |   |
| needForGapsConfigNR-r16                | Not present  |  |   |
| onDemandSIB-Request-r16                | Not present  |  |   |

|                                   |                          |  |          |
|-----------------------------------|--------------------------|--|----------|
| dedicatedPosSysInfoDelivery-r16   | Not present              |  |          |
| sl-ConfigDedicatedNR-r16          | Not present              |  |          |
| sl-ConfigDedicatedNR-r16 CHOICE { |                          |  | SIDELINK |
| setup                             | SL-ConfigDedicatedNR-r16 |  |          |
| }                                 |                          |  |          |
| sl-ConfigDedicatedEUTRA-Info-r16  | Not present              |  |          |
| smtc-r16                          | Not present              |  |          |
| nonCriticalExtension              | Not present              |  |          |
| }                                 |                          |  |          |
| }                                 |                          |  |          |
| }                                 |                          |  |          |
| }                                 |                          |  |          |
| }                                 |                          |  |          |
| }                                 |                          |  |          |
| }                                 |                          |  |          |

| Condition             | Explanation  |
|-----------------------|--|
| EN-DC                 | E-UTRA-NR Dual Connectivity  |
| EN-DC_MEAS            | An EN-DC measurement is configured   |
| NR_MEAS               | A NR measurement is configured   |
| NR                    | NG-RAN NR Radio Access   |
| NR-DC                 | NR-NR Dual Connectivity is configured  |
| NR-DC_SCG             | Add SCG side configuration(NR-DC)  |
| EN-DC_HO              | NR PSCell change (EN-DC)   |
| SCell_add             | Add SCell  |
| EN-DC_SCell_add       | Add Scell (EN-DC)  |
| MasterKeyChange       | MasterKeyUpdate when performing ReconfigurationWithSync and indicating a change of the AS security algorithms associated to the master key |
| Inter_Sys_HO          | Used during inter-system handover to NR procedure  |
| REEST                 | The first RRCCreconfiguration message after successful completion of the RRC re-establishment procedure                                    |
| SIDELINK              | For NR sidelink dedicated configuration  |
| DAPS_HO_ReleaseSource | The source cell part of DAPS operation is to be stopped and the source cell part of DAPS configuration is to be released.                  |
| CHO                   | Conditional handover   |
| CPC                   | Conditional PSCell change  |

— *RRCReconfigurationComplete*

**Table 4.6.1-14: RRCReconfigurationComplete**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                            |  |           |
|--|----------------------------|--|-----------|
| Information Element                          | Value/remark               | Comment  | Condition |
| RRCReconfigurationComplete ::= SEQUENCE {    |                            |  |           |
| rrc-TransactionIdentifier                    | Not checked                |  |           |
| criticalExtensions CHOICE {                  |                            |  |           |
| rrcReconfigurationComplete SEQUENCE {        |                            |  |           |
| lateNonCriticalExtension                     | Not checked                |  |           |
| nonCriticalExtension SEQUENCE {              |                            |  | NR-DC     |
| uplinkTxDirectCurrentList                    | Not checked                |  |           |
| nonCriticalExtension SEQUENCE {              |                            |  |           |
| scg-Response CHOICE {                        |                            |  |           |
| nr-SCG-Response                              | RRCReconfigurationComplete | OCTET STRING<br>(CONTAINING<br>RRCReconfigurationComplete) |           |
| }  |                            |  |           |
| nonCriticalExtension                         | Not checked                |  |           |
| }  |                            |  |           |
| }  |                            |  |           |
| nonCriticalExtension                         | Not checked                |  |           |
| }  |                            |  |           |
| }  |                            |  |           |

| Condition | Explanation                 |
|-----------|-----------------------------|
| NR-DC     | Used in NR-DC configuration |

— *RRCReject*

**Table 4.6.1-15: RRCReject**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RRCReject ::= SEQUENCE {                     |              |         |           |
| criticalExtensions CHOICE {                  |              |         |           |
| rrcReject SEQUENCE {                         |              |         |           |
| waitTime                                     | 1            |         |           |
| lateNonCriticalExtension                     | Not present  |         |           |
| nonCriticalExtension                         | Not present  |         |           |
| }  |              |         |           |
| }  |              |         |           |
| }  |              |         |           |

— *RRCRelease***Table 4.6.1-16: RRCRelease**

| Derivation Path: TS 38.331 [6], clause 6.2.2                           |                           |  |                 |
|--|---------------------------|--|-----------------|
| Information Element  | Value/remark              | Comment                                    | Condition       |
| RRCRelease ::= SEQUENCE {  |                           |  |                 |
| rrc-TransactionIdentifier  | RRC-TransactionIdentifier |  |                 |
| criticalExtensions CHOICE {  |                           |  |                 |
| rrcRelease SEQUENCE {  |                           |  |                 |
| redirectedCarrierInfo  | Not present               |  |                 |
| cellReselectionPriorities  | Not present               |  |                 |
| suspendConfig  | Not present               |  |                 |
| suspendConfig SEQUENCE {   |                           |  | NR_RRC_INACTIVE |
| fullI-RNTI   | I-RNTI-Value              |  |                 |
| shortI-RNTI  | ShortI-RNTI-Value         |  |                 |
| ran-PagingCycle  | rf32                      |  |                 |
| ran-NotificationAreaInfo CHOICE {                                      |                           |  |                 |
| cellList SEQUENCE (SIZE (1..maxPLMNIdentities)) OF PLMN-RAN-AreaCell { | 1 entry                   |  |                 |
| PLMN-RAN-AreaCellList[1] SEQUENCE {                                    |                           | entry 1                                    |                 |
| plmn-Identity  | Not present               |  |                 |
| ran-AreaCells SEQUENCE (SIZE (1..32)) OF CellIdentity {                | 1 entry                   |  |                 |
| CellIdentity[1]  | CellIdentity              | entry 1<br>Cellidentity for the used cell. |                 |
| }  |                           |  |                 |
| }  |                           |  |                 |
| }  |                           |  |                 |
| }  |                           |  |                 |
| t380   | Not present               |  |                 |
| nextHopChainingCount   | NextHopChainingCount      |  |                 |
| }  |                           |  |                 |
| deprioritisationReq  | Not present               |  |                 |
| lateNonCriticalExtension   | Not present               |  |                 |
| nonCriticalExtension   | Not present               |  |                 |
| }  |                           |  |                 |
| }  |                           |  |                 |
| }  |                           |  |                 |

| Condition       | Explanation               |
|-----------------|---------------------------|
| NR_RRC_INACTIVE | NR RRC state RRC_INACTIVE |

— *RRCResume*

**Table 4.6.1-17: RRCResume**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |   |   |           |
|--|---|---|-----------|
| Information Element                          | Value/remark                            | Comment                                   | Condition |
| RRCResume ::= SEQUENCE {                     |   |   |           |
| rrc-TransactionIdentifier                    | RRC-TransactionIdentifier               |   |           |
| criticalExtensions CHOICE {                  |   |   |           |
| rrcResume SEQUENCE {                         |   |   |           |
| radioBearerConfig                            | RadioBearerConfig with condition RESUME |   |           |
| masterCellGroup                              | CellGroupConfig with condition RESUME   | OCTET STRING (CONTAINING CellGroupConfig) |           |
| measConfig                                   | Not present                             |   |           |
| fullConfig                                   | Not present                             |   |           |
| lateNonCriticalExtension                     | Not present                             |   |           |
| nonCriticalExtension                         | Not present                             |   |           |
| }  |   |   |           |
| }  |   |   |           |
| }  |   |   |           |

— *RRCResumeComplete*

**Table 4.6.1-18: RRCResumeComplete**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                           |         |           |
|--|---------------------------|---------|-----------|
| Information Element                          | Value/remark              | Comment | Condition |
| RRCResumeComplete ::= SEQUENCE {             |                           |         |           |
| rrc-TransactionIdentifier                    | RRC-TransactionIdentifier |         |           |
| criticalExtensions CHOICE {                  |                           |         |           |
| rrcResumeComplete SEQUENCE {                 |                           |         |           |
| dedicatedNAS-Message                         | Not checked               |         |           |
| selectedPLMN-Identity                        | Not checked               |         |           |
| uplinkTxDirectCurrentList                    | Not checked               |         |           |
| lateNonCriticalExtension                     | Not checked               |         |           |
| nonCriticalExtension                         | Not checked               |         |           |
| }  |                           |         |           |
| }  |                           |         |           |
| }  |                           |         |           |

— *RRCResumeRequest*

**Table 4.6.1-19: RRCResumeRequest**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                   |         |           |
|--|-------------------|---------|-----------|
| Information Element                          | Value/remark      | Comment | Condition |
| RRCResumeRequest ::= SEQUENCE {              |                   |         |           |
| rrcResumeRequest SEQUENCE {                  |                   |         |           |
| resumelDentity                               | ShortI-RNTI-Value |         |           |
| resumeMAC-I                                  | Not checked       |         |           |
| resumeCause                                  | ResumeCause       |         |           |
| spare  | Not checked       |         |           |
| }  |                   |         |           |
| }  |                   |         |           |

— *RRCResumeRequest1*

**Table 4.6.1-20: *RRCResumeRequest1***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RRCResumeRequest1 ::= SEQUENCE {             |              |         |           |
| rrcResumeRequest1 SEQUENCE {                 |              |         |           |
| resumeIdentity                               | I-RNTI-Value |         |           |
| resumeMAC-I                                  | Not checked  |         |           |
| resumeCause                                  | ResumeCause  |         |           |
| spare  | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |

— *RRCSetup*

**Table 4.6.1-21: *RRCSetup***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |  |   |           |
|--|--|---|-----------|
| Information Element                          | Value/remark                             | Comment   | Condition |
| RRCSetup ::= SEQUENCE {                      |  |   |           |
| rrc-TransactionIdentifier                    | RRC-<br>TransactionIdentifier            |   |           |
| criticalExtensions CHOICE {                  |  |   |           |
| rrcSetup SEQUENCE {                          |  |   |           |
| radioBearerConfig                            | RadioBearerConfig with<br>condition SRB1 |   |           |
| masterCellGroup                              | CellGroupConfig with<br>condition SRB1   | OCTET STRING<br>(CONTAINING<br>CellGroupConfig) |           |
| lateNonCriticalExtension                     | Not present                              |   |           |
| nonCriticalExtension                         | Not present                              |   |           |
| }  |  |   |           |
| }  |  |   |           |
| }  |  |   |           |

— *RRCSetupComplete*

**Table 4.6.1-22: *RRCSetupComplete***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                               |         |           |
|--|-------------------------------|---------|-----------|
| Information Element                          | Value/remark                  | Comment | Condition |
| RRCSetupComplete ::= SEQUENCE {              |                               |         |           |
| rrc-TransactionIdentifier                    | RRC-<br>TransactionIdentifier |         |           |
| criticalExtensions CHOICE {                  |                               |         |           |
| rrcSetupComplete SEQUENCE {                  |                               |         |           |
| selectedPLMN-Identity                        | Not checked                   |         |           |
| registeredAMF                                | Not checked                   |         |           |
| guami-Type                                   | Not checked                   |         |           |
| s-nssai-List                                 | Not checked                   |         |           |
| dedicatedNAS-Message                         | DedicatedNAS-Message          |         |           |
| ng-5G-S-TMSI-Value                           | Not checked                   |         |           |
| lateNonCriticalExtension                     | Not checked                   |         |           |
| nonCriticalExtension                         | Not checked                   |         |           |
| }  |                               |         |           |
| }  |                               |         |           |
| }  |                               |         |           |

— *RRCSignalingRequest*

**Table 4.6.1-23: *RRCSignalingRequest***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RRCSignalingRequest ::= SEQUENCE {           |              |         |           |
| rrcSignalingRequest SEQUENCE {               |              |         |           |
| ue-Identity CHOICE {                         |              |         |           |
| randomValue                                  | Not checked  |         |           |
| }  |              |         |           |
| establishmentCause                           | Not checked  |         |           |
| spare  | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |

— *RRCSystemInfoRequest*

**Table 4.6.1-24: *RRCSystemInfoRequest***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RRCSystemInfoRequest ::= SEQUENCE {          |              |         |           |
| criticalExtensions CHOICE {                  |              |         |           |
| rrcSystemInfoRequest SEQUENCE {              |              |         |           |
| requested-SI-List                            | Not checked  |         |           |
| spare  | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |
| }  |              |         |           |

— *SCGFailureInformation*

**Table 4.6.1-24A: *SCGFailureInformation***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SCGFailureInformation ::= SEQUENCE {         |              |         |           |
| criticalExtensions CHOICE {                  |              |         |           |
| scgFailureInformation SEQUENCE {             |              |         |           |
| failureReportSCG                             | Not checked  |         |           |
| nonCriticalExtension                         | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |
| }  |              |         |           |

— *SCGFailureInformationEUTRA*

**Table 4.6.1-24B: SCGFailureInformationEUTRA**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SCGFailureInformationEUTRA ::= SEQUENCE {    |              |         |           |
| criticalExtensions CHOICE {                  |              |         |           |
| scgFailureInformationEUTRA SEQUENCE {        |              |         |           |
| failureReportSCG-EUTRA                       | Not checked  |         |           |
| nonCriticalExtension                         | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |
| }  |              |         |           |

— *SecurityModeCommand*

**Table 4.6.1-25: SecurityModeCommand**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                               |         |           |
|--|-------------------------------|---------|-----------|
| Information Element                          | Value/remark                  | Comment | Condition |
| SecurityModeCommand ::= SEQUENCE {           |                               |         |           |
| rrc-TransactionIdentifier                    | RRC-<br>TransactionIdentifier |         |           |
| criticalExtensions CHOICE {                  |                               |         |           |
| securityModeCommand SEQUENCE {               |                               |         |           |
| securityConfigSMC SEQUENCE {                 |                               |         |           |
| securityAlgorithmConfig                      | SecurityAlgorithmConfig       |         |           |
| }  |                               |         |           |
| lateNonCriticalExtension                     | Not present                   |         |           |
| nonCriticalExtension                         | Not present                   |         |           |
| }  |                               |         |           |
| }  |                               |         |           |

— *SecurityModeComplete*

**Table 4.6.1-26: SecurityModeComplete**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                               |         |           |
|--|-------------------------------|---------|-----------|
| Information Element                          | Value/remark                  | Comment | Condition |
| SecurityModeComplete ::= SEQUENCE {          |                               |         |           |
| rrc-TransactionIdentifier                    | RRC-<br>TransactionIdentifier |         |           |
| criticalExtensions CHOICE {                  |                               |         |           |
| securityModeComplete SEQUENCE {              |                               |         |           |
| lateNonCriticalExtension                     | Not checked                   |         |           |
| nonCriticalExtension                         | Not checked                   |         |           |
| }  |                               |         |           |
| }  |                               |         |           |

— *SecurityModeFailure*

**Table 4.6.1-27: *SecurityModeFailure***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                               |         |           |
|--|-------------------------------|---------|-----------|
| Information Element                          | Value/remark                  | Comment | Condition |
| SecurityModeFailure ::= SEQUENCE {           |                               |         |           |
| rrc-TransactionIdentifier                    | RRC-<br>TransactionIdentifier |         |           |
| criticalExtensions CHOICE {                  |                               |         |           |
| securityModeFailure SEQUENCE {               |                               |         |           |
| lateNonCriticalExtension                     | Not checked                   |         |           |
| nonCriticalExtension                         | Not checked                   |         |           |
| }  |                               |         |           |
| }  |                               |         |           |
| }  |                               |         |           |

## — SIB1

**Table 4.6.1-28: SIB1**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |   |  |   |
|--|---|--|---|
| Information Element                          | Value/remark  | Comment  | Condition                               |
| SIB1 ::= SEQUENCE {                          |   |  |   |
| cellSelectionInfo SEQUENCE {                 |   |  |   |
| q-RxLevMin                                   | -70<br>-55<br>ROUND((-110+Delta(NRfs))/2)   | -140 dBm<br>-110 dBm<br>-110+Delta(NRfs)   | RF OR RRM<br>SIG AND FR1<br>SIG AND FR2 |
| q-RxLevMinOffset                             | Not present   |  |   |
| q-RxLevMinSUL                                | Not Present<br>-70<br>-55   | -140 dBm<br>-110 dBm   | SUL AND (RF OR RRM)<br>SUL AND SIG      |
| q-QualMin                                    | -20<br>Not present  | -20dB  | QBASED                                  |
| q-QualMinOffset                              | Not present   |  |   |
| }  |   |  |   |
| cellAccessRelatedInfo                        | CellAccessRelatedInfo   |  |   |
| connEstFailureControl                        | ConnEstFailureControl   |  |   |
| si-SchedulingInfo                            | Not present<br>SI-SchedulingInfo  |  | NR_1                                    |
| servingCellConfigCommon                      | ServingCellConfigComm onSIB   |  |   |
| ims-EmergencySupport                         | Not present<br>True   | Indicates the cell supports IMS emergency bearer services for UEs in limited service mode. | SIG                                     |
| eCallOverIMS-Support                         | Not present   |  |   |
| ue-TimersAndConstants                        | UE-TimersAndConstants   |  |   |
| uac-BarringInfo                              | Not present   |  |   |
| useFullResumeID                              | Not present   |  |   |
| lateNonCriticalExtension                     | Not present   |  |   |
| nonCriticalExtension                         | Not present   |  |   |
| }  |   |  |   |
| NOTE 1:                                      | Delta(NRfs) is derived based on calibration procedure defined in the clause 6.1.3.3. NRfs is NR frequency on which SIB1 is broadcasted.                                   |  |   |
| NOTE 2:                                      | ROUND is rounded off to the nearest integer. As an example, '1 to 1.49' set to '1' while '1.5 to 2' to '2' and '-2.0 to 1.5' set to '-2' while '-1.49 to -1' set to '-1'. |  |   |

| Condition | Explanation  |
|-----------|--|
| SUL       | For test cases using SUL frequency for the serving cell, Qrxlevmin is obtained from q-RxLevMinSUL. |
| QBASED    | This condition applies to Quality based signalling test cases.                                     |
| NR_1      | System information combination NR-1 according table 4.4.3.1.2-1 is applied.                        |
| SIG       | Used for signalling test cases.  |

— *SidelinkUEInformationNR*

**Table 4.6.1-28A: *SidelinkUEInformationNR***

| Derivation Path: TS 38.331 [6], clause 6.2.2   |                            |         |             |
|--|----------------------------|---------|-------------|
| Information Element  | Value/remark               | Comment | Condition   |
| SidelinkUEInformationNR-r16 ::= SEQUENCE {   |                            |         |             |
| criticalExtensions CHOICE {  |                            |         |             |
| sidelinkUEInformationNR-r16 SEQUENCE {   |                            |         |             |
| sl-RxInterestedFreqList-r16  | Not present                |         |             |
| sl-RxInterestedFreqList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER {            | 1 entry                    |         | SIDELINK_RX |
| INTEGER[1]   | 1                          | entry 1 |             |
| }  |                            |         |             |
| sl-TxResourceReqList-r16   | Not present                |         |             |
| sl-TxResourceReqList-r16 SEQUENCE (SIZE (1..maxNrofSL-Dest-r16)) OF SL-TxResourceReq-r16 { | 1 entry                    |         | SIDELINK_TX |
| SL-TxResourceReq-r16[1] SEQUENCE {   |                            | entry 1 |             |
| sl-DestinationIdentity-r16   | SL-DestinationIdentity-r16 |         |             |
| sl-CastType-r16  | unicast                    |         |             |
| sl-RLC-ModelIndicationList-r16   | Not present                |         |             |
| sl-QoS-InfoList-r16 SEQUENCE (SIZE (1..maxNrofSL-QFIsPerDest-r16)) OF SL-QoS-Info-r16 {    | 1 entry                    |         |             |
| SL-QoS-Info-r16[1] SEQUENCE {  |                            | entry 1 |             |
| sl-QoS-FlowIdentity-r16  | SL-QoS-FlowIdentity-r16    |         |             |
| sl-QoS-Profile-r16   | SL-QoS-Profile-r16         |         |             |
| }  |                            |         |             |
| }  |                            |         |             |
| sl-TypeTxSyncList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-TypeTxSync-r16 {        | 1 entry                    |         |             |
| SL-TypeTxSync-r16[1]   | SL-TypeTxSync-r16          | entry 1 |             |
| }  |                            |         |             |
| sl-TxInterestedFreqList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF INTEGER {            | 1 entry                    |         |             |
| INTEGER[1]   | 1                          | entry 1 |             |
| }  |                            |         |             |
| sl-CapabilityInformationSidelink-r16[1]  | Not present                |         |             |
| }  |                            |         |             |
| }  |                            |         |             |
| sl-FailureList-r16   | Not present                |         |             |
| lateNonCriticalExtension   | Not present                |         |             |
| nonCriticalExtension   | Not present                |         |             |
| }  |                            |         |             |
| }  |                            |         |             |
| }  |                            |         |             |

| Condition   | Explanation   |
|-------------|---|
| SIDELINK_TX | Used when UE indicates its interest on sidelink transmission. |
| SIDELINK_RX | Used when UE indicates its interest on sidelink reception.    |

— *SystemInformation*

**Table 4.6.1-29: SystemInformation**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                            |         |           |
|--|----------------------------|---------|-----------|
| Information Element                          | Value/remark               | Comment | Condition |
| SystemInformation ::= SEQUENCE {             |                            |         |           |
| criticalExtensions CHOICE {                  |                            |         |           |
| systemInformation SEQUENCE {                 |                            |         |           |
| sib-TypeAndInfo SEQUENCE (SIZE (1..maxSIB))  | See subclause 4.4.3.1.3    |         |           |
| OF CHOICE                                    |                            |         |           |
| sibX   | "X" denotes the SIB number |         |           |
| ...  |                            |         |           |
| sibY   | "Y" denotes the SIB number |         |           |
| }  |                            |         |           |
| lateNonCriticalExtension                     | Not present                |         |           |
| nonCriticalExtension                         | Not present                |         |           |
| }  |                            |         |           |
| }  |                            |         |           |
| }  |                            |         |           |

— *UEAssistanceInformation*

**Table 4.6.1-30: *UEAssistanceInformation***

| Derivation Path: TS 38.331 [6], clause 6.2.2  |                         |         |           |
|---|-------------------------|---------|-----------|
| Information Element   | Value/remark            | Comment | Condition |
| UEAssistanceInformation ::= SEQUENCE {  |                         |         |           |
| criticalExtensions CHOICE {   |                         |         |           |
| ueAssistanceInformation SEQUENCE {  |                         |         |           |
| delayBudgetReport CHOICE {  |                         |         |           |
| type1   | Not checked             |         |           |
| }   |                         |         |           |
| lateNonCriticalExtension  | Not checked             |         |           |
| nonCriticalExtension  | Not checked             |         |           |
| nonCriticalExtension SEQUENCE {   |                         |         | SIDELINK  |
| overheatingAssistance   | Not checked             |         |           |
| nonCriticalExtension SEQUENCE {   |                         |         |           |
| idc-Assistance-r16  | Not checked             |         |           |
| drx-Preference-r16  | Not checked             |         |           |
| maxBW-Preference-r16  | Not checked             |         |           |
| maxCC-Preference-r16  | Not checked             |         |           |
| maxMIMO-LayerPreference-r16   | Not checked             |         |           |
| minSchedulingOffsetPreference-r16   | Not checked             |         |           |
| releasePreference-r16   | Not checked             |         |           |
| sl-UE-AssistanceInformationNR-r16   | Not checked             |         |           |
| sl-UE-AssistanceInformationNR-r16<br>SEQUENCE (SIZE (1..maxNrofTrafficPattern-r16))<br>OF SL-TrafficPatternInfo-r16 { | 1 entry                 |         | SIDELINK  |
| SL-TrafficPatternInfo-r16[1] SEQUENCE {   |                         | entry 1 |           |
| trafficPeriodicity-r16  | FFS                     |         |           |
| timingOffset-r16  | FFS                     |         |           |
| messageSize-r16   | FFS                     |         |           |
| sl-QoS-FlowIdentity-r16   | SL-QoS-FlowIdentity-r16 |         |           |
| }   |                         |         |           |
| }   |                         |         |           |
| referenceTimeInfoPreference-r16   | Not checked             |         |           |
| nonCriticalExtension  | Not checked             |         |           |
| }   |                         |         |           |
| }   |                         |         |           |
| }   |                         |         |           |
| }   |                         |         |           |
| }   |                         |         |           |

– *UECapabilityEnquiry*

**Table 4.6.1-31: *UECapabilityEnquiry***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                              |         |           |
|--|------------------------------|---------|-----------|
| Information Element                          | Value/remark                 | Comment | Condition |
| UECapabilityEnquiry ::= SEQUENCE {           |                              |         |           |
| rrc-TransactionIdentifier                    | RRC-TransactionIdentifier    |         |           |
| criticalExtensions CHOICE {                  |                              |         |           |
| ueCapabilityEnquiry SEQUENCE {               |                              |         |           |
| ue-CapabilityRAT-RequestList                 | UE-CapabilityRAT-RequestList |         |           |
| lateNonCriticalExtension                     | Not present                  |         |           |
| ue-CapabilityEnquiryExt                      |                              |         | RACS      |
| nonCriticalExtension SEQUENCE {              |                              |         |           |
| rrc-SegAllowed-r16                           | enabled                      |         |           |
| }  |                              |         |           |
| }  |                              |         |           |
| }  |                              |         |           |
| }  |                              |         |           |
| }  |                              |         |           |
| }  |                              |         |           |
| }  |                              |         |           |
| }  |                              |         |           |

| Condition | Explanation   |
|-----------|---|
| RACS      | UE supports segmentation of UECapabilityInformation message (pc_NR_UL_Segmentation) |

– *UECapabilityInformation*

**Table 4.6.1-32: *UECapabilityInformation***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                                |         |           |
|--|--------------------------------|---------|-----------|
| Information Element                          | Value/remark                   | Comment | Condition |
| UECapabilityInformation ::= SEQUENCE {       |                                |         |           |
| rrc-TransactionIdentifier                    | RRC-TransactionIdentifier      |         |           |
| criticalExtensions CHOICE {                  |                                |         |           |
| ueCapabilityInformation SEQUENCE {           |                                |         |           |
| ue-CapabilityRAT-ContainerList               | UE-CapabilityRAT-ContainerList |         |           |
| lateNonCriticalExtension                     | Not checked                    |         |           |
| nonCriticalExtension                         | Not checked                    |         |           |
| }  |                                |         |           |
| }  |                                |         |           |
| }  |                                |         |           |

– *UEInformationRequest*

**Table 4.6.1-32A: *UEInformationRequest***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| UEInformationRequest-r16 ::= SEQUENCE {      |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *UEInformationResponse*

**Table 4.6.1-32B: *UEInformationResponse***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| UEInformationResponse-r16 ::= SEQUENCE {     |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *ULDedicatedMessageSegment*

**Table 4.6.1-32C: *ULDedicatedMessageSegment***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                                   |  |           |
|--|-----------------------------------|--|-----------|
| Information Element                          | Value/remark                      | Comment  | Condition |
| ULDedicatedMessageSegment-r16 ::= SEQUENCE { |                                   |  |           |
| criticalExtensions CHOICE {                  |                                   |  |           |
| ulDedicatedMessageSegment-r16 SEQUENCE {     |                                   |  |           |
| segmentNumber-r16                            | Any allowed value between 0 to 15 |  |           |
| rrc-MessageSegmentContainer-r16              | Not Checked                       | OCTET STRING including segmented UE Capability Information message |           |
| rrc-MessageSegmentType-r16                   | Not Checked                       |  |           |
| lateNonCriticalExtension                     | Not checked                       |  |           |
| nonCriticalExtension                         | Not checked                       |  |           |
| }  |                                   |  |           |
| }  |                                   |  |           |
| }  |                                   |  |           |

– *ULInformationTransfer*

**Table 4.6.1-33: *ULInformationTransfer***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |                      |         |           |
|--|----------------------|---------|-----------|
| Information Element                          | Value/remark         | Comment | Condition |
| ULInformationTransfer ::= SEQUENCE {         |                      |         |           |
| criticalExtensions CHOICE {                  |                      |         |           |
| ullInformationTransfer SEQUENCE {            |                      |         |           |
| dedicatedNAS-Message                         | DedicatedNAS-Message |         |           |
| lateNonCriticalExtension                     | Not checked          |         |           |
| nonCriticalExtension                         | Not checked          |         |           |
| }  |                      |         |           |
| }  |                      |         |           |
| }  |                      |         |           |

– *ULInformationTransfer|RAT*

**Table 4.6.1-33A: *ULInformationTransfer|RAT***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ULInformationTransfer RAT-r16 ::= SEQUENCE { |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *ULInformationTransferMRDC*

**Table 4.6.1-34: *ULInformationTransferMRDC***

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ULInformationTransferMRDC ::= SEQUENCE {     |              |         |           |
| criticalExtensions CHOICE {                  |              |         |           |
| c1 CHOICE {                                  |              |         |           |
| ullInformationTransferMRDC SEQUENCE {        |              |         |           |
| ul-DCCH-MessageNR                            | Not checked  |         |           |
| ul-DCCH-MessageEUTRA                         | Not checked  |         |           |
| lateNonCriticalExtension                     | Not checked  |         |           |
| nonCriticalExtension                         | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |
| }  |              |         |           |
| }  |              |         |           |

## 4.6.1A Contents of PC5 RRC messages

– *MasterInformationBlockSidelink*

**Table 4.6.1A-1: *MasterInformationBlockSidelink***

| Derivation Path: TS 38.331 [6], clause 6.6.2  |              |         |           |
|---|--------------|---------|-----------|
| Information Element                           | Value/remark | Comment | Condition |
| MasterInformationBlockSidelink ::= SEQUENCE { |              |         |           |
| FFS   |              |         |           |
| }   |              |         |           |

– *MeasurementReportSidelink*

**Table 4.6.1A-2: *MeasurementReportSidelink***

| Derivation Path: TS 38.331 [6], clause 6.6.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasurementReportSidelink ::= SEQUENCE {     |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *RRCReconfigurationSidelink*

**Table 4.6.1A-3: *RRCReconfigurationSidelink***

| Derivation Path: TS 38.331 [6], clause 6.6.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RRCReconfigurationSidelink ::= SEQUENCE {    |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *RRCReconfigurationCompleteSidelink*

**Table 4.6.1A-4: RRCReconfigurationCompleteSidelink**

| Derivation Path: TS 38.331 [6], clause 6.6.2      |              |         |           |
|---|--------------|---------|-----------|
| Information Element                               | Value/remark | Comment | Condition |
| RRCReconfigurationCompleteSidelink ::= SEQUENCE { |              |         |           |
| FFS   |              |         |           |
| }   |              |         |           |

- *RRCReconfigurationFailureSidelink*

**Table 4.6.1A-5: RRCReconfigurationFailureSidelink**

| Derivation Path: TS 38.331 [6], clause 6.6.2     |              |         |           |
|--|--------------|---------|-----------|
| Information Element                              | Value/remark | Comment | Condition |
| RRCReconfigurationFailureSidelink ::= SEQUENCE { |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *UECapabilityEnquirySidelink*

**Table 4.6.1A-6: UECapabilityEnquirySidelink**

| Derivation Path: TS 38.331 [6], clause 6.6.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| UECapabilityEnquirySidelink ::= SEQUENCE {   |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *UECapabilityInformationSidelink*

**Table 4.6.1A-7: UECapabilityInformationSidelink**

| Derivation Path: TS 38.331 [6], clause 6.6.2   |              |         |           |
|--|--------------|---------|-----------|
| Information Element                            | Value/remark | Comment | Condition |
| UECapabilityInformationSidelink ::= SEQUENCE { |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

## 4.6.2 System information blocks

- *SIB2*

*SIB2* contains cell re-selection information common for intra-frequency, inter-frequency and/ or inter-RAT cell re-selection (i.e. applicable for more than one type of cell re-selection but not necessarily all) as well as intra-frequency cell re-selection information other than neighbouring cell related.

Table 4.6.2-1: SIB2

| Derivation Path: TS 38.331 [6], clause 6.3.1 |               |   |             |
|--|---------------|---|-------------|
| Information Element                          | Value/remark  | Comment   | Condition   |
| SIB2 ::= SEQUENCE {                          |               |   |             |
| cellReselectionInfoCommon SEQUENCE {         |               |   |             |
| nrofSS-BlocksToAverage                       | 2             |   |             |
| absThreshSS-BlocksConsolidation SEQUENCE{    |               |   |             |
| thresholdRSRP                                | RSRP-Range    | Table 4.6.3-152   |             |
| thresholdRSRQ                                | Not present   |   |             |
| thresholdSINR                                | Not present   |   |             |
| }  |               |   |             |
| rangeToBestCell                              | dB0           |   |             |
| q-Hyst                                       | dB0           | To reduce interference between intra-frequency multiple cells |             |
| speedStateReselectionPars                    | Not present   |   |             |
| }  |               |   |             |
| cellReselectionServingFreqInfo SEQUENCE {    |               |   |             |
| s-NonIntraSearchP                            | Not present   |   |             |
| s-NonIntraSearchQ                            | Not present   |   |             |
| threshServingLowP                            | 0             | Actual value of threshold = field value * 2 [dB]              |             |
| threshServingLowQ                            | Not present   |   |             |
|  | 3             | 3dB   | QBASED      |
| cellReselectionPriority                      | 4             | A middle value in the range has been selected                 |             |
| cellReselectionSubPriority                   | Not present   |   |             |
| }  |               |   |             |
| intraFreqCellReselectionInfo SEQUENCE {      |               |   |             |
| q-RxLevMin                                   | -70           | -140dBm   |             |
|  | -55           | -110dBm   | SIG         |
| q-RxLevMinSUL                                | Not Present   |   |             |
|  | -70           | -140dBm   | SUL         |
|  | -55           | -110dBm   | SUL AND SIG |
| q-QualMin                                    | Not present   |   |             |
|  | -20           | -20dB   | QBASED      |
| s-IntraSearchP                               | 31            | Actual value of threshold = field value * 2 [dB]              |             |
| s-IntraSearchQ                               | Not present   |   |             |
| t-ReselectionNR                              | 0             |   |             |
| frequencyBandList                            | Not present   |   |             |
| frequencyBandListSUL                         | Not present   |   |             |
| p-Max  | Not present   |   |             |
| smtc   | SSB-MTC       | Table 4.6.3-185   |             |
| ss-RSSI-Measurement                          | Not present   |   |             |
| ssb-ToMeasure                                | SSB-ToMeasure |   |             |
| deriveSSB-IndexFromCell                      | false         |   | FDD         |
|  | true          |   | TDD         |
| }  |               |   |             |
| }  |               |   |             |

| Condition | Explanation   |
|-----------|---|
| SUL       | For test cases using SUL frequency for the serving cell, Qrxlevmin is obtained from <i>q-RxLevMin-sul</i> . |
| QBASED    | This condition applies to Quality based signalling test cases.  |

— ***SIB3***

*SIB3* contains neighbouring cell related information relevant only for intra-frequency cell re-selection. The IE includes cells with specific re-selection parameters as well as blacklisted cells.

**Table 4.6.2-2: *SIB3***

| Derivation Path: TS 38.331 [6], clause 6.3.1 |              |  |           |
|--|--------------|--|-----------|
| Information Element                          | Value/remark | Comment  | Condition |
| SIB3 ::= SEQUENCE {                          |              |  |           |
| intraFreqNeighCellList                       | Not present  | Not required unless Qoffset configuration is tested. When Qoffset configuration is tested, see table 6.3.1.1-1                             |           |
| intraFreqBlackCellList                       | Not present  | Not required unless Blacklisted cell list configuration is tested. When Blacklisted cell list configuration is tested, see table 6.3.1.1-1 |           |
| lateNonCriticalExtension                     | Not present  |  |           |
| }  |              |  |           |

— ***SIB4***

*SIB4* contains information relevant only for inter-frequency cell re-selection i.e. information about other NR frequencies and inter-frequency neighbouring cells relevant for cell re-selection. The IE includes cell re-selection parameters common for a frequency as well as cell specific re-selection parameters.

**Table 4.6.2-3: SIB4**

| Derivation Path: TS 38.331 [6], clause 6.3.1   |   |  |                            |
|--|---|--|----------------------------|
| Information Element  | Value/remark  | Comment  | Condition                  |
| SIB4 ::= SEQUENCE {<br>interFreqCarrierFreqList SEQUENCE (SIZE (1..maxFreq)) OF InterFreqCarrierFreqInfo { | The same number of entries as the configured inter-freq carriers defined in table 6.3.1.2-1 | $n$ denotes the index of the entry   |                            |
| InterFreqCarrierFreqInfo[n] SEQUENCE {<br>dl-CarrierFreq   | Downlink NR SSB ARFCN.<br>See table 6.3.1.2-1   | entry $n$  |                            |
| frequencyBandList  | MultiFrequencyBandList NR-SIB   |  |                            |
| frequencyBandListSUL   | Not present   |  |                            |
| nrofSS-BlocksToAverage   | 2   |  |                            |
| absThreshSS-BlocksConsolidation SEQUENCE {<br>thresholdRSRP  | RSRP-Range  | Table 4.6.3-152  |                            |
| thresholdRSRQ  | Not present   |  |                            |
| thresholdSINR  | Not present   |  |                            |
| }<br>smtc  | SSB-MTC   | Table 4.6.3-185  |                            |
| ssbSubcarrierSpacing   | SubcarrierSpacing   | Table 4.6.3-188  |                            |
| ssb-ToMeasure  | SSB-ToMeasure   |  |                            |
| deriveSSB-IndexFromCell  | false<br>true   | FDD<br>TDD   |                            |
| ss-RSSI-Measurement  | Not present   |  |                            |
| q-RxLevMin   | -70<br>-55<br>ROUND((-110+Delta(NRfn))/2)   | -140dBm<br>-110dBm<br>NOTE1 and NOTE2.   | SIG and FR1<br>SIG and FR2 |
| q-RxLevMinSUL  | -70<br>Not present<br>-55   | -140dBm, For RF/RRM test cases<br>-110dBm  | SUL<br>SUL and SIG         |
| q-QualMin  | Not present<br>-20  |  | QBASED                     |
| p-Max  | Not present   |  |                            |
| t-ReselectionNR  | 0   |  |                            |
| t-ReselectionNR-SF   | Not present   | Not required unless speed-dependent cell re-selection is tested.   |                            |
| threshX-HighP  | 2   | 4dB, This value should be higher than threshServingLow of the serving cell to avoid ping-pong with lower priority cells. |                            |
| threshX-LowP   | 1   | 2dB  |                            |
| threshX-Q SEQUENCE {}  | Not present   |  |                            |
| threshX-Q SEQUENCE {<br>threshX-HighQ  | 5   | 5dB  | QBASED                     |
| threshX-LowQ   | 5   | 5dB  |                            |
| }<br>cellReselectionPriority   | 4   | The same priority as the one used for serving cell in SIB 2.   |                            |

|  |   |   |                                      |
|--|---|---|--------------------------------------|
| cellReselectionSubPriority   | Not present   | The same subpriority as the one used for serving cell in SIB 2.   |                                      |
| q-OffsetFreq   | $dB_{XY} \text{ with } XY = (\text{FLOOR}((\Delta(\text{NRfn}) - \Delta(\text{NRfs}))/2))^2$ (NOTE 3) | This value is type of Q-OffsetRange in TS 38.331 [6] which must be even value when its absolute value is larger than dB5. | FR2 AND NOT AbsoluteValue_Within_dB5 |
|  | $dB_{XY} \text{ with } XY = \Delta(\text{NRfn}) - \Delta(\text{NRfs})$                                |   | FR2 AND AbsoluteValue_Within_dB5     |
|  | dB0   |   |                                      |
| interFreqNeighCellList   | Not present   | Not required unless Qoffset configuration is tested.  |                                      |
| interFreqBlackCellList   | Not present   | Not required unless Blacklisted cell list configuration is tested.  |                                      |
| }  |   |   |                                      |
| }  |   |   |                                      |
| lateNonCriticalExtension   | Not present   |   |                                      |
| }  |   |   |                                      |
| <p>NOTE 1: <math>\Delta(\text{NRfn})</math> and <math>\Delta(\text{NRfs})</math> is derived based on calibration procedure defined in the clause 6.1.3.3. NRfn and NRfs are NR frequencies in dl-CarrierFreq[n] and serving cell frequency on which SIB4 is broadcasted.</p> <p>NOTE 2: ROUND is rounded off to the nearest integer. As an example, '1 to 1.49' set to '1' while '1.5 to 2' to '2' and '-2.0 to 1.5' set to '-2' while '-1.49 to -1' set to '-1'.</p> <p>NOTE 3: FLOOR is rounded off to the smaller integer. As an example, '1.0 to 1.99' set to 1, '-1.01 to -2.00' set to -2.</p> |   |   |                                      |

| Condition                | Explanation   |
|--------------------------|---|
| SUL                      | For test cases using SUL frequency for the serving cell, Qrxlevmin is obtained from $q\text{-RxLevMin-sul}$ . |
| QBASED                   | This condition applies to Quality based signalling test cases.  |
| AbsoluteValue_Within_dB5 | $-5\text{dB} \leq (\Delta(\text{NRfn}) - \Delta(\text{NRfs})) \leq 5\text{dB}$ .                              |

### SIB5

SIB5 contains information relevant only for inter-RAT cell re-selection i.e. information about E-UTRA frequencies and E-UTRAs neighbouring cells relevant for cell re-selection. The IE includes cell re-selection parameters common for a frequency.

**Table 4.6.2-4: SIB5**

| Derivation Path: TS 38.331 [6], clause 6.3.1  |   |  |                           |
|---|---|--|---------------------------|
| Information Element   | Value/remark  | Comment  | Condition                 |
| SIB5 ::= SEQUENCE {<br>carrierFreqListEUTRA SEQUENCE (SIZE (1..maxEUTRA-Carrier)) OF CarrierFreqEUTRA { | The same number of entries as the configured E-UTRA carriers. For Signalling test cases, see table 6.3.1.3-1. | $n$ denotes the index of the entry   |                           |
| CarrierFreqEUTRA[n] SEQUENCE {<br>carrierFreq   |   | entry n  |                           |
| carrierFreq   | Downlink E-UTRA ARFCN under test. For Signalling test cases, see table 6.3.1.3-1.                             |  |                           |
| eutra-multiBandInfoList   | Not present   |  |                           |
| eutra-FreqNeighCellList   | Not present   | Not required unless EUTRA Qoffset configuration is tested.                   |                           |
| eutra-BlackCellList   | Not present   | Not required unless Blacklisted cell list configuration is tested.           |                           |
| allowedMeasBandwidth  | EUTRA-AllowedMeasBandwidth  | The value of EUTRA-AllowedMeasBandwidth in Table 4.6.5-1.                    |                           |
| presenceAntennaPort1  | FALSE<br>TRUE   | At least two cell-specific antenna ports are used in all neighbouring cells. | All neighCells with port1 |
| cellReselectionPriority   | 3   |  |                           |
| cellReselectionSubPriority  | Not Present   |  |                           |
| threshX-High  | 2 (4 dB)  |  |                           |
| threshX-Low   | 1 (2 dB)  |  |                           |
| q-RxLevMin  | -70 (-140 dBm)<br>-55(-110dBm)  | For RF/RRM test cases<br>For signalling test cases                           |                           |
| q-QualMin   | -20 (-20dB)   |  |                           |
| p-MaxEUTRA  | 23  |  |                           |
| threshX-Q SEQUENCE {}   | Not present   |  |                           |
| threshX-Q SEQUENCE {<br>threshX-HighQ<br>threshX-LowQ<br>}  | 9 (9dB)<br>9 (9dB)  |  | QBASED                    |
| t-ReselectionEUTRA  | 0   |  |                           |
| t-ReselectionEUTRA-SF   | Not present   | Not required unless speed-dependent cell re-selection is tested.             |                           |
| lateNonCriticalExtension  | Not present   |  |                           |
| }   |   |  |                           |

| Condition                 | Explanation   |
|---------------------------|---|
| QBASED                    | This condition applies to Quality based cell (re)selection signalling test cases. |
| All neighCells with port1 | Used for all neighbouring cells with at least two cell-specific antenna ports     |

— **SIB6**

*SIB6* contains an ETWS primary notification.

**Table 4.6.2-5: SIB6**

| Derivation Path: TS 38.331 [6], clause 6.3.1 |   |   |           |
|--|---|---|-----------|
| Information Element                          | Value/remark  | Comment   | Condition |
| SIB6 ::= SEQUENCE {<br>messagelIdentifier    | '0001 0001 0000 0010'B<br><br>serialNumber  | ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25])<br><br>'0011 0000 0000 0000'B |           |
| warningType                                  | '0000 0101 1000 0000'B  | Note 1.   |           |
| lateNonCriticalExtension                     | Not present   | Note 2.   |           |
| }  |   |   |           |
| Note 1:                                      | Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',<br>Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',<br>Popup (Octet 1 bit 4) set to 'Activate popup',<br>Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25]. |   |           |
| Note 2:                                      | Warning Type Value (Octet 1 bit 7 ~ 1) set to 'Earthquake and Tsunami',<br>Emergency User Alert (Octet 1 bit 0) set to 'Activate emergency user alert',<br>Popup (Octet 2 bit 7) set to 'Activate Popup', see TS 23.041 [25],<br>Padding (Octet 2 bit 6 ~ 0) set to '000 0000'B.          |   |           |

— **SIB7**

*SIB7* contains an ETWS secondary notification.

**Table 4.6.2-6: SIB7 (1<sup>st</sup> Segment)**

| Derivation Path: TS 38.331 [6], clause 6.3.1  |  |   |           |
|---|--|---|-----------|
| Information Element   | Value/remark   | Comment   | Condition |
| SIB7 ::= SEQUENCE {<br>messagelIdentifier   | '0001 0001 0000 0010'B   | ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25]) |           |
| serialNumber  | '0011 0000 0000 0000'B   | Note 1.   |           |
| warningMessageSegmentType   | notLastSegment   |   |           |
| warningMessageSegmentNumber   | 0  |   |           |
| warningMessageSegment   | Octetstring of N   | Where N ≥ 1 and less than 1246. (see TS 23.041 [25])                            |           |
| dataCodingScheme  | Bitstring (8) ID of the alphabet/coding and the applied language | see TS 23.041 [25].   | Segment 1 |
| lateNonCriticalExtension  | Not present  |   |           |
| }   |  |   |           |
| Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',<br>Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',<br>Popup (Octet 1 bit 4) set to 'Activate popup',<br>Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25]. |  |   |           |

| Condition | Explanation   |
|-----------|---|
| Segment1  | The field is mandatory present in the first segment of SIB7, otherwise it is not present. |

**Table 4.6.2-7: SIB7 (2<sup>nd</sup> Segment)**

| Derivation Path: TS 38.331 [6], clause 6.3.1  |                        |   |           |
|---|------------------------|---|-----------|
| Information Element   | Value/remark           | Comment   | Condition |
| SIB7 ::= SEQUENCE {<br>messagelIdentifier   | '0001 0001 0000 0010'B | ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25]) |           |
| serialNumber  | '0011 0000 0000 0000'B | Note 1  |           |
| warningMessageSegmentType   | notLastSegment         |   |           |
| warningMessageSegmentNumber   | 1                      |   |           |
| warningMessageSegment   | Octetstring of N       | Where N ≥ 1 and less than 1246. (see TS 23.041 [25])                            |           |
| dataCodingScheme  | Not present            |   |           |
| lateNonCriticalExtension  | Not present            |   |           |
| }   |                        |   |           |
| Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',<br>Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',<br>Popup (Octet 1 bit 4) set to 'Activate popup',<br>Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25]. |                        |   |           |

**Table 4.6.2-8: SIB7 (3<sup>rd</sup> Segment)**

| Derivation Path: TS 38.331 [6], clause 6.3.1  |                        |   |           |
|---|------------------------|---|-----------|
| Information Element   | Value/remark           | Comment   | Condition |
| SIB7 ::= SEQUENCE {<br>messagelIdentifier   | '0001 0001 0000 0010'B | ETWS message identifier for earthquake and tsunami message (see TS 23.041 [25]) |           |
| serialNumber  | '0011 0000 0000 0000'B | Note 1  |           |
| warningMessageSegmentType   | LastSegment            |   |           |
| warningMessageSegmentNumber   | 2                      |   |           |
| warningMessageSegment   | Octetstring of N       | Where N ≥ 1 and less than 1246. (see TS 23.041 [25])                            |           |
| dataCodingScheme  | Not present            |   |           |
| lateNonCriticalExtension  | Not present            |   |           |
| }   |                        |   |           |
| Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',<br>Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',<br>Popup (Octet 1 bit 4) set to 'Activate popup',<br>Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25]. |                        |   |           |

**SIB8**

SIB8 contains a CMAS notification.

**Table 4.6.2-9: SIB8 (1<sup>st</sup> Segment)**

| Derivation Path: TS 38.331 [6], clause 6.3.1  |  |   |           |
|---|--|---|-----------|
| Information Element   | Value/remark   | Comment   | Condition |
| SIB8 ::= SEQUENCE {<br>messagelIdentifier   | '0001 0001 0001 0010'B   | CMAS CBS Message Identifier for CMAS Presidential Level Alerts (see TS 23.041 [25]) |           |
| serialNumber  | '0011 0000 0000 0000'B   | Note 1  |           |
| warningMessageSegmentType   | notLastSegment   |   |           |
| warningMessageSegmentNumber   | 0  |   |           |
| warningMessageSegment   | Octetstring of N   | Where N ≥ 1 and less than 1246. (see TS 23.041 [25])                                |           |
| dataCodingScheme  | Bitstring (8) ID of the alphabet/coding and the applied language | see TS 23.041 [25]  | Segment 1 |
| warningAreaCoordinatesSegment   | Not present  |   |           |
| lateNonCriticalExtension  | Not present  |   |           |
| }   |  |   |           |
| Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',<br>Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',<br>Popup (Octet 1 bit 4) set to 'Activate popup',<br>Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25]. |  |   |           |

| Condition | Explanation   |
|-----------|---|
| Segment1  | The field is mandatory present in the first segment of SIB8, otherwise it is not present. |

**Table 4.6.2-10: SIB8 (2<sup>nd</sup> Segment)**

| Derivation Path: TS 38.331 [6], clause 6.3.1  |                        |  |           |
|---|------------------------|--|-----------|
| Information Element   | Value/remark           | Comment  | Condition |
| SIB8 ::= SEQUENCE {<br>messagelIdentifier   | '0001 0001 0001 0010'B | CMAS CBS<br>Message Identifier<br>for CMAS<br>Presidential Level<br>Alerts (see TS<br>23.041 [25]) |           |
| serialNumber  | '0011 0000 0000 0000'B | Note 1   |           |
| warningMessageSegmentType   | notLastSegment         |  |           |
| warningMessageSegmentNumber   | 1                      |  |           |
| warningMessageSegment   | Octetstring of N       | Where N ≥ 1 and<br>less than 1246.<br>(see TS 23.041<br>[25])                                      |           |
| dataCodingScheme  | Not present            |  |           |
| warningAreaCoordinatesSegment   | Not present            |  |           |
| lateNonCriticalExtension  | Not present            |  |           |
| }   |                        |  |           |
| Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',<br>Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',<br>Popup (Octet 1 bit 4) set to 'Activate popup',<br>Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25]. |                        |  |           |

**Table 4.6.2-11: SIB8 (3<sup>rd</sup> Segment)**

| Derivation Path: TS 38.331 [6], clause 6.3.1  |                        |  |           |
|---|------------------------|--|-----------|
| Information Element   | Value/remark           | Comment  | Condition |
| SIB8 ::= SEQUENCE {<br>messagelIdentifier   | '0001 0001 0001 0010'B | CMAS CBS<br>Message Identifier<br>for CMAS<br>Presidential Level<br>Alerts (see TS<br>23.041 [25]) |           |
| serialNumber  | '0011 0000 0000 0000'B | Note 1   |           |
| warningMessageSegmentType   | LastSegment            |  |           |
| warningMessageSegmentNumber   | 2                      |  |           |
| warningMessageSegment   | Octetstring of N       | Where N ≥ 1 and<br>less than 1246.<br>(see TS 23.041<br>[25])                                      |           |
| dataCodingScheme  | Not present            |  |           |
| warningAreaCoordinatesSegment   | Not present            |  |           |
| lateNonCriticalExtension  | Not present            |  |           |
| }   |                        |  |           |
| Note 1: Geographical Scope (Octet 1 bit 7 ~ 6) set to 'Cell wide',<br>Emergency User Alert (Octet 1 bit 5) set to 'Activate emergency user alert',<br>Popup (Octet 1 bit 4) set to 'Activate popup',<br>Update Number (Octet 2 bits 3~0) for each update, incremented by one, See TS 23.041 [25]. |                        |  |           |

## SIB9

SIB9 contains information related to GPS time and Coordinated Universal Time (UTC). The UE may use the parameters provided in this system information block to obtain the UTC, the GPS and the local time.

NOTE 1: The UE may use the time information for numerous purposes, possibly involving upper layers e.g. to assist GPS initialisation, to synchronise the UE clock.

*SIB9* also contains accurate reference time information of 5G internal system clock, which is necessary for, e.g., time synchronization in TSC (Time Sensitive Communications) services.

**Table 4.6.2-11A: *SIB9***

| Derivation Path: TS 38.331 [6], clause 6.3.1 |                    |         |           |
|--|--------------------|---------|-----------|
| Information Element                          | Value/remark       | Comment | Condition |
| SIB9 ::= SEQUENCE {                          |                    |         |           |
| timeInfo ::= SEQUENCE {                      |                    |         |           |
| FFS  |                    |         |           |
| }  |                    |         |           |
| lateNonCriticalExtension                     | Not present        |         |           |
| referenceTimelInfo-r16                       | ReferenceTimelInfo |         | TSC       |
| }  |                    |         |           |

| Condition | Explanation  |
|-----------|--|
| TSC       | For test cases requiring TSC (Time Sensitive Communication) functions enabled. |

— *SIB10*

**Table 4.6.2-12: *SIB10***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SIB10-r16 ::= SEQUENCE {                     |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *SIB11*

**Table 4.6.2-13: *SIB11***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SIB11-r16 ::= SEQUENCE {                     |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *SIB12*

**Table 4.6.2-14: *SIB12***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |         |           |
|--|--|---------|-----------|
| Information Element                          | Value/remark                                   | Comment | Condition |
| SIB12-r16 ::= SEQUENCE {                     |  |         |           |
| segmentNumber-r16                            |  |         |           |
| segmentType-r16                              | lastSegment                                    |         |           |
| segmentContainer-r16                         | OCTET STRING<br>(CONTAINING SIB12-<br>IEs-r16) |         |           |
| }  |  |         |           |

**Table 4.6.2-14A: SIB12-IEs-r16**

| Derivation Path: TS 38.331 [6], clause 6.3.2   |                          |         |           |
|--|--------------------------|---------|-----------|
| Information Element  | Value/remark             | Comment | Condition |
| SIB12-IEs-r16 ::= SEQUENCE {   |                          |         |           |
| sl-ConfigCommonNR-r16 SEQUENCE {   |                          |         |           |
| sl-FreqInfoList-r16 SEQUENCE (SIZE (1..maxNrofFreqSL-r16)) OF SL-FreqConfigCommon-r16{         | 1 entry                  |         |           |
| SL-FreqConfigCommon-r16[1]   | SL-FreqConfigCommon-r16  | entry 1 |           |
| }  |                          |         |           |
| sl-UE-SelectedConfig-r16   | SL-UE-SelectedConfig-r16 |         |           |
| sl-NR-AnchorCarrierFreqList-r16  | Not present              |         |           |
| sl-EUTRA-AnchorCarrierFreqList-r16   | Not present              |         |           |
| sl-RadioBearerConfigList-r16 SEQUENCE (SIZE (1..maxNrofSLRB-r16)) OF SL-RadioBearerConfig-r16{ | 1 entry                  |         |           |
| SL-RadioBearerConfig-r16[1]  | SL-RadioBearerConfig-r16 | entry 1 |           |
| }  |                          |         |           |
| sl-RLC-BearerConfigList-r16 SEQUENCE (SIZE (1..maxSL-LCID-r16)) OF SL-RLC-BearerConfig-r16{    | 1 entry                  |         |           |
| SL-RLC-BearerConfig-r16[1]   | SL-RLC-BearerConfig-r16  | entry 1 |           |
| }  |                          |         |           |
| sl-MeasConfigCommon-r16  | SL-MeasConfigCommon-r16  |         |           |
| sl-CSI-Acquisition-r16   | Not present              |         |           |
| sl-OffsetDFN-r16   | Not present              |         |           |
| t400-r16   | ms1000                   |         |           |
| sl-MaxNumConsecutiveDTX-r16  | Not present              |         |           |
| sl-SSB-PriorityNR-r16  | 1                        |         |           |
| }  |                          |         |           |
| lateNonCriticalExtension   | Not present              |         |           |
| }  |                          |         |           |

**SIB13****Table 4.6.2-15: SIB13**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SIB13-r16 ::= SEQUENCE {                     |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

**SIB14****Table 4.6.2-16: SIB14**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SIB14-r16 ::= SEQUENCE {                     |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

#### 4.6.2A Positioning System information blocks

- *PosSystemInformation-r16-IEs*

**Table 4.6.2a-1: PosSystemInformation-r16-IEs**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PosSystemInformation-r16-IEs ::= SEQUENCE {  |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *PosSI-SchedulingInfo*

**Table 4.6.2a-2: PosSI-SchedulingInfo**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PosSI-SchedulingInfo-r16 ::= SEQUENCE {      |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *SIBpos*

**Table 4.6.2a-3: SIBpos**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SIBpos-r16 ::= SEQUENCE {                    |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

#### 4.6.3 Radio resource control information elements

- *AdditionalSpectrumEmission*

**Table 4.6.3-1: AdditionalSpectrumEmission**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| AdditionalSpectrumEmission                   | 0            |         |           |

- *Alpha*

**Table 4.6.3-2: Alpha**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| Alpha  | alpha0       |         |           |

— *AMF-Identifier*

**Table 4.6.3-3: AMF-Identifier**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| AMF-Identifier                               | FFS          |         |           |

— *ARFCN-ValueEUTRA*

**Table 4.6.3-4: ARFCN-ValueEUTRA**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ARFCN-ValueEUTRA                             | FFS          |         |           |

— *ARFCN-ValueNR*

**Table 4.6.3-5: ARFCN-ValueNR**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |  |           |
|--|--|--|-----------|
| Information Element                          | Value/remark   | Comment  | Condition |
| ARFCN-ValueNR                                | absoluteFrequencySSB as defined for the frequency of the cell        | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. | DL_SSB    |
|  | absoluteFrequencyPoint A as defined for the DL frequency of the cell | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. | DL_PointA |
|  | absoluteFrequencyPoint A as defined for the UL frequency of the cell | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. | UL_PointA |

| Condition | Explanation                             |
|-----------|---|
| DL_SSB    | IE absoluteFrequencySSB for downlink    |
| DL_PointA | IE absoluteFrequencyPointA for downlink |
| UL_PointA | IE absoluteFrequencyPointA for uplink   |

— *ARFCN-ValueUTRA-FDD*

**Table 4.6.3-5A: ARFCN-ValueUTRA-FDD**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ARFCN-ValueUTRA-FDD-r16                      | FFS          |         |           |

- *AvailabilityCombinationsPerCell*

**Table 4.6.3-5B: AvailabilityCombinationsPerCell**

| Derivation Path: TS 38.331 [6], clause 6.3.2       |              |         |           |
|--|--------------|---------|-----------|
| Information Element                                | Value/remark | Comment | Condition |
| AvailabilityCombinationsPerCell-r16 ::= SEQUENCE { |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *AvailabilityIndicator*

**Table 4.6.3-5C: AvailabilityIndicator**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| AvailabilityIndicator-r16 ::= SEQUENCE {     |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *BAP-Routing-ID*

**Table 4.6.3-5D: BAP-Routing-ID**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| BAP-Routing-ID-r16 ::= SEQUENCE {            |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *BeamFailureRecoveryConfig*

**Table 4.6.3-6: BeamFailureRecoveryConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2  |   |  |           |
|---|---|--|-----------|
| Information Element   | Value/remark  | Comment  | Condition |
| BeamFailureRecoveryConfig SEQUENCE {  |   |  |           |
| rootSequenceIndex-BFR   | Set according to the PRACH-rootSequenceIndex given in Table 4.4.2-2 |  |           |
| rach-ConfigBFR  | RACH-ConfigGeneric  |  |           |
| rsrp-ThresholdSSB   | 57  | Actual value = 100 dBm   |           |
| candidateBeamRSList SEQUENCE (SIZE(1..maxNrofCandidateBeams)) OF PRACH-ResourceDedicatedBFR { | 1 entry   |  |           |
| PRACH-ResourceDedicatedBFR[1] CHOICE {  |   | entry 1  |           |
| ssb SEQUENCE {  |   |  | SSB       |
| ssb   | SSB-Index for BFR   |  |           |
| ra-PreambleIndex  | 56  |  |           |
| }   |   |  |           |
| }   |   |  |           |
| csi-rs[1] SEQUENCE {  |   |  | CSI-RS    |
| csi-rs  | NZP-CSI-RS-ResourceId for BFR                                       |  |           |
| ra-OccasionList   | Not present   | The RA occasion associated with the SSB that is QCLED with this CSI-RS is used   |           |
| ra-PreambleIndex  | Not present   | The preamble index associated with the SSB that is QCLED with CSI-RS is used   |           |
| }   |   |  |           |
| }   |   |  |           |
| ssb-perRACH-Occasion  | one   |  |           |
| ra-ssb-OccasionMaskIndex  | 0   |  |           |
| recoverySearchSpaceId   | searchSpaceId for BFR search space                                  | The CORESET associated with the BFR search space can not be associated with another search space according to 38.331 [6] |           |
| ra-Prioritization   | RA-Prioritization   |  |           |
| beamFailureRecoveryTimer  | ms200   |  |           |
| msg1-SubcarrierSpacing  | SubcarrierSpacing   |  |           |
| }   |   |  |           |

| Condition | Explanation                                |
|-----------|--|
| SSB       | SSB is used as reference signal for BFR    |
| CSI-RS    | CSI-RS is used as reference signal for BFR |

— *BeamFailureRecoverySCellConfig*

**Table 4.6.3-6AA: BeamFailureRecoverySCellConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2      |              |         |           |
|---|--------------|---------|-----------|
| Information Element                               | Value/remark | Comment | Condition |
| BeamFailureRecoverySCellConfig-r16 ::= SEQUENCE { |              |         |           |
| FFS   |              |         |           |
| }   |              |         |           |

— *BetaOffsets*

**Table 4.6.3-6A: BetaOffsets**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| BetaOffsets ::= SEQUENCE {                   |              |         |           |
| betaOffsetACK-Index1                         | 9            |         |           |
| betaOffsetACK-Index2                         | 9            |         |           |
| betaOffsetACK-Index3                         | 9            |         |           |
| betaOffsetCSI-Part1-Index1                   | 6            |         |           |
| betaOffsetCSI-Part1-Index2                   | 6            |         |           |
| betaOffsetCSI-Part2-Index1                   | 6            |         |           |
| betaOffsetCSI-Part2-Index2                   | 6            |         |           |
| }  |              |         |           |

— *BH-RLC-ChannelConfig*

**Table 4.6.3-6B: BH-RLC-ChannelConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| BH-RLC-ChannelConfig-r16 ::= SEQUENCE {      |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *BH-LogicalChannelIdentity*

**Table 4.6.3-6C: BH-LogicalChannelIdentity**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| BH-LogicalChannelIdentity-r16 ::= CHOICE {   |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *BH-LogicalChannelIdentity-Ext*

**Table 4.6.3-6D: BH-LogicalChannelIdentity-Ext**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| BH-LogicalChannelIdentity-Ext-r16            | FFS          |         |           |

– *BH-RLC-ChannelID***Table 4.6.3-6E: BH-RLC-ChannelID**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| BH-RLC-ChannelID-r16                         | FFS          |         |           |

– *BSR-Config***Table 4.6.3-7: BSR-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| BSR-Config ::= SEQUENCE {                    |              |         |           |
| periodicBSR-Timer                            | sf1          |         |           |
| retxBSR-Timer                                | sf80         |         |           |
| logicalChannelSR-DelayTimer                  | Not present  |         |           |
| }  |              |         |           |

– *BWP***Table 4.6.3-8: BWP**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |         |           |
|--|---|---------|-----------|
| Information Element                          | Value/remark  | Comment | Condition |
| BWP ::= SEQUENCE {                           |   |         |           |
| locationAndBandwidth                         | Set to value of locationAndBandwidth in Table 4.3.1.0D-1 for the bandwidth and subcarrier spacing under test. |         | FR1       |
|  | Set to value of locationAndBandwidth in Table 4.3.1.0D-2 for the bandwidth and subcarrier spacing under test. |         | FR2       |
| subcarrierSpacing                            | SubcarrierSpacing   |         |           |
| cyclicPrefix                                 | Not present   |         |           |
| }  |   |         |           |

– *BWP-Downlink***Table 4.6.3-9: BWP-Downlink**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |         |           |
|--|--|---------|-----------|
| Information Element                          | Value/remark                                 | Comment | Condition |
| BWP-Downlink ::= SEQUENCE {                  |  |         |           |
| bwp-Id                                       | BWP-Id with condition BWP-Id1                |         |           |
| bwp-Common                                   | BWP-DownlinkCommon with condition InitialBWP |         |           |
| bwp-Dedicated                                | BWP-DownlinkDedicated                        |         |           |
| }  |  |         |           |

— *BWP-DownlinkCommon*

**Table 4.6.3-10: *BWP-DownlinkCommon***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |         |            |
|--|--|---------|------------|
| Information Element                          | Value/remark                                 | Comment | Condition  |
| BWP-DownlinkCommon ::= SEQUENCE {            |  |         |            |
| genericParameters                            | BWP  |         |            |
| pdcch-ConfigCommon CHOICE {                  |  |         |            |
| setup  | PDCCH-ConfigCommon                           |         |            |
|  | PDCCH-ConfigCommon with condition SCell_add  |         | SCell_Add  |
|  | PDCCH-ConfigCommon with condition InitialBWP |         | InitialBWP |
| }  |  |         |            |
| pdsch-ConfigCommon CHOICE {                  |  |         |            |
| setup  | PDSCH-ConfigCommon                           |         |            |
| }  |  |         |            |
| }  |  |         |            |

— *BWP-DownlinkDedicated*

**Table 4.6.3-11: *BWP-DownlinkDedicated***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| BWP-DownlinkDedicated ::= SEQUENCE {         |              |         |           |
| pdcch-Config CHOICE {                        |              |         |           |
| setup  | PDCCH-Config |         |           |
| }  |              |         |           |
| pdsch-Config CHOICE {                        |              |         |           |
| setu   | PDSCH-Config |         |           |
| }  |              |         |           |
| sps-Config                                   | Not present  |         |           |
| radioLinkMonitoringConfig                    | Not present  |         |           |
| sps-ConfigToAddModList-r16                   | Not present  |         |           |
| sps-ConfigToReleaseList-r16                  | Not present  |         |           |
| sps-ConfigDeactivationStateList-r16          | Not present  |         |           |
| beamFailureRecoverySCellConfig-r16           | Not present  |         |           |
| sl-PDCCH-Config-r16                          | Not present  |         |           |
| sl-PDCCH-Config-r16 CHOICE {                 |              |         | SIDELINK  |
| setup  | PDCCH-Config |         |           |
| }  |              |         |           |
| sl-V2X-PDCCH-Config-r16                      | Not present  |         |           |
| }  |              |         |           |

| Condition | Explanation                     |
|-----------|---------------------------------|
| SIDELINK  | Used for sidelink communication |

— *BWP-Id*

**Table 4.6.3-12: *BWP-Id***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |             |           |
|--|--------------|-------------|-----------|
| Information Element                          | Value/remark | Comment     | Condition |
| BWP-Id                                       | 0            | Initial BWP |           |
|  | 1            |             | BWP-Id1   |

| Condition | Explanation      |
|-----------|------------------|
| BWP-Id1   | Additional BWP 1 |

— *BWP-Uplink*

**Table 4.6.3-13: *BWP-Uplink***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                                  |         |           |
|--|----------------------------------|---------|-----------|
| Information Element                          | Value/remark                     | Comment | Condition |
| BWP-Uplink ::= SEQUENCE {                    |                                  |         |           |
| bwp-Id                                       | BWP-Id with condition<br>BWP-Id1 |         |           |
| bwp-Common                                   | BWP-UplinkCommon                 |         |           |
| bwp-Dedicated                                | BWP-UplinkDedicated              |         |           |
| }  |                                  |         |           |

— *BWP-UplinkCommon*

**Table 4.6.3-14: *BWP-UplinkCommon***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                    |         |                               |
|--|--------------------|---------|-------------------------------|
| Information Element                          | Value/remark       | Comment | Condition                     |
| BWP-UplinkCommon ::= SEQUENCE {              |                    |         |                               |
| genericParameters                            | BWP                |         |                               |
| rach-ConfigCommon CHOICE {                   |                    |         |                               |
| setup  | RACH-ConfigCommon  |         |                               |
| }  |                    |         |                               |
| rach-ConfigCommon                            | Not present        |         | SUL_SUL<br>AND (RF<br>OR RRM) |
| pusch-ConfigCommon CHOICE {                  |                    |         |                               |
| setup  | PUSCH-ConfigCommon |         |                               |
| }  |                    |         |                               |
| pucch-ConfigCommon CHOICE {                  |                    |         |                               |
| setup  | PUCCH-ConfigCommon |         |                               |
| }  |                    |         |                               |
| }  |                    |         |                               |

| Condition | Explanation   |
|-----------|---|
| SUL_SUL   | On the SUL carrier when supplementary carrier is configured |

– *BWP-UplinkDedicated*

**Table 4.6.3-15: *BWP-UplinkDedicated***

| Derivation Path: TS 38.331 [6], clause 6.3.2        |              |         |           |
|---|--------------|---------|-----------|
| Information Element                                 | Value/remark | Comment | Condition |
| BWP-UplinkDedicated ::= SEQUENCE {                  |              |         |           |
| pucch-Config CHOICE {                               |              |         |           |
| setup   | PUCCH-Config |         |           |
| }   |              |         |           |
| pucch-Config  | Not present  |         | SUL_NUL   |
| pusch-Config  | Not present  |         | RESUME    |
| pusch-Config CHOICE {                               |              |         |           |
| setup   | PUSCH-Config |         |           |
| }   |              |         |           |
| configuredGrantConfig                               | Not present  |         |           |
| srs-Config  | Not present  |         | Short_DCI |
| SRS-Config  |              |         |           |
| beamFailureRecoveryConfig                           | Not present  |         |           |
| sl-PUCCH-Config-r16                                 | Not present  |         |           |
| sl-PUCCH-Config-r16 CHOICE {                        |              |         | SIDELINK  |
| setup   | PUCCH-Config |         |           |
| }   |              |         |           |
| cp-ExtensionC2-r16                                  | Not present  |         |           |
| cp-ExtensionC3-r16                                  | Not present  |         |           |
| useInterlacePUCCH-PUSCH-r16                         | Not present  |         |           |
| pucch-ConfigurationList-r16                         | Not present  |         |           |
| lbt-FailureRecoveryConfig-r16                       | Not present  |         |           |
| configuredGrantConfigToAddModList-r16               | Not present  |         |           |
| configuredGrantConfigToReleaseList-r16              | Not present  |         |           |
| configuredGrantConfigType2DeactivationStateList-r16 | Not present  |         |           |
| }   |              |         |           |

| Condition | Explanation   |
|-----------|---|
| Short_DCI | Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS |
| SUL_NUL   | On the NUL carrier when supplementary carrier is configured     |
| RESUME    | Used in RRResume Message  |
| SIDELINK  | Used for sidelink communication                                 |

– *CellAccessRelatedInfo*

**Table 4.6.3-16: *CellAccessRelatedInfo***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                       |         |           |
|--|-----------------------|---------|-----------|
| Information Element                          | Value/remark          | Comment | Condition |
| CellAccessRelatedInfo ::= SEQUENCE {         |                       |         |           |
| plmn-IdentityList                            | PLMN-IdentityInfoList |         |           |
| cellReservedForOtherUse                      | Not present           |         |           |
| }  |                       |         |           |

— *CellAccessRelatedInfo-EUTRA-5GC*

**Table 4.6.3-17: *CellAccessRelatedInfo-EUTRA-5GC***

| Derivation Path: TS 38.331 [6], clause 6.3.2   |              |         |           |
|--|--------------|---------|-----------|
| Information Element                            | Value/remark | Comment | Condition |
| CellAccessRelatedInfo-EUTRA-5GC ::= SEQUENCE { |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *CellAccessRelatedInfo-EUTRA-EPC*

**Table 4.6.3-18: *CellAccessRelatedInfo-EUTRA-EPC***

| Derivation Path: TS 38.331 [6], clause 6.3.2   |              |         |           |
|--|--------------|---------|-----------|
| Information Element                            | Value/remark | Comment | Condition |
| CellAccessRelatedInfo-EUTRA-EPC ::= SEQUENCE { |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *CellGroupConfig*

**Table 4.6.3-19: CellGroupConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2                            |  |   |                 |
|---|--|---|-----------------|
| Information Element   | Value/remark   | Comment   | Condition       |
| CellGroupConfig ::= SEQUENCE {  |  |   |                 |
| cellGroupId   | CellGroupId  |   |                 |
| CellGroupId condition NR-DC_SCG   |  |   | NR-DC_SCG       |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 1 entry  |   | EN-DC           |
| RLC-BearerConfig[1]   | RLC-BearerConfig with conditions AM and DRB2                   | entry 1   |                 |
| RLC-BearerConfig with conditions AM and DRB2 and Re-establish_RLC       |  |   | PSCell_change   |
| }   |  |   |                 |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 1 entry  |   | SRB1            |
| RLC-BearerConfig[1]   | RLC-BearerConfig with condition SRB1                           | entry 1   |                 |
| }   |  |   |                 |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 2 entries  |   | SRB2_DRB 1      |
| RLC-BearerConfig[1]   | RLC-BearerConfig with condition SRB2                           | entry 1   |                 |
| RLC-BearerConfig[2]   | RLC-BearerConfig with conditions AM and DRB1                   | entry 2   |                 |
| }   |  |   |                 |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 2 entries  |   | SRB2_DRB 2      |
| RLC-BearerConfig[1]   | RLC-BearerConfig with condition SRB2                           | entry 1   |                 |
| RLC-BearerConfig[2]   | RLC-BearerConfig with conditions AM and DRB2                   | entry 2   |                 |
| }   |  |   |                 |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 1 entry  |   | DRBn, NR-DC_SCG |
| RLC-BearerConfig[1]   | RLC-BearerConfig with conditions AM and DRBn                   | entry 1<br>DRBn is allocated according to internal TTCN mapping |                 |
| }   |  |   |                 |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 3 entries  |   | PCell_change    |
| RLC-BearerConfig[1]   | RLC-BearerConfig with conditions SRB1 and Re-establish_RLC     | entry 1   |                 |
| RLC-BearerConfig[2]   | RLC-BearerConfig with conditions SRB2 and Re-establish_RLC     | entry 2   |                 |
| RLC-BearerConfig[3]   | RLC-BearerConfig with conditions AM, DRB1 and Re-establish_RLC | entry 3   |                 |
| }   |  |   |                 |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 1+n entries  | n is the number of DRBs established before RRC resume           | RESUME          |
| RLC-BearerConfig[1]   | RLC-BearerConfig with condition SRB2 and RESUME                | entry 1   |                 |
| RLC-BearerConfig[k+1, k=1..n]   | RLC-BearerConfig with condition DRBk and RESUME                | entry [k+1, k=1..n]   |                 |

|  |   |  |   |
|--|---|--|---|
| }  |   |  |   |
| rlc-BearerToAddModList SEQUENCE<br>(SIZE(1..maxLCH)) OF RLC-BearerConfig { | 1+n entries   | n is the number of DRBs established before RRC re-establishement | REEST   |
| RLC-BearerConfig[1]  | RLC-BearerConfig with condition SRB2 and Re-establish_RLC | entry 1  |   |
| RLC-BearerConfig[k+1, k=1..n]  | RLC-BearerConfig with condition DRBk and Re-establish_RLC | entry [k+1, k=1..n]  |   |
| }  |   |  |   |
| rlc-BearerToAddModList   | Not present   |  |   |
| rlc-BearerToReleaseList  | Not present   |  |   |
| mac-CellGroupConfig  | MAC-CellGroupConfig                                       |  |   |
|  | Not present   |  | SRB2_DRB 1, MEAS, SRB2_DRB 2, SCell_add       |
| physicalCellGroupConfig  | PhysicalCellGroupConfig                                   |  |   |
|  | Not present   |  | SRB2_DRB 1, MEAS, SRB2_DRB 2, SCell_add       |
| spCellConfig   | Not present   |  | SRB2_DRB 1, SRB2_DRB 2, SCell_add             |
| spCellConfig SEQUENCE {  |   |  |   |
| servCellIndex  | Not present   |  |   |
|  | ServCellIndex   |  | EN-DC, EN-DC AND MEAS                         |
|  | ServCellIndex with condition NR-DC_SCG                    |  | NR-DC_SCG                                     |
| reconfigurationWithSync  | Not present   |  |   |
| reconfigurationWithSync SEQUENCE {   |   |  | EN-DC, PCell_change, PSCell_change, NR-DC_SCG |
| spCellConfigCommon   | ServingCellConfigCommon                                   |  |   |
| newUE-Identity   | RNTI-Value  |  |   |
|  | RNTI-Value with condition NR-DC_SCG                       |  | NR-DC_SCG                                     |
| t304   | ms1000  |  |   |
| rach-ConfigDedicated   | Not present   |  |   |
| rach-ConfigDedicated CHOICE {  |   |  | CFRA  |
| uplink   | RACH-ConfigDedicated                                      |  |   |
| supplementaryUplink  | RACH-ConfigDedicated                                      |  | SUL AND SIG                                   |
| }  |   |  |   |
| }  |   |  |   |
| rlf-TimersAndConstants CHOICE {  |   |  |   |
| setup  | RLF-TimersAndConstants                                    |  |   |
| }  |   |  |   |
| rlf-TimersAndConstants   | Not present   |  | MEAS, RESUME                                  |
| rImInSyncOutOfSyncThreshold  | Not present   |  |   |
| spCellConfigDedicated  | ServingCellConfig   |  | EN-DC, SRB1,                                  |

|  |  |         |   |
|--|--|---------|---|
|  |  |         | PCell_change,<br>PSCell_change, NR-DC_SCG,<br>REEST |
|  | Not present                                      |         |   |
|  | ServingCellConfig with<br>condition MEAS         |         | MEAS  |
|  | ServingCellConfig with<br>condition RESUME       |         | RESUME  |
| }  |  |         |   |
| sCellToAddModList  | Not present                                      |         |   |
| sCellToAddModList SEQUENCE (SIZE<br>(1..maxNrofSCells)) OF SCellConfig { | 1 entry  |         | SCell_add   |
| SCellConfig[1] SEQUENCE {  |  | entry 1 |   |
| sCellIndex   | SCellIndex                                       |         |   |
| sCellConfigCommon  | ServingCellConfigComm<br>on with condition No_UL |         |   |
| sCellConfigDedicated   | ServingCellConfig with<br>condition No_UL        |         |   |
| }  |  |         |   |
| }  |  |         |   |
| sCellToReleaseList   | Not present                                      |         |   |
| reportUplinkTxDirectCurrent  | Not present                                      |         |   |
| bap-Address-r16  | Not present                                      |         |   |
| bh-RLC-ChannelToAddModList-r16   | Not present                                      |         |   |
| bh-RLC-ChannelToReleaseList-r16  | Not present                                      |         |   |
| f1c-TransferPath-r16   | Not present                                      |         |   |
| simultaneousTCI-UpdateList1-r16  | Not present                                      |         |   |
| simultaneousTCI-UpdateList2-r16  | Not present                                      |         |   |
| simultaneousSpatial-UpdatedList1-r16                                     | Not present                                      |         |   |
| simultaneousSpatial-UpdatedList2-r16                                     | Not present                                      |         |   |
| uplinkTxSwitchingOption-r16  | Not present                                      |         |   |
| uplinkTxSwitchingPowerBoosting-r16                                       | Not present                                      |         |   |
| }  |  |         |   |

| Condition     | Explanation   |
|---------------|---|
| EN-DC         | E-UTRA-NR Dual Connectivity   |
| CFRA          | This condition applies when CFRA is configured  |
| SUL           | Supplementary Uplink  |
| SRB1          | Establishment of SRB1   |
| SRB2_DRB1     | Establishment of SRB2 and DRB1  |
| SRB2_DRB2     | Establishment of SRB2 and DRB2  |
| DRBn          | Establishment of DRBn   |
| PCell_change  | Intra-NR PCell change (standalone NR)   |
| PSCell_change | NR PSCell change (EN-DC)  |
| SCell_add     | Add SCell   |
| MEAS          | A NR or EN-DC measurement is configured   |
| NR-DC_SCG     | Add SCG (NR-DC)   |
| RESUME        | Used in RRCResume Message   |
| REEST         | The first RRCCoreConfiguration message after successful completion of the RRC re-establishment procedure. |

– *CellGroupId*

**Table 4.6.3-20: CellGroupId**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |                  |
|--|--------------|---------|------------------|
| Information Element                          | Value/remark | Comment | Condition        |
| CellGroupId                                  | 0            |         |                  |
|  | 1            |         | EN-DC, NR-DC_SCG |

| Condition | Explanation                 |
|-----------|-----------------------------|
| EN-DC     | E-UTRA-NR Dual Connectivity |
| NR-DC_SCG | Add SCG (NR-DC)             |

– *CellIdentity*

**Table 4.6.3-21: CellIdentity**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |                        |           |
|--|--|------------------------|-----------|
| Information Element                          | Value/remark                                       | Comment                | Condition |
| CellIdentity                                 | Set to NR Cell Identifier defined in table 4.4.2-2 | BIT STRING (SIZE (36)) |           |

– *CellReselectionPriority*

**Table 4.6.3-22: CellReselectionPriority**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CellReselectionPriority                      | FFS          |         |           |

– *CellReselectionSubPriority*

**Table 4.6.3-23: CellReselectionSubPriority**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CellReselectionSubPriority                   | FFS          |         |           |

– *CGI-InfoEUTRA*

**Table 4.6.3-23A: CGI-InfoEUTRA**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CGI-InfoEUTRA                                | FFS          |         |           |

– *CGI-InfoEUTRALogging*

**Table 4.6.3-23B: CGI-InfoEUTRALogging**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CGI-InfoEUTRALogging ::= SEQUENCE {          |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *CGI-InfoNR*

**Table 4.6.3-24: CGI-InfNRo**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CGI-InfoNR                                   | FFS          |         |           |

– *CGI-Info-Logging*

**Table 4.6.3-24A: CGI-Info-Logging**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CGI-Info-Logging-r16 ::= SEQUENCE {          |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *CLI-RSSI-Range*

**Table 4.6.3-24B: CLI-RSSI-Range**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CLI-RSSI-Range-r16                           | FFS          |         |           |

— *CodebookConfig*

**Table 4.6.3-25: *CodebookConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                   |         |           |
|--|-------------------|---------|-----------|
| Information Element                          | Value/remark      | Comment | Condition |
| CodebookConfig ::= SEQUENCE {                |                   |         |           |
| codebookType CHOICE {                        |                   |         |           |
| type1 SEQUENCE {                             |                   |         |           |
| subType CHOICE {                             |                   |         |           |
| type1-SinglePanel SEQUENCE {                 |                   |         |           |
| nrOfAntennaPorts CHOICE {                    |                   |         |           |
| moreThanTwo SEQUENCE {                       |                   |         |           |
| n1-n2 CHOICE {                               |                   |         |           |
| two-one-Type1-SinglePanel-Restriction        | 11111111          |         | FR2       |
| four-one-Type1-SinglePanel-Restriction       | 11111111 11111111 |         | FR1       |
| }  |                   |         |           |
| type1-SinglePanel-                           | Not present       |         |           |
| codebookSubsetRestriction-i2                 |                   |         |           |
| }  |                   |         |           |
| }  |                   |         |           |
| type1-SinglePanel-ri-Restriction             | 11111111          |         |           |
| }  |                   |         |           |
| }  |                   |         |           |
| codebookMode                                 | 1                 |         |           |
| }  |                   |         |           |
| }  |                   |         |           |
| }  |                   |         |           |

— *CommonLocationInfo*

**Table 4.6.3-25A: *CommonLocationInfo***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CommonLocationInfo-r16 ::= SEQUENCE {        |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *CondRecConfigId*

**Table 4.6.3-25B: *CondRecConfigId***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CondRecConfigId-r16                          | FFS          |         |           |

– *CondReconfigToAddModList*

**Table 4.6.3-25C: CondReconfigToAddModList**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |                                      |           |
|--|---|--------------------------------------|-----------|
| Information Element                          | Value/remark                              | Comment                              | Condition |
| CondReconfigToAddModList-r16 ::= SEQUENCE {  |   |                                      |           |
| condReconfigId-r16                           |   |                                      |           |
| condExecutionCond-r16 ::= SEQUENCE {         |   |                                      |           |
| MeasId [1]                                   | 1   | identify a measurement configuration |           |
| }  |   |                                      |           |
| condRRCReconfig-r16                          | RRCReconfiguration with condition NR_MEAS |                                      |           |
| }  |   |                                      |           |

– *ConditionalReconfiguration*

**Table 4.6.3-25D: ConditionalReconfiguration**

| Derivation Path: TS 38.331 [6], clause 6.3.2  |                              |         |           |
|---|------------------------------|---------|-----------|
| Information Element                           | Value/remark                 | Comment | Condition |
| ConditionalReconfiguration-r16 ::= SEQUENCE { |                              |         |           |
| attemptCondReconfig-r16                       |                              |         |           |
| condReconfigToRemoveList-r16                  | CondReconfigToRemoveList-r16 |         |           |
| condReconfigToRemoveList-r16                  | CondReconfigToAddModList-r16 |         |           |
| }   |                              |         |           |

– *ConfiguredGrantConfig*

**Table 4.6.3-26: ConfiguredGrantConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ConfiguredGrantConfig ::= SEQUENCE {         |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *ConfiguredGrantConfigIndex*

**Table 4.6.3-26A: ConfiguredGrantConfigIndex**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ConfiguredGrantConfigIndex-r16               | FFS          |         |           |

– *ConfiguredGrantConfigIndexMAC*

**Table 4.6.3-26B: ConfiguredGrantConfigIndexMAC**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ConfiguredGrantConfigIndexMAC-r16            | FFS          |         |           |

— *ConnEstFailureControl*

**Table 4.6.3-27: ConnEstFailureControl**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ConnEstFailureControl ::= SEQUENCE {         |              |         |           |
| connEstFailCount                             | n1           |         |           |
| connEstFailOffsetValidity                    | s30          |         |           |
| connEstFailOffset                            | 1            |         |           |
| }  |              |         |           |

— *ControlResourceSet*

**Table 4.6.3-28: ControlResourceSet**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |  |           |
|--|--|--|-----------|
| Information Element                          | Value/remark   | Comment  | Condition |
| ControlResourceSet ::= SEQUENCE {            |  |  |           |
| controlResourceSetId                         | ControlResourceSetId                                     |  |           |
| frequencyDomainResources                     | 11110000 00000000<br>00000000 00000000<br>00000000 00000 | CORESET to use the least significant 24 RBs of the BWP |           |
| duration                                     | 2  | SearchSpace duration of 2 symbols                      |           |
| cce-REG-MappingType CHOICE {                 |  |  |           |
| nonInterleaved                               | null   |  |           |
| }  |  |  |           |
| precoderGranularity                          | sameAsREG-bundle   |  |           |
| tci-StatesPDCCH-ToAddList                    | Not present  |  |           |
| tci-StatesPDCCH-ToReleaseList                | Not present  |  |           |
| tci-PresentInDCI                             | Not present  |  |           |
| pdcch-DMRS-ScramblingID                      | Not present  |  |           |
| }  |  |  |           |

— *ControlResourceSetId*

**Table 4.6.3-29: ControlResourceSetId**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ControlResourceSetId                         | 1            |         |           |
|  | 0            |         | Common0   |

| Condition | Explanation     |
|-----------|-----------------|
| Common0   | CommonCORESET#0 |

– *ControlResourceSetZero*

**Table 4.6.3-30: ControlResourceSetZero**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |   |           |
|--|--|---|-----------|
| Information Element                          | Value/remark   | Comment   | Condition |
| ControlResourceSetZero                       | Set to CORESET#0<br>Index as defined for the frequency of the cell | For signalling test cases see subclause 6.2.3.<br>Otherwise, see subclause 4.3.1. |           |

– *CrossCarrierSchedulingConfig*

**Table 4.6.3-31: CrossCarrierSchedulingConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CrossCarrierSchedulingConfig ::= SEQUENCE {  |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *CSI-AperiodicTriggerStateList*

**Table 4.6.3-32: CSI-AperiodicTriggerStateList**

| Derivation Path: TS 38.331 [6], clause 6.3.2  |                    |         |           |
|---|--------------------|---------|-----------|
| Information Element   | Value/remark       | Comment | Condition |
| CSI-AperiodicTriggerStateList ::= SEQUENCE (SIZE (1..maxNrOfCSI-AperiodicTriggers)) OF CSI-AperiodicTriggerState {            | 1 entry            |         |           |
| CSI-AperiodicTriggerState[1] SEQUENCE {   |                    | entry 1 |           |
| associatedReportConfigInfoList SEQUENCE (SIZE(1..maxNrofReportConfigPerAperiodicTrigger)) OF CSI-AssociatedReportConfigInfo { | 1 entry            |         |           |
| CSI-AssociatedReportConfigInfo[1] SEQUENCE {  |                    | entry 1 |           |
| reportConfigId  | CSI-ReportConfigId |         |           |
| resourcesForChannel CHOICE {  |                    |         |           |
| nzp-CSI-RS SEQUENCE {   |                    |         |           |
| resourceSet   | 8                  |         | FR1       |
| 16  |                    |         | FR2       |
| qcl-info SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF TCI-Stateld {  | 1 entry            |         |           |
| TCI-Stateld[1]  | TCI-Stateld        | entry 1 |           |
| }   |                    |         |           |
| }   |                    |         |           |
| }   |                    |         |           |
| csi-IM-ResourcesforInterference   | 8                  |         | FR1       |
| 16  |                    |         | FR2       |
| nzp-CSI-RS-ResourcesforInterference   | 8                  |         | FR1       |
| 16  |                    |         | FR2       |
| }   |                    |         |           |
| }   |                    |         |           |
| }   |                    |         |           |
| }   |                    |         |           |

– *CSI-FrequencyOccupation*

**Table 4.6.3-33: CSI-FrequencyOccupation**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |  |           |
|--|--|--|-----------|
| Information Element                          | Value/remark   | Comment  | Condition |
| CSI-FrequencyOccupation ::= SEQUENCE {       |  |  |           |
| startingRB                                   | 0  |  |           |
| nrofRBs                                      | 160<br>216<br>108<br>52<br>276<br>64<br>52<br>40<br>32<br>28<br>24<br>64 | FR1_60MHz<br>FR1_80MHz<br>FR1_40MHz<br>FR1_10MHz<br>FR1_100MHz<br>FR2_100MHz<br>TRS<br>TRS AND ((FR1_15MHz AND FR1_SCS30kHz) OR (FR1_30MHz AND FR1_SCS60kHz))<br>TRS AND ((FR1_25MHz AND FR1_SCS60kHz) OR (FR2_50MHz AND FR2_SCS120kHz))<br>TRS AND FR1_5MHz AND FR1_SCS15kHz<br>TRS AND ((FR1_5MHz AND FR1_SCS30kHz) OR (FR1_10MHz AND FR1_SCS30kHz) OR (FR1_10MHz AND FR1_SCS60kHz) OR (FR1_15MHz AND FR1_SCS60kHz) OR (FR1_20MHz AND FR1_SCS60kHz)) |           |
| }  |  |  |           |

| Condition     | Explanation                                       |
|---------------|---|
| FR1_40MHz     | FR1 is used under the test. CBW is set to 40MHz.  |
| FR1_60MHz     | FR1 is used under the test. CBW is set to 60MHz.  |
| FR1_80MHz     | FR1 is used under the test. CBW is set to 80MHz.  |
| FR1_100MHz    | FR1 is used under the test. CBW is set to 100MHz. |
| FR2_100MHz    | FR2 is used under the test. CBW is set to 100MHz. |
| TRS           | Tracking-Reference Signal                         |
| FR1_SCS15kHz  | FR1 is used under the test. SCS is set to 15kHz.  |
| FR1_SCS30kHz  | FR1 is used under the test. SCS is set to 30kHz.  |
| FR1_SCS60kHz  | FR1 is used under the test. SCS is set to 60kHz.  |
| FR2_SCS120kHz | FR2 is used under the test. SCS is set to 120kHz. |
| FR1_5MHz      | FR1 is used under the test. CBW is set to 5MHz.   |
| FR1_10MHz     | FR1 is used under the test. CBW is set to 10MHz.  |
| FR1_15MHz     | FR1 is used under the test. CBW is set to 15MHz.  |
| FR1_20MHz     | FR1 is used under the test. CBW is set to 20MHz.  |
| FR1_25MHz     | FR1 is used under the test. CBW is set to 25MHz.  |
| FR1_30MHz     | FR1 is used under the test. CBW is set to 30MHz.  |
| FR2_50MHz     | FR2 is used under the test. CBW is set to 50MHz.  |

### — CSI-IM-Resource

**Table 4.6.3-34: CSI-IM-Resource**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                         |         |           |
|--|-------------------------|---------|-----------|
| Information Element                          | Value/remark            | Comment | Condition |
| CSI-IM-Resource ::= SEQUENCE {               |                         |         |           |
| csi-IM-Resourceld                            | CSI-IM-Resourceld       |         |           |
| csi-IM-ResourceElementPattern CHOICE {       |                         |         |           |
| pattern1 SEQUENCE {                          |                         |         |           |
| subcarrierLocation-p1                        | s4                      |         |           |
| symbolLocation-p1                            | 3                       |         | FR1       |
|  | 4                       |         | FR2       |
| }  |                         |         |           |
| }  |                         |         |           |
| freqBand                                     | CSI-FrequencyOccupation |         |           |
| periodicityAndOffset                         | Not present             |         |           |
| }  |                         |         |           |

### — CSI-IM-Resourceld

**Table 4.6.3-35: CSI-IM-Resourceld**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CSI-IM-Resourceld                            | 7            |         | FR1       |
|  | 31           |         | FR2       |

— *CSI-IM-ResourceSet*

**Table 4.6.3-36: *CSI-IM-ResourceSet***

| Derivation Path: TS 38.331 [6], clause 6.3.2   |                      |         |           |
|--|----------------------|---------|-----------|
| Information Element  | Value/remark         | Comment | Condition |
| CSI-IM-ResourceSet ::= SEQUENCE {  |                      |         |           |
| csi-IM-ResourceSetId   | CSI-IM-ResourceSetId |         |           |
| csi-IM-Resources SEQUENCE<br>(SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) OF CSI-<br>IM-Resourceld { | 1 entry              |         |           |
| CSI-IM-Resourceld[1]   | CSI-IM-Resourceld    | entry 1 |           |
| }  |                      |         |           |
| }  |                      |         |           |

— *CSI-IM-ResourceSetId*

**Table 4.6.3-37: *CSI-IM-ResourceSetId***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CSI-IM-ResourceSetId                         | 0            |         |           |

— *CSI-MeasConfig*

**Table 4.6.3-38: *CSI-MeasConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.2  |                               |         |           |
|---|-------------------------------|---------|-----------|
| Information Element   | Value/remark                  | Comment | Condition |
| CSI-MeasConfig ::= SEQUENCE {   |                               |         |           |
| nzp-CSI-RS-ResourceToAddModList SEQUENCE<br>(SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {            | 1 entry                       |         |           |
| NZP-CSI-RS-Resource[1]  | NZP-CSI-RS-Resource           | entry 1 |           |
| }   |                               |         |           |
| nzp-CSI-RS-ResourceToReleaseList  | Not present                   |         |           |
| nzp-CSI-RS-ResourceSetToAddModList<br>SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSetId { | 1 entry                       |         |           |
| NZP-CSI-RS-ResourceSet[1]   | NZP-CSI-RS-ResourceSet        | entry 1 |           |
| }   |                               |         |           |
| nzp-CSI-RS-ResourceSetToReleaseList   | Not present                   |         |           |
| csi-IM-ResourceToAddModList SEQUENCE (SIZE<br>(1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {                        | 1 entry                       |         |           |
| CSI-IM-Resource[1]  | CSI-IM-Resource               | entry 1 |           |
| }   |                               |         |           |
| csi-IM-ResourceToReleaseList  | Not present                   |         |           |
| csi-IM-ResourceSetToAddModList SEQUENCE<br>(SIZE (1..maxNrofCSI-SSB-ResourceSets)) OF CSI-SSB-ResourceSet {             | 1 entry                       |         |           |
| CSI-IM-ResourceSet[1]   | CSI-IM-ResourceSet            | entry 1 |           |
| }   |                               |         |           |
| csi-IM-ResourceSetToReleaseList   | Not present                   |         |           |
| csi-SSB-ResourceSetToAddModList SEQUENCE<br>(SIZE (1..maxNrofCSI-SSB-ResourceSets)) OF CSI-SSB-ResourceSet {            | 1 entry                       |         |           |
| CSI-SSB-ResourceSet[1]  | CSI-SSB-ResourceSet           | entry 1 |           |
| }   |                               |         |           |
| csi-SSB-ResourceSetToReleaseList  | Not present                   |         |           |
| csi-ResourceConfigToAddModList SEQUENCE<br>(SIZE (1..maxNrofCSI-ResourceConfigurations)) OF<br>CSI-ResourceConfig {     | 1 entry                       |         |           |
| CSI-ResourceConfig[1]   | CSI-ResourceConfig            | entry 1 |           |
| }   |                               |         |           |
| csi-ResourceConfigToReleaseList   | Not present                   |         |           |
| csi-ReportConfigToAddModList SEQUENCE (SIZE<br>(1..maxNrofCSI-ReportConfigurations)) OF CSI-ReportConfig {              | 1 entry                       |         |           |
| CSI-ReportConfig[1]   | CSI-ReportConfig              | entry 1 |           |
| }   |                               |         |           |
| csi-ReportConfigToReleaseList   | Not present                   |         |           |
| reportTriggerSize   | 0                             |         |           |
| aperiodicTriggerStateList CHOICE {  |                               |         |           |
| setup   | CSI-AperiodicTriggerStateList |         |           |
| }   |                               |         |           |
| semiPersistentOnPUSCH-TriggerStateList  | Not present                   |         |           |
| }   |                               |         |           |

— *CSI-ReportConfig*

**Table 4.6.3-39: *CSI-ReportConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                      |         |           |
|--|----------------------|---------|-----------|
| Information Element                          | Value/remark         | Comment | Condition |
| CSI-ReportConfig ::= SEQUENCE {              |                      |         |           |
| reportConfigId                               | CSI-ReportConfigId   |         |           |
| carrier                                      | ServCellIndex        |         |           |
| resourcesForChannelMeasurement               | CSI-ResourceConfigId |         |           |
| csi-IM-ResourcesForInterference              | CSI-ResourceConfigId |         |           |
| nzp-CSI-RS-ResourcesForInterference          | CSI-ResourceConfigId |         |           |
| reportConfigType CHOICE {                    |                      |         |           |
| aperiodic SEQUENCE {                         |                      |         |           |
| reportSlotOffsetList                         | 14                   |         |           |
| }  |                      |         |           |
| }  |                      |         |           |
| reportQuantity CHOICE {                      |                      |         |           |
| cri-RI-PMI-CQI                               | NULL,                |         | FR1       |
| cri-RI-LI-PMI-CQI                            | NULL                 |         | FR2       |
| }  |                      |         |           |
| reportFreqConfiguration SEQUENCE {           |                      |         |           |
| cqi-FormatIndicator                          | widebandCQI          |         |           |
| pmi-FormatIndicator                          | widebandPMI          |         |           |
| csi-ReportingBand                            | Not present          |         |           |
| }  |                      |         |           |
| timeRestrictionForChannelMeasurements        | notConfigured        |         |           |
| timeRestrictionForInterferenceMeasurements   | notConfigured        |         |           |
| codebookConfig                               | CodebookConfig       |         |           |
| dummy  | Not present          |         |           |
| groupBasedBeamReporting CHOICE {             |                      |         |           |
| disabled SEQUENCE {                          |                      |         |           |
| nrofReportedRS                               | n1                   |         |           |
| }  |                      |         |           |
| }  |                      |         |           |
| cqi-Table                                    | table2               |         | FR1       |
|  | table1               |         | FR2       |
| subbandSize                                  | value2               |         |           |
| non-PMI-PortIndication                       | Not present          |         |           |
| }  |                      |         |           |

— *CSI-ReportConfigId*

**Table 4.6.3-40: *CCSI-ReportConfigId***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CSI-ReportConfigID                           | 0            |         |           |

— *CSI-ResourceConfig*

**Table 4.6.3-41: *CSI-ResourceConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.2  |                      |         |           |
|---|----------------------|---------|-----------|
| Information Element   | Value/remark         | Comment | Condition |
| CSI-ResourceConfig ::= SEQUENCE {   |                      |         |           |
| csi-ResourceConfigId  | CSI-ResourceConfigId |         |           |
| csi-RS-ResourceSetList CHOICE {   |                      |         |           |
| nzp-CSI-RS-SSB SEQUENCE {   |                      |         |           |
| nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) | 2 entries            |         |           |
| OF NZP-CSI-RS-ResourceSetId {   |                      |         |           |
| NZP-CSI-RS-ResourceSetId[1]   | 0                    | entry 1 |           |
| NZP-CSI-RS-ResourceSetId[2]   | 1                    | entry 2 |           |
| }   |                      |         |           |
| csi-SSB-ResourceSetList   | Not present          |         |           |
| }   |                      |         |           |
| }   |                      |         |           |
| bwp-Id  | BWP-Id               |         |           |
| resourceType  | periodic             |         |           |
| }   |                      |         |           |

— *CSI-ResourceConfigId*

**Table 4.6.3-42: *CSI-ResourceConfigId***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CSI-ResourceConfigId                         | 0            |         |           |

— *CSI-ResourcePeriodicityAndOffset*

**Table 4.6.3-43: *CSI-ResourcePeriodicityAndOffset***

| Derivation Path: TS 38.331 [6], clause 6.3.2  |              |         |           |
|---|--------------|---------|-----------|
| Information Element                           | Value/remark | Comment | Condition |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |              |         |           |
| slots80                                       | 10           |         | FR1       |
| slots320                                      | 40           |         | FR2       |
| }   |              |         |           |

— *CSI-RS-ResourceConfigMobility*

**Table 4.6.3-44: *CSI-RS-ResourceConfigMobility***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                   |         |           |
|--|-------------------|---------|-----------|
| Information Element                          | Value/remark      | Comment | Condition |
| CSI-RS-ResourceConfigMobility ::= SEQUENCE { |                   |         |           |
| subcarrierSpacing                            | SubcarrierSpacing |         |           |
| csi-RS-CellList-Mobility                     | FFS               |         |           |
| }  |                   |         |           |

– *CSI-RS-ResourceMapping*

**Table 4.6.3-45: CSI-RS-ResourceMapping**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                         |         |                                |
|--|-------------------------|---------|--------------------------------|
| Information Element                          | Value/remark            | Comment | Condition                      |
| CSI-RS-ResourceMapping ::= SEQUENCE {        |                         |         |                                |
| frequencyDomainAllocation CHOICE {           |                         |         |                                |
| row1   | 1000                    |         | (FR1 AND TRS) OR (FR2 AND TRS) |
| row4   | 010                     |         | FR2                            |
| other  | 011110                  |         | FR1                            |
| }  |                         |         |                                |
| nrofPorts                                    | p8                      |         | FR1                            |
|  | p4                      |         | FR2                            |
|  | p1                      |         | (FR1 AND TRS) OR (FR2 AND TRS) |
| firstOFDMSymbolInTimeDomain                  | 3                       |         | FR1                            |
|  | 13                      |         | FR2                            |
|  | 4                       |         | (FR1 AND TRS) OR (FR2 AND TRS) |
| firstOFDMSymbolInTimeDomain2                 | Not present             |         |                                |
| cdm-Type                                     | fd-CDM2                 |         |                                |
|  | noCDM                   |         | TRS                            |
| density CHOICE {                             |                         |         |                                |
| one  | NULL                    |         |                                |
| three  | NULL                    |         | TRS                            |
| }  |                         |         |                                |
| freqBand                                     | CSI-FrequencyOccupation |         |                                |
| }  |                         |         |                                |

| Condition | Explanation                              |
|-----------|--|
| TRS       | Tracking-Reference Signal is configured. |

– *CSI-SemiPersistentOnPUSCH-TriggerStateList*

**Table 4.6.3-46: CSI-SemiPersistentOnPUSCH-TriggerStateList**

| Derivation Path: TS 38.331 [6], clause 6.3.2              |              |         |           |
|---|--------------|---------|-----------|
| Information Element                                       | Value/remark | Comment | Condition |
| CSI-SemiPersistentOnPUSCH-TriggerStateList ::= SEQUENCE { |              |         |           |
| FFS   |              |         |           |
| }   |              |         |           |

– *CSI-SSB-ResourceSet*

**Table 4.6.3-47: CSI-SSB-ResourceSet**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CSI-SSB-ResourceSet ::= SEQUENCE {           |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *CSI-SSB-ResourceSetId*

**Table 4.6.3-48: CSI-SSB-ResourceId**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CSI-SSB-ResourceSetId                        | FFS          |         |           |

– *DCP-Config-r16*

**Table 4.6.3-48A: DCP-Config-r16**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| DCP-Config-r16 ::= SEQUENCE {                |              |         |           |
| ps-RNTI-r16                                  | RNTI-Value   |         |           |
| ps-Offset-r16                                | 120          |         |           |
| sizeDCI-2-6-r16                              | 6            |         |           |
| ps-PositionDCI-2-6-r16                       | 0            |         |           |
| ps-WakeUp-r16                                | Not present  |         |           |
| ps-TransmitPeriodicL1-RSRP-r16               | Not present  |         |           |
| ps-TransmitOtherPeriodicCSI-r16              | Not present  |         |           |
| }  |              |         |           |

– *DedicatedNAS-Message*

**Table 4.6.3-49: DedicatedNAS-Message**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |         |           |
|--|---|---------|-----------|
| Information Element                          | Value/remark                              | Comment | Condition |
| DedicatedNAS-Message                         | Set according to specific message content |         |           |

– *DMRS-DownlinkConfig*

**Table 4.6.3-50: DMRS-DownlinkConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                     |             |            |
|--|---------------------|-------------|------------|
| Information Element                          | Value/remark        | Comment     | Condition  |
| DMRS-DownlinkConfig ::= SEQUENCE {           |                     |             |            |
| dmrs-Type                                    | Not present         | DMRS type 1 |            |
| dmrs-AdditionalPosition                      | pos1<br>pos0        |             | FR1<br>FR2 |
| maxLength                                    | Not present         | len1        |            |
| scramblingID0                                | Not present         |             |            |
| scramblingID1                                | Not present         |             |            |
| phaseTrackingRS                              | Not present         |             | FR1        |
| phaseTrackingRS CHOICE {                     |                     |             | FR2        |
| setup  | PTRS-DownlinkConfig |             |            |
| }  |                     |             |            |
| }  |                     |             |            |

– *DMRS-UplinkConfig*

**Table 4.6.3-51: DMRS-UplinkConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                   |             |                |
|--|-------------------|-------------|----------------|
| Information Element                          | Value/remark      | Comment     | Condition      |
| DMRS-UplinkConfig ::= SEQUENCE {             |                   |             |                |
| dmrs-Type                                    | Not present       | DMRS type 1 |                |
| dmrs-AdditionalPosition                      | pos1<br>pos0      |             | FR1<br>FR2     |
| phaseTrackingRS                              | Not present       |             |                |
| phaseTrackingRS CHOICE {                     |                   |             | PTRS_UL_CONFIG |
| setup  | PTRS-UplinkConfig |             |                |
| }  |                   |             |                |
| maxLength                                    | Not present       | len1        |                |
| transformPrecodingDisabled SEQUENCE {        |                   |             |                |
| scramblingID0                                | Not present       |             |                |
| scramblingID1                                | Not present       |             |                |
| }  |                   |             |                |
| transformPrecodingEnabled                    | Not present       |             |                |
| }  |                   |             |                |

| Condition      | Explanation                    |
|----------------|--------------------------------|
| PTRS_UL_CONFIG | When PTRS Uplink is configured |

– *DownlinkConfigCommon*

**Table 4.6.3-52: DownlinkConfigCommon**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |         |           |
|--|--|---------|-----------|
| Information Element                          | Value/remark   | Comment | Condition |
| DownlinkConfigCommon ::= SEQUENCE {          |  |         |           |
| frequencyInfoDL                              | FrequencyInfoDL  |         |           |
| initialDownlinkBWP                           | BWP-DownlinkCommon<br>BWP-DownlinkCommon<br>with condition SCell_add |         | SCell_Add |
| }  |  |         |           |

– *DownlinkConfigCommonSIB*

**Table 4.6.3-53: DownlinkConfigCommonSIB**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |         |           |
|--|---|---------|-----------|
| Information Element                          | Value/remark                                    | Comment | Condition |
| DownlinkConfigCommonSIB ::= SEQUENCE {       |   |         |           |
| frequencyInfoDL                              | FrequencyInfoDL-SIB                             |         |           |
| initialDownlinkBWP                           | BWP-DownlinkCommon<br>with condition InitialBWP |         |           |
| bcch-Config SEQUENCE {                       |   |         |           |
| modificationPeriodCoeff                      | n4  |         |           |
| }  |   |         |           |
| pcch-Config SEQUENCE {                       |   |         |           |
| defaultPagingCycle                           | rf128   |         |           |
| nAndPagingFrameOffset CHOICE {               |   |         |           |
| halfT  | 0   |         |           |
| }  |   |         |           |
| ns   | one   |         |           |
| firstPDCCH-MonitoringOccasionOfPO CHOICE {}  | Not present                                     |         |           |
| }  |   |         |           |
| }  |   |         |           |

– *DownlinkPreemption*

**Table 4.6.3-54: DownlinkPreemption**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| DownlinkPreemption ::= SEQUENCE {            |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *DRB-Identity*

**Table 4.6.3-55: DRB-Identity**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| DRB-Identity                                 | n            |         | DRBn      |

| Condition | Explanation    |
|-----------|----------------|
| DRBn      | DRB-Identity n |

— *DRX-Config*

**Table 4.6.3-56: DRX-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| DRX-Config ::= SEQUENCE {                    |              |         |           |
| drx-onDurationTimer CHOICE {                 |              |         |           |
| milliSeconds                                 | ms6          |         |           |
| }  |              |         |           |
| drx-InactivityTimer                          | ms1280       |         |           |
| drx-HARQ-RTT-TimerDL                         | 56           |         |           |
| drx-HARQ-RTT-TimerUL                         | 56           |         |           |
| drx-RetransmissionTimerDL                    | sl16         |         | FR1       |
|  | sl64         |         | FR2       |
| drx-RetransmissionTimerUL                    | sl16         |         | FR1       |
|  | sl64         |         | FR2       |
| drx-LongCycleStartOffset CHOICE {            |              |         |           |
| ms10240                                      | 0            |         |           |
| }  |              |         |           |
| shortDRX                                     | not present  |         |           |
| drx-SlotOffset                               | 0            |         |           |
| }  |              |         |           |

— *DRX-ConfigSecondaryGroup*

**Table 4.6.3-56A: DRX-ConfigSecondaryGroup**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| DRX-ConfigSecondaryGroup ::= SEQUENCE {      |              |         |           |
| FFS  |              |         |           |

— *FilterCoefficient*

**Table 4.6.3-57: FilterCoefficient**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| FilterCoefficient                            | fc4          |         |           |

— *FreqBandIndicatorNR*

**Table 4.6.3-58: FreqBandIndicatorNR**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |         |              |
|--|---|---------|--------------|
| Information Element                          | Value/remark  | Comment | Condition    |
| FreqBandIndicatorNR                          | Operating band of the frequency as specified in Table 4.4.2-1 |         |              |
|  | Secondary band under test                                     |         | CA-InterBand |

| Condition    | Explanation                     |
|--------------|---------------------------------|
| CA-InterBand | Used in CA interBand test cases |

— *FrequencyInfoDL*

**Table 4.6.3-59: FrequencyInfoDL**

| Derivation Path: TS 38.331 [6], clause 6.3.2                                  |  |         |           |
|---|--|---------|-----------|
| Information Element   | Value/remark                                 | Comment | Condition |
| FrequencyInfoDL ::= SEQUENCE {  |  |         |           |
| absoluteFrequencySSB  | ARFCN-ValueNR with condition DL_SSB          |         |           |
| frequencyBandList   | MultiFrequencyBandList NR                    |         |           |
| absoluteFrequencyPointA   | ARFCN-ValueNR with condition DL_PointA       |         |           |
| scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier { | 1 entry                                      |         |           |
| SCS-SpecificCarrier[1]  | SCS-SpecificCarrier with condition DL_PointA | entry 1 |           |
| }   |  |         |           |
| }   |  |         |           |

— *FrequencyInfoDL-SIB*

**Table 4.6.3-60: FrequencyInfoDL-SIB**

| Derivation Path: TS 38.331 [6], clause 6.3.2                                  |  |         |           |
|---|--|---------|-----------|
| Information Element   | Value/remark   | Comment | Condition |
| FrequencyInfoDL-SIB ::= SEQUENCE {  |  |         |           |
| frequencyBandList   | MultiFrequencyBandList NR-SIB  |         |           |
| offsetToPointA  | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. |         |           |
| scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier { | 1 entry  |         |           |
| SCS-SpecificCarrier[1]  | SCS-SpecificCarrier with condition DL_PointA                                   | entry 1 |           |
| }   |  |         |           |
| }   |  |         |           |

— *FrequencyInfoUL*

**Table 4.6.3-61: FrequencyInfoUL**

| Derivation Path: TS 38.331 [6], clause 6.3.2                               |   |         |            |
|--|---|---------|------------|
| Information Element  | Value/remark  | Comment | Condition  |
| FrequencyInfoUL ::= SEQUENCE {   |   |         |            |
| frequencyBandList  | MultiFrequencyBandList NR<br>Not present              |         | FDD<br>TDD |
| absoluteFrequencyPointA  | ARFCN-ValueNR with condition UL_PointA<br>Not present |         | FDD<br>TDD |
| scs-SpecificCarriers SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier { | 1 entry   |         |            |
| SCS-SpecificCarrier1   | SCS-SpecificCarrier with condition UL_PointA          | entry 1 |            |
| }  |   |         |            |
| additionalSpectrumEmission   | AdditionalSpectrumEmission                            |         |            |
| p-Max  | P-Max   |         |            |
| frequencyShift7p5khz   | Not present   |         |            |
| }  |   |         |            |

— *FrequencyInfoUL-SIB*

**Table 4.6.3-62: FrequencyInfoUL-SIB**

| Derivation Path: TS 38.331 [6], clause 6.3.2                                  |   |         |            |
|---|---|---------|------------|
| Information Element   | Value/remark  | Comment | Condition  |
| FrequencyInfoUL-SIB ::= SEQUENCE {  |   |         |            |
| frequencyBandList   | MultiFrequencyBandList NR-SIB<br>Not present          |         | FDD<br>TDD |
| absoluteFrequencyPointA   | ARFCN-ValueNR with condition UL_PointA<br>Not present |         | FDD<br>TDD |
| scs-SpecificCarrierList SEQUENCE (SIZE (1..maxSCSs)) OF SCS-SpecificCarrier { | 1 entry   |         |            |
| SCS-SpecificCarrier[1]  | SCS-SpecificCarrier with condition UL_PointA          | entry 1 |            |
| }   |   |         |            |
| p-Max   | P-Max   |         |            |
| frequencyShift7p5khz  | Not present   |         |            |
| }   |   |         |            |

— *HighSpeedConfig*

**Table 4.6.3-62A: HighSpeedConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| HighSpeedConfig-r16 ::= SEQUENCE {           |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *Hysteresis*

**Table 4.6.3-63: Hysteresis**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| Hysteresis                                   | 4            |         |           |

— *InvalidSymbolPattern*

**Table 4.6.3-63A: InvalidSymbolPattern**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| InvalidSymbolPattern-r16 ::= SEQUENCE {      |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *I-RNTI-Value*

**Table 4.6.3-64: I-RNTI-Value**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |                       |           |
|--|---|-----------------------|-----------|
| Information Element                          | Value/remark  | Comment               | Condition |
| I-RNTI-Value                                 | SS arbitrarily selects a value between '00 0000 0001'H and 'FF FFFF FFFF'H. | BIT STRING (SIZE(40)) |           |

— *LBT-FailureRecoveryConfig*

**Table 4.6.3-64A: LBT-FailureRecoveryConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| LBT-FailureRecoveryConfig-r16 ::= SEQUENCE { |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *LocationInfo*

**Table 4.6.3-64B: LocationInfo**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| LocationInfo-r16 ::= SEQUENCE {              |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *LocationMeasurementInfo*

**Table 4.6.3-65: LocationMeasurementInfo**

| Derivation Path: TS 38.331 [6], clause 6.3.2                               |                  |         |           |
|--|------------------|---------|-----------|
| Information Element  | Value/remark     | Comment | Condition |
| LocationMeasurementInfo ::= CHOICE {                                       |                  |         |           |
| eutra-RSTD SEQUENCE (SIZE (1..maxInterRAT-RSTD-Freq)) OF EUTRA-RSTD-Info { | 1 entry          |         |           |
| EUTRA-RSTD-Info[1] SEQUENCE {  |                  | entry 1 |           |
| carrierFreq  | ARFCN-ValueEUTRA |         |           |
| measPRS-Offset   | FFS              |         |           |
| }  |                  |         |           |
| }  |                  |         |           |
| }  |                  |         |           |

— *LogicalChannelConfig*

**Table 4.6.3-66: LogicalChannelConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                     |         |                        |
|--|---------------------|---------|------------------------|
| Information Element                          | Value/remark        | Comment | Condition              |
| LogicalChannelConfig ::= SEQUENCE {          |                     |         |                        |
| ul-SpecificParameters SEQUENCE {             |                     |         |                        |
| priority                                     | 1                   |         |                        |
|  | 3                   |         | SRB2                   |
| prioritisedBitRate                           | infinity            |         |                        |
| bucketSizeDuration                           | ms50                |         |                        |
| allowedServingCells                          | Not present         |         |                        |
| allowedSCS-List                              | Not present         |         |                        |
| maxPUSCH-Duration                            | Not present         |         |                        |
| configuredGrantType1Allowed                  | Not present         |         |                        |
| logicalChannelGroup                          | 1                   |         | HI                     |
|  | 2                   |         | LO                     |
|  | 0                   |         | SRB1,<br>SRB2,<br>SRB3 |
| schedulingRequestID                          | SchedulingRequestId |         |                        |
| logicalChannelSR-Mask                        | false               |         |                        |
| logicalChannelSR-DelayTimerApplied           | false               |         |                        |
| bitRateQueryProhibitTimer                    | Not present         |         |                        |
| }  |                     |         |                        |
| }  |                     |         |                        |

| Condition | Explanation                                      |
|-----------|--|
| HI        | Used for DRBs with high logical channel priority |
| LO        | Used for DRBs with low logical channel priority  |
| SRB1      | Establishment of SRB1                            |
| SRB2      | Establishment of SRB2                            |
| SRB3      | Establishment of SRB3                            |

– *LogicalChannelIdentity*

**Table 4.6.3-67: LogicalChannelIdentity**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| LogicalChannelIdentity                       | 1            |         | SRB1      |
| LogicalChannelIdentity                       | 2            |         | SRB2      |
| LogicalChannelIdentity                       | 3            |         | SRB3      |
| LogicalChannelIdentity                       | n+3          |         | DRBn      |

| Condition | Explanation                    |
|-----------|--------------------------------|
| SRB1      | Establishment of SRB1          |
| SRB2      | Establishment of SRB2          |
| SRB3      | Establishment of SRB3          |
| DRBn      | Establishment of DRBn; n=1..29 |

– *MAC-CellGroupConfig*

**Table 4.6.3-68: MAC-CellGroupConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                          |         |           |
|--|--------------------------|---------|-----------|
| Information Element                          | Value/remark             | Comment | Condition |
| MAC-CellGroupConfig ::= SEQUENCE {           |                          |         |           |
| drx-Config                                   | Not present              |         |           |
| drx-Config CHOICE {                          |                          |         | DRX       |
| setup  | DRX-Config               |         |           |
| }  |                          |         |           |
| schedulingRequestConfig                      | SchedulingRequest-Config |         |           |
| bsr-Config                                   | BSR-Config               |         |           |
| tag-Config                                   | TAG-Config               |         |           |
| phr-Config CHOICE {                          |                          |         |           |
| setup  | PHR-Config               |         |           |
| }  |                          |         |           |
| skipUplinkTxDynamic                          | false                    |         |           |
| }  |                          |         |           |

| Condition | Explanation                                   |
|-----------|---|
| DRX       | This condition applies when DRX is configured |

— *MeasConfig*

**Table 4.6.3-69: MeasConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                          |         |           |
|--|--------------------------|---------|-----------|
| Information Element                          | Value/remark             | Comment | Condition |
| MeasConfig ::= SEQUENCE {                    |                          |         |           |
| measObjectToRemoveList                       | Not present              |         |           |
| measObjectToAddModList                       | MeasObjectToAddModList   |         |           |
| reportConfigToRemoveList                     | Not present              |         |           |
| reportConfigToAddModList                     | ReportConfigToAddModList |         |           |
| measIdToRemoveList                           | Not present              |         |           |
| measIdToAddModList                           | MeasIdToAddModList       |         |           |
| s-MeasureConfig                              | Not present              |         |           |
| quantityConfig                               | QuantityConfig           |         |           |
| measGapConfig                                | Not present              |         |           |
| measGapSharingConfig                         | Not present              |         |           |
| }  |                          |         |           |

— *MeasGapConfig*

**Table 4.6.3-70: MeasGapConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |                               |
|--|--------------|---------|-------------------------------|
| Information Element                          | Value/remark | Comment | Condition                     |
| MeasGapConfig ::= SEQUENCE {                 |              |         |                               |
| gapFR2                                       | Not present  |         |                               |
| gapFR2 CHOICE {                              |              |         | GAP_FR2                       |
| setup SEQUENCE {                             |              |         |                               |
| gapOffset                                    | 159          |         |                               |
| mgl  | ms3dot5      |         |                               |
| mgrp   | ms160        |         |                               |
| mgta   | ms0          |         |                               |
| }  |              |         |                               |
| }  |              |         |                               |
| gapFR1                                       | Not present  |         |                               |
| gapFR1 CHOICE {                              |              |         | GAP_FR1                       |
| setup SEQUENCE {                             |              |         |                               |
| gapOffset                                    | 39           |         |                               |
|  | 9            |         | SIG AND<br>INTER-<br>FREQ_ODD |
| mgl  | ms6          |         |                               |
| mgrp   | ms40         |         |                               |
| mgta   | ms0          |         |                               |
| }  |              |         |                               |
| gapUE  | Not present  |         | GAP_FR1<br>OR<br>GAP_FR2      |
| gapUE CHOICE {                               |              |         |                               |
| setup SEQUENCE {                             |              |         |                               |
| gapOffset                                    | 39           |         |                               |
|  | 9            |         | SIG AND<br>INTER-<br>FREQ_ODD |
| mgl  | ms6          |         |                               |
| mgrp   | ms40         |         |                               |
| mgta   | ms0          |         |                               |
| }  |              |         |                               |
| }  |              |         |                               |
| }  |              |         |                               |

| Condition      | Explanation  |
|----------------|--|
| GAP_FR1        | Configuration for FR1 per-FR gaps  |
| GAP_FR2        | Configuration for FR2 per-FR gaps  |
| INTER-FREQ_ODD | When the SFNoffset of inter frequency neighbour cell is odd number.<br>SFNoffset is defined in TS 38.523-3 [23]Table 7.1.5.2-1 |

– *MeasGapSharingConfig*

**Table 4.6.3-71: MeasGapSharingConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasGapSharingConfig ::= SEQUENCE {          |              |         |           |
| gapSharingFR2                                | Not present  |         |           |
| }  |              |         |           |

– *MeasId*

**Table 4.6.3-72: MeasId**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasId                                       | 1            |         |           |

– *MeasIdleConfig*

**Table 4.6.3-72A: MeasIdleConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasIdleConfigSIB-r16 ::= SEQUENCE {         |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *MeasIdToAddModList*

**Table 4.6.3-73: MeasIdToAddModList**

| Derivation Path: TS 38.331 [6], clause 6.3.2                                  |                |         |           |
|---|----------------|---------|-----------|
| Information Element   | Value/remark   | Comment | Condition |
| MeasIdToAddModList ::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF MeasIdToAddMod { | 1 entry        |         |           |
| MeasIdToAddMod[1] SEQUENCE {  |                | entry 1 |           |
| measId  | MeasId         |         |           |
| measObjectId  | MeasObjectId   |         |           |
| reportConfigId  | ReportConfigId |         |           |
| }   |                |         |           |

— *MeasObjectCLI*

**Table 4.6.3-73A: MeasObjectCLI**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasObjectCLI-r16 ::= SEQUENCE {             |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *MeasObjectEUTRA*

**Table 4.6.3-74: MeasObjectEUTRA**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |   |                           |
|--|--|---|---------------------------|
| Information Element                          | Value/remark   | Comment   | Condition                 |
| MeasObjectEUTRA ::= SEQUENCE {               |  |   |                           |
| carrierFreq                                  | Downlink EARFCN for Freq                                       |   |                           |
| allowedmeasBandwidth                         | Set according to TS 36.508 [2] Table 4.4.3.4-1 for E-UTRA cell | row 'measurement Bandwidth'   |                           |
| cellsToRemoveListEUTRAN                      | Not present  |   |                           |
| cellsToAddModListEUTRAN                      | Not present  |   |                           |
| blackCellsToRemoveListEUTRAN                 | Not present  |   |                           |
| blackCellsToAddModListEUTRAN                 | Not present  |   |                           |
| eutra-PresenceAntennaPort1                   | false  |   |                           |
|  | true   | at least two cell-specific antenna ports are used in all neighbouring cells | All neighCells with port1 |
| eutra-Q-OffsetRange                          | Not present  |   |                           |
| widebandRSRQ-Meas                            | false  |   |                           |
| }  |  |   |                           |

| Condition                 | Explanation   |
|---------------------------|---|
| All neighCells with port1 | Used for all neighbouring cells with at least two cell-specific antenna ports |

— *MeasObjectId*

**Table 4.6.3-75: MeasObjectId**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasObjectId                                 | 1            |         |           |

## — MeasObjectNR

**Table 4.6.3-76: MeasObjectNR(Thres)**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                                     |   |           |
|--|-------------------------------------|---|-----------|
| Information Element                          | Value/remark                        | Comment   | Condition |
| MeasObjectNR ::= SEQUENCE {                  |                                     |   |           |
| ssbFrequency                                 | ARFCN-ValueNR with condition DL_SSB |   |           |
| ssbSubcarrierSpacing                         | SubcarrierSpacing                   |   |           |
| smtc1  | SSB-MTC                             |   |           |
| smtc2  | Not present                         |   |           |
| refFreqCSI-RS                                | Not present                         |   |           |
| referenceSignalConfig SEQUENCE {             |                                     |   |           |
| ssb-ConfigMobility SEQUENCE {                |                                     |   |           |
| ssb-ToMeasure CHOICE {                       |                                     |   |           |
| setup  | SSB-ToMeasure                       |   |           |
| }  |                                     |   |           |
| deriveSSB-IndexFromCell                      | false                               |   | FDD       |
|  | true                                |   | TDD       |
| ss-RSSI-Measurement                          | Not present                         |   |           |
| }  |                                     |   |           |
| csi-rs-ResourceConfigMobility                | Not present                         |   |           |
| }  |                                     |   |           |
| absThreshSS-BlocksConsolidation SEQUENCE {   |                                     |   |           |
| thresholdRSRP                                | Thres                               | Thres is an entry value into a mapping table in TS 38.133 [13]. |           |
| thresholdRSRQ                                | Not present                         |   |           |
| thresholdSINR                                | Not present                         |   |           |
| }  |                                     |   |           |
| absThreshCSI-RS-Consolidation                | Not present                         |   |           |
| nrofSS-BlocksToAverage                       | 2                                   |   |           |
| nrofCSI-RS-ResourcesToAverage                | Not present                         |   |           |
| quantityConfigIndex                          | 1                                   |   |           |
| offsetMO SEQUENCE {                          |                                     |   |           |
| rsrpOffsetSSB                                | dB0                                 |   |           |
| rsrqOffsetSSB                                | dB0                                 |   |           |
| sinrOffsetSSB                                | dB0                                 |   |           |
| rsrpOffsetCSI-RS                             | dB0                                 |   |           |
| rsrqOffsetCSI-RS                             | dB0                                 |   |           |
| sinrOffsetCSI-RS                             | dB0                                 |   |           |
| }  |                                     |   |           |
| cellsToRemoveList                            | Not present                         |   |           |
| cellsToAddModList                            | Not present                         |   |           |
| blackCellsToRemoveList                       | Not present                         |   |           |
| blackCellsToAddModList                       | Not present                         |   |           |
| whiteCellsToRemoveList                       | Not present                         |   |           |
| whiteCellsToAddModList                       | Not present                         |   |           |
| freqBandIndicatorNR                          | FreqBandIndicatorNR                 |   |           |
| }  |                                     |   |           |

– *MeasObjectNR-SL*

**Table 4.6.3-76A: MeasObjectNR-SL**

| Derivation Path: TS 38.331 [6], clause 6.3.2   |                       |         |           |
|--|-----------------------|---------|-----------|
| Information Element  | Value/remark          | Comment | Condition |
| MeasObjectNR-SL-r16 ::= SEQUENCE {   |                       |         |           |
| tx-PoolMeasToRemoveList-r16  | Not present           |         |           |
| tx-PoolMeasToAddModList-r16 SEQUENCE (SIZE (1..maxNrofSL-PoolToMeasureNR-r16)) OF SL-ResourcePoolID-r16[ | 1 entry               |         |           |
| SL-ResourcePoolID-r16[1]   | SL-ResourcePoolID-r16 | entry 1 |           |
| }  |                       |         |           |
| }  |                       |         |           |

– *MeasObjectToAddModList*

**Table 4.6.3-77: MeasObjectToAddModList**

| Derivation Path: TS 38.331 [6], clause 6.3.2  |              |         |           |
|---|--------------|---------|-----------|
| Information Element   | Value/remark | Comment | Condition |
| MeasObjectToAddModList ::= SEQUENCE (SIZE (1..maxNrofMeasId)) OF MeasObjectToAddMod { | 1 entry      |         |           |
| MeasObjectToAddMod[1] SEQUENCE {  |              | entry 1 |           |
| measObjectId  | MeasObjectId |         |           |
| measObject CHOICE {   |              |         |           |
| measObjectNR  | MeasObjectNR |         |           |
| }   |              |         |           |
| }   |              |         |           |
| }   |              |         |           |

– *MeasObjectUTRA-FDD*

**Table 4.6.3-77A: MeasObjectUTRA-FDD**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasObjectUTRA-FDD-r16 ::= SEQUENCE {        |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *MeasResultCellListSFTD-NR*

**Table 4.6.3-78: MeasResultCellListSFTD-NR**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasResultCellListSFTD-NR ::= SEQUENCE {     |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *MeasResultCellListSFTD-EUTRA*

**Table 4.6.3-78A: MeasResultCellListSFTD-EUTRA**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasResultCellListSFTD-EUTRA ::= SEQUENCE {  |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *MeasResults*

**Table 4.6.3-79: MeasResults**

| Derivation Path: TS 38.331 [6], clause 6.3.2  |   |         |                |
|---|---|---------|----------------|
| Information Element   | Value/remark                              | Comment | Condition      |
| MeasResults ::= SEQUENCE {  |   |         |                |
| measId  | MeasId                                    |         |                |
| measResultServingMOList SEQUENCE (SIZE (1.. maxNrofServingCells)) OF MeasResultServMO { | 1 entry                                   |         |                |
| MeasResultServMO[1] SEQUENCE {  |   | entry 1 |                |
| servCellId  | ServCellIndex                             |         |                |
| measResultServingCell SEQUENCE {  |   |         |                |
| physCellId  | PhysCellId                                |         |                |
| measResult SEQUENCE {   |   |         |                |
| cellResults SEQUENCE {  |   |         |                |
| resultsSSB-Cell SEQUENCE {  |   |         |                |
| rsrp  | Not checked                               |         |                |
| rsrq  | Not checked                               |         |                |
| sinr  | Not checked                               |         |                |
| }   |   |         |                |
| resultsCSI-RS-Cell  | Not present                               |         |                |
| }   |   |         |                |
| rsIndexResults  | Not present                               |         |                |
| }   |   |         |                |
| cgi-Info  | Not present                               |         |                |
| }   |   |         |                |
| measResultBestNeighCell   | Not present                               |         |                |
| }   |   |         |                |
| }   |   |         |                |
| measResultNeighCells  | Not present                               |         | A1, A2         |
|   | Set according to specific message content |         | A3, A4, A5, A6 |
| }   |   |         |                |

| Condition | Explanation   |
|-----------|---|
| A1        | If event trigger Id in corresponding Measurement Configuration was Event A1 |
| A2        | If event trigger Id in corresponding Measurement Configuration was Event A2 |
| A3        | If event trigger Id in corresponding Measurement Configuration was Event A3 |
| A4        | If event trigger Id in corresponding Measurement Configuration was Event A4 |
| A5        | If event trigger Id in corresponding Measurement Configuration was Event A5 |
| A6        | If event trigger Id in corresponding Measurement Configuration was Event A6 |

– *MeasResult2EUTRA*

**Table 4.6.3-79A: MeasResult2EUTRA**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasResult2EUTRA ::= SEQUENCE {              |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *MeasResult2NR*

**Table 4.6.3-79B: MeasResult2NR**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasResult2NR ::= SEQUENCE {                 |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *MeasResultIdleEUTRA*

**Table 4.6.3-79C: MeasResultIdleEUTRA**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasResultIdleEUTRA-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *MeasResultIdleNR*

**Table 4.6.3-79D: MeasResultIdleNR**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasResultIdleNR-r16 ::= SEQUENCE {          |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *MeasResultSCG-Failure*

**Table 4.6.3-80: MeasResultSCG-Failure**

| Derivation Path: TS 38.331 [6], clause 6.3.2                        |                                     |   |           |
|---|-------------------------------------|---|-----------|
| Information Element   | Value/remark                        | Comment   | Condition |
| MeasResultSCG-Failure ::= SEQUENCE {                                |                                     | <i>measResultPerMOList</i><br>for each <i>MeasObjectNR</i> for which a <i>measId</i> is configured (by the NR <i>RRCConfiguration</i> message) and measurement results are available include an entry |           |
| measResultPerMOList SEQUENCE (SIZE (1..maxFreq)) OF MeasResult2NR { | <i>n</i> entries of MeasResult2NR   | MOList [1]<br><br><i>n</i> denotes the number of non-serving frequencies being measured   |           |
| MeasResult2NR[1] SEQUENCE {   |                                     | entry 1   |           |
| ssbFrequency  | ARFCN-ValueNR with condition DL_SSB | the ARFCN if there is a <i>measId</i> configured with the <i>MeasObjectNR</i> and a <i>reportConfig</i> which has <i>rsType</i> set to <i>ssb</i>   |           |
| refFreqCSI-RS   | INTEGER (0..3279165)                | the ARFCN if there is a <i>measId</i> configured with the <i>MeasObjectNR</i> and a <i>reportConfig</i> which has <i>rsType</i> set to <i>csi-rs</i>  |           |
| measResultServingCell SEQUENCE {                                    |                                     | if a serving cell is associated with the <i>MeasObjectNR</i>  |           |
| physCellId  | INTEGER (0..1007)                   | the <i>physCellId</i> configured for this serving cell  |           |
| measResult SEQUENCE {   |                                     |   |           |
| cellResults SEQUENCE {  |                                     |   |           |
| resultsSSB-Cell SEQUENCE {  |                                     |   |           |
| rsrp  | as specified in Table 4.6.3-152     | Integer value for RSRP measurements   |           |
| rsrq  | as specified in Table 4.6.3-153     | Integer value for RSRQ measurements   |           |
| sinr  | as specified in Table 4.6.3-172     | Integer value for SINR measurements   |           |
| }   |                                     |   |           |
| resultsCSI-RS-Cell SEQUENCE {                                       |                                     |   |           |
| rsrp  | as specified in Table               | Integer value for   |           |

|  |  |   |  |
|--|--|---|--|
|  | 4.6.3-152                                  | RSRP measurements   |  |
| rsrq   | as specified in Table 4.6.3-153            | Integer value for RSRQ measurements   |  |
| sinr   | as specified in Table 4.6.3-172            | Integer value for SINR measurements   |  |
| }  |  |   |  |
| }  |  |   |  |
| rsIndexResults SEQUENCE {  |  |   |  |
| resultsSSB-Indexes SEQUENCE (SIZE (1..maxNrofSSBs)) OF ResultsPerSSB-Index {         | <i>n</i> entires of ResultsPerSSB-Index    | <i>ResultsPerSSB-IndexList</i>  |  |
| ResultsPerSSB-Index[1] SEQUENCE {  |  | entry 1   |  |
| ssb-Index  | SSB-Index                                  | an SS-Block within an SS-Burst  |  |
| ssb-Results SEQUENCE {   |  | <i>MeasQuantityResults</i>  |  |
| rsrp   | as specified in Table 4.6.3-152            | Integer value for RSRP measurements   |  |
| rsrq   | as specified in Table 4.6.3-153            | Integer value for RSRQ measurements   |  |
| sinr   | as specified in Table 4.6.3-172            | Integer value for SINR measurements   |  |
| }  |  |   |  |
| }  |  |   |  |
|  |  | <i>ResultsPerSSB-Index</i> entry [x] if any   |  |
| }  |  |   |  |
| resultsCSI-RS-Indexes SEQUENCE (SIZE (1..maxNrofCSI-RS)) OF ResultsPerCSI-RS-Index { | <i>n</i> entires of ResultsPerCSI-RS-Index | <i>ResultsPerCSI-RS-IndexList</i>   |  |
| ResultsPerCSI-RS-Index[1] SEQUENCE {   |  | entry 1   |  |
| csi-RS-Index   | INTEGER (0..maxNrofCSI-RS-ResourcesRRM-1)  | CSI-RS resource index associated to the measurement information to be reported        |  |
| csi-RS-Results SEQUENCE {  |  | <i>MeasQuantityResults</i>  |  |
| rsrp   | as specified in Table 4.6.3-152            | Integer value for RSRP measurements   |  |
| rsrq   | as specified in Table 4.6.3-153            | Integer value for RSRQ measurements   |  |
| sinr   | as specified in Table 4.6.3-172            | Integer value for SINR measurements   |  |
| }  |  |   |  |
| }  |  |   |  |
|  |  | <i>ResultsPerCSI-RS-Index</i> entry [x] if any  |  |
| }  |  |   |  |
| }  |  |   |  |
| measResultNeighCellListNR SEQUENCE (SIZE (1..maxCellReport)) OF MeasResultNR {       | <i>n</i> entires of MeasResultNR           | include the best measured cells, ordered such that the best cell is listed first, and |  |

|                               |                                 |  |  |
|-------------------------------|---------------------------------|--|--|
|                               |                                 | based on measurements collected up to the moment the UE detected the failure |  |
| MeasResultNR[1] SEQUENCE {    |                                 | entry 1  |  |
| physCellId                    | INTEGER (0..1007)               | the <i>physCellId</i> configured for the measured cell                       |  |
| measResult SEQUENCE {         |                                 |  |  |
| cellResults SEQUENCE {        |                                 |  |  |
| resultsSSB-Cell SEQUENCE {    |                                 |  |  |
| rsrp                          | as specified in Table 4.6.3-152 | Integer value for RSRP measurements  |  |
| rsrq                          | as specified in Table 4.6.3-153 | Integer value for RSRQ measurements  |  |
| sinr                          | as specified in Table 4.6.3-172 | Integer value for SINR measurements  |  |
| }                             |                                 |  |  |
| resultsCSI-RS-Cell SEQUENCE { |                                 |  |  |
| rsrp                          | as specified in Table 4.6.3-152 | Integer value for RSRP measurements  |  |
| rsrq                          | as specified in Table 4.6.3-153 | Integer value for RSRQ measurements  |  |
| sinr                          | as specified in Table 4.6.3-172 | Integer value for SINR measurements  |  |
| }                             |                                 |  |  |
| }                             |                                 |  |  |
| }                             |                                 |  |  |
| }                             |                                 |  |  |
|                               |                                 | <i>MeasResultNR</i> entry [x] if any   |  |
| }                             |                                 | <i>MeasResult2NR</i> entry [x] if any  |  |
|                               |                                 | MOList [x] if any  |  |
| }                             |                                 |  |  |
| }                             |                                 |  |  |

– *MeasResultsSL*

**Table 4.6.3-80A: MeasResultsSL**

| Derivation Path: TS 38.331 [6], clause 6.3.2   |                       |         |           |
|--|-----------------------|---------|-----------|
| Information Element  | Value/remark          | Comment | Condition |
| MeasResultsSL-r16 ::= SEQUENCE {   |                       |         |           |
| measResultsListSL-r16 CHOICE {   |                       |         |           |
| measResultNR-SL-r16 SEQUENCE {   |                       |         |           |
| measResultListCBR-NR-r16 SEQUENCE (SIZE (1.. maxNrofSL-PoolToMeasureNR-r16)) OF MeasResultCBR-NR-r16 { | 1 entry               |         |           |
| MeasResultCBR-NR-r16[1] SEQUENCE {   |                       | entry 1 |           |
| sl-poolReportIdentity-r16  | SL-ResourcePoolID-r16 |         |           |
| sl-CBR-ResultsNR-r16   | SL-CBR-r16            |         |           |
| }  |                       |         |           |
| }  |                       |         |           |
| }  |                       |         |           |
| }  |                       |         |           |

– *MeasTriggerQuantityEUTRA*

**Table 4.6.3-80B: MeasTriggerQuantityEUTRA**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasTriggerQuantityEUTRA-r16 ::= SEQUENCE {  |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *MobilityStateParameters*

**Table 4.6.3-81: MobilityStateParameters**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MobilityStateParameters ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *MsgA-ConfigCommon*

**Table 4.6.3-81A: MsgA-ConfigCommon**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MsgA-ConfigCommonL-r16 ::= SEQUENCE {        |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *MsgA-PUSCH-Config*

**Table 4.6.3-81B: *MsgA-PUSCH-Config***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MsgA-PUSCH-Config-r16 ::= SEQUENCE {         |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *MultiFrequencyBandListNR*

**Table 4.6.3-82: *MultiFrequencyBandListNR***

| Derivation Path: TS 38.331 [6], clause 6.3.2   |                     |         |           |
|--|---------------------|---------|-----------|
| Information Element  | Value/remark        | Comment | Condition |
| MultiFrequencyBandListNR ::= SEQUENCE (SIZE (1..maxNrofMultiBands)) OF FreqBandIndicatorNR { | 1 entry             |         |           |
| FreqBandIndicatorNR[1]   | FreqBandIndicatorNR | entry 1 |           |
| }  |                     |         |           |

- *MultiFrequencyBandListNR-SIB*

**Table 4.6.3-82A: *MultiFrequencyBandListNR-SIB***

| Derivation Path: TS 38.331 [6], clause 6.3.2   |                     |         |           |
|--|---------------------|---------|-----------|
| Information Element  | Value/remark        | Comment | Condition |
| MultiFrequencyBandListNR-SIB ::= SEQUENCE (SIZE (1.. maxNrofMultiBands)) OF NR-MultiBandInfo { | 1 entry             |         |           |
| NR-MultiBandInfo[1] SEQUENCE {   |                     | entry 1 |           |
| freqBandIndicatorNR  | FreqBandIndicatorNR |         |           |
| nr-NS-PmaxList   | NR-NS-PmaxList      |         |           |
| }  |                     |         |           |
| }  |                     |         |           |

- *NeedForGapsConfigNR*

**Table 4.6.3-82B: *NeedForGapsConfigNR***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| NeedForGapsConfigNR-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *NeedForGapsInfoNR*

**Table 4.6.3-82C: *NeedForGapsInfoNR***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| NeedForGapsInfoNR-r16 ::= SEQUENCE {         |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *NextHopChainingCount*

**Table 4.6.3-83: *NextHopChainingCount***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| NextHopChainingCount                         | 0            |         |           |

- *NG-5G-S-TMSI*

**Table 4.6.3-84: *NG-5G-S-TMSI***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |                       |           |
|--|--|-----------------------|-----------|
| Information Element                          | Value/remark                                   | Comment               | Condition |
| NG-5G-S-TMSI                                 | Set to the value of the NG-5G-S-TMSI of the UE | BIT STRING (SIZE(40)) |           |

- *NPN-Identity*

**Table 4.6.3-84AA: *NPN-Identity***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| NPN-Identity-r16 ::= CHOICE {                |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *NPN-IdentityInfoList*

**Table 4.6.3-84AB: *NPN-IdentityInfoList***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| NPN-IdentityInfoList-r16 ::= SEQUENCE {      |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *NR-NS-PmaxList*

**Table 4.6.3-84A: *NR-NS-PmaxList***

| Derivation Path: TS 38.331 [6], clause 6.3.2                                    |                            |         |           |
|---|----------------------------|---------|-----------|
| Information Element   | Value/remark               | Comment | Condition |
| NR-NS-PmaxList ::= SEQUENCE (SIZE (1.. maxNrofMultiBands)) OF NR-NS-PmaxValue { | 1 entry                    |         |           |
| NR-NS-PmaxValue[1] SEQUENCE {   |                            | entry 1 |           |
| additionalPmax  | Not present                |         |           |
| additionalSpectrumEmission  | AdditionalSpectrumEmission |         |           |
| }   |                            |         |           |
| }   |                            |         |           |

— *NZP-CSI-RS-Resource*

**Table 4.6.3-85: NZP-CSI-RS-Resource**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                                  |         |           |
|--|----------------------------------|---------|-----------|
| Information Element                          | Value/remark                     | Comment | Condition |
| NZP-CSI-RS-Resource ::= SEQUENCE {           |                                  |         |           |
| nzp-CSI-RS-Resourceld                        | NZP-CSI-RS-Resourceld            |         |           |
| resourceMapping                              | CSI-RS-ResourceMapping           |         |           |
| powerControlOffset                           | -3                               |         |           |
| powerControlOffsetSS                         | Not present                      |         |           |
| scramblingID                                 | ScramblingId                     |         |           |
| periodicityAndOffset                         | CSI-ResourcePeriodicityAndOffset |         |           |
| qcl-InfoPeriodicCSI-RS                       | TCI-Stateld                      |         |           |
| }  |                                  |         |           |

— *NZP-CSI-RS-Resourceld*

**Table 4.6.3-86: NZP-CSI-RS-Resourceld**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| NZP-CSI-RS-Resourceld                        | 0            |         |           |

— *NZP-CSI-RS-ResourceSet*

**Table 4.6.3-87: NZP-CSI-RS-ResourceSet**

| Derivation Path: TS 38.331 [6], clause 6.3.2   |                          |         |           |
|--|--------------------------|---------|-----------|
| Information Element  | Value/remark             | Comment | Condition |
| NZP-CSI-RS-ResourceSet ::= SEQUENCE {  |                          |         |           |
| nzp-CSI-ResourceSetId  | NZP-CSI-RS-ResourceSetId |         |           |
| nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-Resourceld { | 1 entry                  |         |           |
| NZP-CSI-RS-Resourceld[1]   | NZP-CSI-RS-Resourceld    | entry 1 |           |
| }  |                          |         |           |
| repetition   | off                      |         |           |
|  | Not present              |         | TRS       |
| aperiodicTriggeringOffset  | Not present              |         |           |
| trs-Info   | Not present              |         |           |
|  | true                     |         | TRS       |
| }  |                          |         |           |

| Condition | Explanation               |
|-----------|---------------------------|
| TRS       | Tracking-Reference Signal |

– *NZP-CSI-RS-ResourceSetId*

**Table 4.6.3-88: NZP-CSI-RS-ResourceSetId**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| NZP-CSI-RS-ResourceSetId                     | 0            |         |           |

– *P-Max*

**Table 4.6.3-89: P-Max**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |  |                                 |
|--|--------------|--|---------------------------------|
| Information Element                          | Value/remark | Comment  | Condition                       |
| P-Max  | 23           |  | FR1 AND pc_dynamic PowerSharing |
|  | 23           |  | FR1_RF_P C2_Testing_PC3         |
|  | Not present  |  | FR1_RF_P C3                     |
|  | Not present  |  | FR1_RF_P C2                     |
|  | 26           |  | FR2 AND pc_dynamic PowerSharing |
|  | 20           | P-Max value when pc_dynamicPower Sharing is set to FALSE | NOT pc_dynamic PowerSharing     |

| Condition              | Explanation  |
|------------------------|--|
| FR1_RF_PC3             | Power Class 3 UE testing Power Class 3 requirements  |
| FR1_RF_PC2             | Power Class 2 UE testing Power Class 2 requirements  |
| FR1_RF_PC2_Testing_PC3 | Power Class 2 UE testing Power Class 3 requirements. |

– *PCI-List*

**Table 4.6.3-90: PCI-List**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PCI-List ::= SEQUENCE {                      |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *PCI-Range*

**Table 4.6.3-91: *PCI-Range***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PCI-Range ::= SEQUENCE {                     |              |         |           |
| start  | PhysCellId   |         |           |
| range  | FFS          |         |           |
| }  |              |         |           |

— *PCI-RangeElement*

**Table 4.6.3-92: *PCI-RangeElement***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PCI-RangeElement ::= SEQUENCE {              |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *PCI-RangeIndex*

**Table 4.6.3-93: *PCI-RangeIndex***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PCI-RangeIndex                               | 0            |         |           |

— *PCI-RangeIndexList*

**Table 4.6.3-94: *PCI-RangeIndexList***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PCI-RangeIndexList ::= SEQUENCE {            |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *PDCCH-Config***Table 4.6.3-95: PDCCH-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.2                                    |                                   |         |           |
|---|-----------------------------------|---------|-----------|
| Information Element   | Value/remark                      | Comment | Condition |
| PDCCH-Config ::= SEQUENCE {   |                                   |         |           |
| controlResourceSetToAddModList  | Not present                       |         | EN-DC     |
| controlResourceSetToAddModList<br>SEQUENCE(SIZE (1..3)) OF ControlResourceSet { | 1 entry                           |         |           |
| ControlResourceSet[1]   | ControlResourceSet                | entry 1 |           |
| }   |                                   |         |           |
| controlResourceSetToReleaseList   | Not present                       |         |           |
| searchSpacesToAddModList SEQUENCE(SIZE (1..10)) OF SearchSpace {                | 1 entry                           |         |           |
| SearchSpace[1]  | SearchSpace with<br>condition USS | entry 1 |           |
| }   |                                   |         |           |
| searchSpacesToReleaseList   | Not present                       |         |           |
| downlinkPreemption  | Not present                       |         |           |
| tpc-PUSCH   | Not present                       |         |           |
| tpc-PUCCH   | Not present                       |         |           |
| tpc-SRS   | Not present                       |         |           |
| }   |                                   |         |           |

— *PDCCH-ConfigCommon*

**Table 4.6.3-96: PDCCH-ConfigCommon**

| Derivation Path: TS 38.331 [6], clause 6.3.2                     |  |         |                         |
|--|--|---------|-------------------------|
| Information Element  | Value/remark                                     | Comment | Condition               |
| PDCCH-ConfigCommon ::= SEQUENCE {                                |  |         |                         |
| controlResourceSetZero   | ControlResourceSetZero<br>Not present            |         | SCell_Add<br>InitialBWP |
| commonControlResourceSet   | ControlResourceSet<br>Not present                |         | EN-DC                   |
| searchSpaceZero  | SearchSpaceZero<br>Not present                   |         | SCell_Add<br>InitialBWP |
| commonSearchSpaceList SEQUENCE (SIZE (1..4))<br>OF SearchSpace { | 2 entries  |         |                         |
| SearchSpace[1]   | SearchSpace with condition CSS                   | entry 1 |                         |
| SearchSpace[2]   | SearchSpace with condition SISS                  | entry 2 |                         |
| }  |  |         |                         |
| commonSearchSpaceList SEQUENCE (SIZE (1..4))<br>OF SearchSpace { | 1 entry  |         | EN-DC                   |
| SearchSpace[1]   | SearchSpace with condition CSS                   | entry 1 |                         |
| }  |  |         |                         |
| commonSearchSpaceList  | Not present                                      |         | SCell_Add               |
| searchSpaceSIB1  | 0<br>Not present                                 |         | EN-DC,<br>SCell_Add     |
| searchSpaceOtherSystemInformation                                | SearchSpaceld with condition SISS<br>Not present |         | EN-DC,<br>SCell_Add     |
| pagingSearchSpace  | 0<br>Not present                                 |         | EN-DC,<br>SCell_Add     |
| ra-SearchSpace   | SearchSpaceld with condition CSS<br>Not present  |         | SCell_Add               |
| }  |  |         |                         |

| Condition  | Explanation   |
|------------|---|
| EN-DC      | E-UTRA-NR Dual Connectivity                             |
| SCell_Add  | Add SCell   |
| InitialBWP | Configured via DownlinkConfigCommonSIB or in other BWPs |

— *PDCCH-ConfigSIB1*

**Table 4.6.3-97: PDCCH-ConfigSIB1**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                        |         |           |
|--|------------------------|---------|-----------|
| Information Element                          | Value/remark           | Comment | Condition |
| PDCCH-ConfigSIB1 ::= SEQUENCE {              |                        |         |           |
| controlResourceSetZero                       | ControlResourceSetZero |         |           |
| searchSpaceZero                              | SearchSpaceZero        |         |           |
| }  |                        |         |           |

– *PDCCH-ServingCellConfig*

**Table 4.6.3-98: PDCCH-ServingCellConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PDCCH-ServingCellConfig ::= SEQUENCE {       |              |         |           |
| slotFormatIndicator                          | Not present  |         |           |
| }  |              |         |           |

– *PDCP-Config*

**Table 4.6.3-99: PDCP-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                        |               |                                   |
|--|------------------------|---------------|-----------------------------------|
| Information Element                          | Value/remark           | Comment       | Condition                         |
| PDCP-Config ::= SEQUENCE {                   |                        |               |                                   |
| drb SEQUENCE {                               |                        |               |                                   |
| discardTimer                                 | infinity               |               |                                   |
| pdcp-SN-Size-UL                              | len18bits              |               |                                   |
| pdcp-SN-Size-DL                              | len18bits              |               |                                   |
| headerCompression CHOICE {                   |                        |               |                                   |
| notUsed                                      | NULL                   |               |                                   |
| }  |                        |               |                                   |
| integrityProtection                          | Not present            |               |                                   |
| statusReportRequired                         | true                   | AM is default |                                   |
|  | Not present            |               | UM                                |
| outOfOrderDelivery                           | Not present            |               |                                   |
| }  |                        |               |                                   |
| drb  | Not present            |               | SRB,<br>Split_SRBC                |
| moreThanOneRLC                               | Not present            |               |                                   |
| moreThanOneRLC SEQUENCE {                    |                        |               | Split,<br>Split_SRBC,<br>NR_split |
| primaryPath SEQUENCE {                       |                        |               |                                   |
| cellGroup                                    | CellGroupId            |               |                                   |
|  | 0                      | MCG path      | Split_SRBC,<br>NR_split           |
| logicalChannel                               | LogicalChannelIdentity |               |                                   |
| }  |                        |               |                                   |
| ul-DataSplitThreshold                        | infinity               |               |                                   |
|  | Not present            |               | Split_SRBC                        |
| pdcp-Duplication                             | false                  |               |                                   |
|  | Not present            | one UL path   | Split_SRBC                        |
| }  |                        |               |                                   |
| t-Reordering                                 | Not present            |               |                                   |
| }  |                        |               |                                   |

| Condition  | Explanation                |
|------------|----------------------------|
| Split      | More than one RLC          |
| SRB        | SRB                        |
| UM         | RLC UM DRB                 |
| Split_SRBC | SRB with more than one RLC |
| NR_split   | MCG and split for NR-DC.   |

– *PDSCH-Config***Table 4.6.3-100: PDSCH-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.2                                |  |                   |                |
|---|--|-------------------|----------------|
| Information Element   | Value/remark                                       | Comment           | Condition      |
| PDSCH-Config ::= SEQUENCE {   |  |                   |                |
| dataScramblingIdentityPDSCH   | 0  |                   |                |
| dmrs-DownlinkForPDSCH-MappingTypeA CHOICE {                                 |  |                   |                |
| setup   | DMRS-DownlinkConfig                                |                   |                |
| }   |  |                   |                |
| dmrs-DownlinkForPDSCH-MappingTypeB  | Not present  |                   |                |
| tci-StatesToAddModList SEQUENCE(SIZE (1..maxNrofTCI-States)) OF TCI-State { | 1 entry  |                   |                |
| TCI-State[1]  | TCI-State  | entry 1           |                |
| }   |  |                   |                |
| tci-StatesToReleaseList   | Not present  |                   |                |
| vrb-ToPRB-Interleaver   | Not present  |                   |                |
| resourceAllocation  | resourceAllocationType1<br>resourceAllocationType0 |                   | Used_for_Type0 |
| pdsch-TimeDomainAllocationList  | Not present  |                   |                |
| pdsch-AggregationFactor   | Not present  |                   |                |
| rateMatchPatternToAddModList  | Not present  |                   |                |
| rateMatchPatternToReleaseList   | Not present  |                   |                |
| rateMatchPatternGroup1  | Not present  |                   |                |
| rateMatchPatternGroup2  | Not present  |                   |                |
| rbg-Size  | config1  |                   |                |
| mcs-Table   | Not present  | qam64 per default |                |
| maxNrofCodeWordsScheduledByDCI  | Not present  |                   |                |
| prb-BundlingType CHOICE {   |  |                   |                |
| staticBundling SEQUENCE {   |  |                   |                |
| bundleSize  | wideband   |                   |                |
| }   |  |                   |                |
| }   |  |                   |                |
| zp-CSI-RS-ResourceToAddModList  | Not present  |                   |                |
| zp-CSI-RS-ResourceToReleaseList   | Not present  |                   |                |
| aperiodic-ZP-CSI-RS-ResourceSetsToAddModList                                | Not present  |                   |                |
| aperiodic-ZP-CSI-RS-ResourceSetsToReleaseList                               | Not present  |                   |                |
| sp-ZP-CSI-RS-ResourceSetsToAddModList                                       | Not present  |                   |                |
| sp-ZP-CSI-RS-ResourceSetsToReleaseList                                      | Not present  |                   |                |
| p-ZP-CSI-RS-ResourceSet   | Not present  |                   |                |
| }   |  |                   |                |

| Condition      | Explanation                        |
|----------------|------------------------------------|
| Used_for_Type0 | Used for RF performance test cases |

– *PDSCH-ConfigCommon***Table 4.6.3-101: PDSCH-ConfigCommon**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |         |           |
|--|--|---------|-----------|
| Information Element                          | Value/remark                           | Comment | Condition |
| PDSCH-ConfigCommon ::= SEQUENCE {            |  |         |           |
| pdsch-TimeDomainAllocationList               | PDSCH-TimeDomainResourceAllocationList |         |           |
| }  |  |         |           |

— *PDSCH-ServingCellConfig*

**Table 4.6.3-102: PDSCH-ServingCellConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |                                 |           |
|--|--------------|---------------------------------|-----------|
| Information Element                          | Value/remark | Comment                         | Condition |
| PDSCH-ServingCellConfig ::= SEQUENCE {       |              |                                 |           |
| codeBlockGroupTransmission                   | Not present  |                                 |           |
| xOverhead                                    | Not present  |                                 |           |
| nrofHARQ-ProcessesForPDSCH                   | n16          |                                 |           |
|  | Not present  | Default value: 8 HARQ processes | SIG       |
| pucch-Cell                                   | Not present  |                                 |           |
| }  |              |                                 |           |

— *PDSCH-TimeDomainResourceAllocationList*

**Table 4.6.3-103: PDSCH-TimeDomainResourceAllocationList**

| Derivation Path: TS 38.331 [6], clause 6.3.2  |              |                                 |           |
|---|--------------|---------------------------------|-----------|
| Information Element   | Value/remark | Comment                         | Condition |
| PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE(SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation { | 2 entries    |                                 | FR1       |
| PDSCH-TimeDomainResourceAllocation[1]<br>SEQUENCE {   |              | entry 1                         |           |
| k0  | Not present  |                                 |           |
| mappingType   | typeA        |                                 |           |
| startSymbolAndLength  | 53           | Start symbol(S)=2, Length(L)=12 |           |
| }   |              |                                 |           |
| PDSCH-TimeDomainResourceAllocation[2]<br>SEQUENCE {   |              | entry 2                         |           |
| k0  | Not present  |                                 |           |
| mappingType   | typeA        |                                 |           |
| startSymbolAndLength  | 72           | S=2, L=6                        |           |
| }   |              |                                 |           |
| }   |              |                                 |           |
| PDSCH-TimeDomainResourceAllocationList<br>SEQUENCE (SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation { | 1 entry      |                                 | FR2       |
| PDSCH-TimeDomainResourceAllocation[1]<br>SEQUENCE {   |              | entry 1                         |           |
| k0  | Not present  |                                 |           |
| mappingType   | typeA        |                                 |           |
| startSymbolAndLength  | 53           | S=2, L=12                       |           |
| }   |              |                                 |           |
| }   |              |                                 |           |

— *PHR-Config*

**Table 4.6.3-104: PHR-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |                |
|--|--------------|---------|----------------|
| Information Element                          | Value/remark | Comment | Condition      |
| PHR-Config ::= CHOICE {                      |              |         |                |
| setup SEQUENCE {                             |              |         |                |
| phr-PeriodicTimer                            | sf10         |         |                |
| phr-ProhibitTimer                            | sf0          |         |                |
| phr-Tx-PowerFactorChange                     | dB1          |         |                |
| multiplePHR                                  | false        |         |                |
|  | true         |         | MR-DC OR NR-CA |
| dummy  | false        |         |                |
| Phr-Type2OtherCell                           | false        |         |                |
| phr-ModeOtherCG                              | real         |         |                |
| }  |              |         |                |
| }  |              |         |                |

| Condition | Explanation                     |
|-----------|---------------------------------|
| MR-DC     | EN-DC, NGEN-DC, NE-DC or NR-DC. |
| NR-CA     | UL CA for NR                    |

— *PhysCellId*

**Table 4.6.3-105: PhysCellId**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |         |           |
|--|---|---------|-----------|
| Information Element                          | Value/remark                                    | Comment | Condition |
| PhysCellId                                   | Set according to table 4.4.2-2 for the NR Cell. |         |           |

— *PhysicalCellGroupConfig*

**Table 4.6.3-106: PhysicalCellGroupConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                |         |           |
|--|----------------|---------|-----------|
| Information Element                          | Value/remark   | Comment | Condition |
| PhysicalCellGroupConfig ::= SEQUENCE {       |                |         |           |
| harq-ACK-SpatialBundlingPUCCH                | Not present    |         |           |
| harq-ACK-SpatialBundlingPUSCH                | Not present    |         |           |
| p-NR-FR1                                     | P-Max          |         |           |
| pdsch-HARQ-ACK-Codebook                      | dynamic        |         |           |
| tpc-SRS-RNTI                                 | Not present    |         |           |
| tpc-PUCCH-RNTI                               | Not present    |         |           |
| tpc-PUSCH-RNTI                               | Not present    |         |           |
| sp-CSI-RNTI                                  | Not present    |         |           |
| cs-RNTI                                      | Not present    |         |           |
| dcp-Config-r16                               | Not present    |         |           |
| dcp-Config-r16 CHOICE {                      |                |         | DCP       |
| setup  | DCP-Config-r16 |         |           |
| }  |                |         |           |
| }  |                |         |           |

| Condition | Explanation                                   |
|-----------|---|
| DCP       | This condition applies when DCP is configured |

— *PLMN-Identity*

**Table 4.6.3-107: PLMN-Identity**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                   |         |           |
|--|-------------------|---------|-----------|
| Information Element                          | Value/remark      | Comment | Condition |
| PLMN-Identity ::= SEQUENCE {                 |                   |         |           |
| mcc SEQUENCE (SIZE (3)) OF MCC-MNC-Digit     | See table 4.4.2-3 |         |           |
| mnc SEQUENCE (SIZE (2..3)) OF MCC-MNC-Digit  | See table 4.4.2-3 |         |           |
| }  |                   |         |           |

— *PLMN-IdentityInfoList*

**Table 4.6.3-108: PLMN-IdentityInfoList**

| Derivation Path: TS 38.331 [6], clause 6.3.2                                  |                  |         |           |
|---|------------------|---------|-----------|
| Information Element   | Value/remark     | Comment | Condition |
| PLMN-IdentityInfoList ::= SEQUENCE (SIZE (1..maxPLMN)) OF PLMN-IdentityInfo { | 1 entry          |         |           |
| PLMN-IdentityInfo[1] SEQUENCE {   |                  | entry 1 |           |
| plmn-IdentityList SEQUENCE (SIZE (1..maxPLMN)) OF PLMN-Identity {             | 1 entry          |         |           |
| PLMN-Identity[1]  | PLMN-Identity    | entry 1 |           |
| }   |                  |         |           |
| trackingAreaCode  | TrackingAreaCode |         |           |
| ranac   | RAN-AreaCode     |         |           |
| cellIdentity  | CellIdentity     |         |           |
| cellReservedForOperatorUse  | notReserved      |         |           |
| }   |                  |         |           |
| }   |                  |         |           |

— *PLMN-IdentityList2*

**Table 4.6.3-108A: PLMN-IdentityList2**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PLMN-IdentityList2-r16 ::= SEQUENCE {        |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *PRB-Id*

**Table 4.6.3-109: PRB-Id**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |         |                  |
|--|--|---------|------------------|
| Information Element                          | Value/remark   | Comment | Condition        |
| PRB-Id                                       | 0<br>Set to value of the $L\_RBs$<br>- $nrofPRBs$ where $L\_RBs$<br>is found in Table<br>4.3.1.0D-1 or Table<br>4.3.1.0D-2 for the<br>bandwidth and SCS<br>configured and $nrofPRBs$<br>is defined for the<br>corresponding <i>PUCCH-Resource</i> (1 otherwise). |         | secondHop<br>PRB |

| Condition    | Explanation                                       |
|--------------|---|
| secondHopPRB | The IE secondHopPRB in PUCCH-Resource is now set. |

– *PTRS-DownlinkConfig*

**Table 4.6.3-110: PTRS-DownlinkConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PTRS-DownlinkConfig ::= SEQUENCE {           |              |         |           |
| frequencyDensity                             | Not present  |         |           |
| timeDensity                                  | Not present  |         |           |
| epre-Ratio                                   | 0            |         |           |
| resourceElementOffset                        | Not present  |         |           |
| }  |              |         |           |

– *PTRS-UplinkConfig*

**Table 4.6.3-111: PTRS-UplinkConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2   |              |         |           |
|--|--------------|---------|-----------|
| Information Element                            | Value/remark | Comment | Condition |
| PTRS-UplinkConfig ::= SEQUENCE {               |              |         |           |
| transformPrecoderDisabled SEQUENCE {           |              |         |           |
| frequencyDensity                               | Not present  |         |           |
| timeDensity                                    | Not present  |         |           |
| maxNrofPorts                                   | n1           |         |           |
| resourceElementOffset                          | Not present  |         |           |
| ptrs-Power                                     | p00          |         |           |
| }  |              |         |           |
| transformPrecoderEnabled SEQUENCE {            |              |         |           |
| sampleDensity SEQUENCE (SIZE (5)) OF INTEGER { | 5 entries    |         |           |
| INTEGER[1]                                     | 1            | entry 1 |           |
| INTEGER[2]                                     | 8            | entry 2 |           |
| INTEGER[3]                                     | 32           | entry 3 |           |
| INTEGER[4]                                     | 32           | entry 4 |           |
| INTEGER[5]                                     | 108          | entry 5 |           |
| }  |              |         |           |
| timeDensityTransformPrecoding                  | Not present  |         |           |
| }  |              |         |           |
| }  |              |         |           |

— *PUCCH-Config*

**Table 4.6.3-112: PUCCH-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.2  |                                    |         |           |
|---|------------------------------------|---------|-----------|
| Information Element   | Value/remark                       | Comment | Condition |
| PUCCH-Config ::= SEQUENCE {   |                                    |         |           |
| resourceSetToAddModList SEQUENCE (SIZE (1..maxNrofPUCCH-ResourceSets)) OF PUCCH-ResourceSet { | 2 entries                          |         |           |
| PUCCH-ResourceSet[1] SEQUENCE {   |                                    | entry 1 |           |
| pucch-ResourceId  | 0                                  |         |           |
| resourceList SEQUENCE (SIZE (0..maxNrofPUCCH-ResourcesPerSet)) OF PUCCH-ResourceId {          | 8 entries                          |         |           |
| PUCCH-ResourceId[1]   | 0                                  | entry 1 |           |
| PUCCH-ResourceId[2]   | 1                                  | entry 2 |           |
| PUCCH-ResourceId[3]   | 2                                  | entry 3 |           |
| PUCCH-ResourceId[4]   | 3                                  | entry 4 |           |
| PUCCH-ResourceId[5]   | 4                                  | entry 5 |           |
| PUCCH-ResourceId[6]   | 5                                  | entry 6 |           |
| PUCCH-ResourceId[7]   | 6                                  | entry 7 |           |
| PUCCH-ResourceId[8]   | 7                                  | entry 8 |           |
| }   |                                    |         |           |
| maxPayloadSize  | Not present                        |         |           |
| }   |                                    |         |           |
| PUCCH-ResourceSet[2] SEQUENCE {   |                                    | entry 2 |           |
| pucch-ResourceId  | 1                                  |         |           |
| resourceList SEQUENCE (SIZE (8..maxNrofPUCCH-ResourcesPerSet)) OF PUCCH-ResourceId {          | 8 entries                          |         |           |
| PUCCH-ResourceId[1]   | 8                                  | entry 1 |           |
| PUCCH-ResourceId[2]   | 9                                  | entry 2 |           |
| PUCCH-ResourceId[3]   | 10                                 | entry 3 |           |
| PUCCH-ResourceId[4]   | 11                                 | entry 4 |           |
| PUCCH-ResourceId[5]   | 12                                 | entry 5 |           |
| PUCCH-ResourceId[6]   | 13                                 | entry 6 |           |
| PUCCH-ResourceId[7]   | 14                                 | entry 7 |           |
| PUCCH-ResourceId[8]   | 15                                 | entry 8 |           |
| }   |                                    |         |           |
| maxPayloadSize  | Not present                        |         |           |
| }   |                                    |         |           |
| }   |                                    |         |           |
| resourceSetToReleaseList  | Not present                        |         |           |
| resourceToAddModList SEQUENCE (SIZE (1..maxNrofPUCCH-Resources)) OF PUCCH-Resource {          | 16 entries                         |         |           |
| PUCCH-Resource[1] SEQUENCE {  |                                    | entry 1 |           |
| pucch-ResourceId  | 0                                  |         |           |
| startingPRB   | PRB-Id                             |         |           |
| intraSlotFrequencyHopping   | enabled                            |         |           |
| secondHopPRB  | PRB-Id with condition secondHopPRB |         |           |
| format CHOICE {   |                                    |         |           |
| format0 SEQUENCE {  |                                    |         |           |
| initialCyclicShift  | 0                                  |         |           |
| nrofSymbols   | 2                                  |         |           |
| startingSymbolIndex   | 0                                  |         |           |
| }   |                                    |         |           |
| }   |                                    |         |           |
| }   |                                    |         |           |
| PUCCH-Resource[2] SEQUENCE {  |                                    | entry 2 |           |
| pucch-ResourceId  | 1                                  |         |           |
| startingPRB   | PRB-Id                             |         |           |
| intraSlotFrequencyHopping   | enabled                            |         |           |

|                              |                                    |         |  |
|------------------------------|------------------------------------|---------|--|
| secondHopPRB                 | PRB-Id with condition secondHopPRB |         |  |
| format CHOICE {              |                                    |         |  |
| format0 SEQUENCE {           |                                    |         |  |
| initialCyclicShift           | 0                                  |         |  |
| nrofSymbols                  | 2                                  |         |  |
| startingSymbolIndex          | 2                                  |         |  |
| }                            |                                    |         |  |
| }                            |                                    |         |  |
| }                            |                                    |         |  |
| PUCCH-Resource[3] SEQUENCE { |                                    | entry 3 |  |
| pucch-Resourceld             | 2                                  |         |  |
| startingPRB                  | PRB-Id                             |         |  |
| intraSlotFrequencyHopping    | enabled                            |         |  |
| secondHopPRB                 | PRB-Id with condition secondHopPRB |         |  |
| format CHOICE {              |                                    |         |  |
| format0 SEQUENCE {           |                                    |         |  |
| initialCyclicShift           | 0                                  |         |  |
| nrofSymbols                  | 2                                  |         |  |
| startingSymbolIndex          | 4                                  |         |  |
| }                            |                                    |         |  |
| }                            |                                    |         |  |
| }                            |                                    |         |  |
| PUCCH-Resource[4] SEQUENCE { |                                    | entry 4 |  |
| pucch-Resourceld             | 3                                  |         |  |
| startingPRB                  | PRB-Id                             |         |  |
| intraSlotFrequencyHopping    | enabled                            |         |  |
| secondHopPRB                 | PRB-Id with condition secondHopPRB |         |  |
| format CHOICE {              |                                    |         |  |
| format0 SEQUENCE {           |                                    |         |  |
| initialCyclicShift           | 0                                  |         |  |
| nrofSymbols                  | 2                                  |         |  |
| startingSymbolIndex          | 6                                  |         |  |
| }                            |                                    |         |  |
| }                            |                                    |         |  |
| }                            |                                    |         |  |
| PUCCH-Resource[5] SEQUENCE { |                                    | entry 5 |  |
| pucch-Resourceld             | 4                                  |         |  |
| startingPRB                  | PRB-Id                             |         |  |
| intraSlotFrequencyHopping    | enabled                            |         |  |
| secondHopPRB                 | PRB-Id with condition secondHopPRB |         |  |
| format CHOICE {              |                                    |         |  |
| format0 SEQUENCE {           |                                    |         |  |
| initialCyclicShift           | 0                                  |         |  |
| nrofSymbols                  | 2                                  |         |  |
| startingSymbolIndex          | 8                                  |         |  |
| }                            |                                    |         |  |
| }                            |                                    |         |  |
| }                            |                                    |         |  |
| PUCCH-Resource[6] SEQUENCE { |                                    | entry 6 |  |
| pucch-Resourceld             | 5                                  |         |  |
| startingPRB                  | PRB-Id                             |         |  |
| intraSlotFrequencyHopping    | enabled                            |         |  |
| secondHopPRB                 | PRB-Id with condition secondHopPRB |         |  |
| format CHOICE {              |                                    |         |  |
| format0 SEQUENCE {           |                                    |         |  |
| initialCyclicShift           | 0                                  |         |  |
| nrofSymbols                  | 2                                  |         |  |
| startingSymbolIndex          | 10                                 |         |  |
| }                            |                                    |         |  |
| }                            |                                    |         |  |
| }                            |                                    |         |  |

|                               |                                       |          |  |
|-------------------------------|---------------------------------------|----------|--|
| PUCCH-Resource[7] SEQUENCE {  |                                       | entry 7  |  |
| pucch-Resourceld              | 6                                     |          |  |
| startingPRB                   | PRB-Id                                |          |  |
| intraSlotFrequencyHopping     | enabled                               |          |  |
| secondHopPRB                  | PRB-Id with condition<br>secondHopPRB |          |  |
| format CHOICE {               |                                       |          |  |
| format0 SEQUENCE {            |                                       |          |  |
| initialCyclicShift            | 0                                     |          |  |
| nrofSymbols                   | 2                                     |          |  |
| startingSymbolIndex           | 12                                    |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| PUCCH-Resource[8] SEQUENCE {  |                                       | entry 8  |  |
| pucch-Resourceld              | 7                                     |          |  |
| startingPRB                   | PRB-Id                                |          |  |
| intraSlotFrequencyHopping     | enabled                               |          |  |
| secondHopPRB                  | PRB-Id with condition<br>secondHopPRB |          |  |
| format CHOICE {               |                                       |          |  |
| format1 SEQUENCE {            |                                       |          |  |
| initialCyclicShift            | 0                                     |          |  |
| nrofSymbols                   | 14                                    |          |  |
| startingSymbolIndex           | 0                                     |          |  |
| timeDomainOCC                 | 0                                     |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| PUCCH-Resource[9] SEQUENCE {  |                                       | entry 9  |  |
| pucch-Resourceld              | 8                                     |          |  |
| startingPRB                   | PRB-Id                                |          |  |
| intraSlotFrequencyHopping     | enabled                               |          |  |
| secondHopPRB                  | PRB-Id with condition<br>secondHopPRB |          |  |
| format CHOICE {               |                                       |          |  |
| format2 SEQUENCE {            |                                       |          |  |
| nrofPRBs                      | 6                                     |          |  |
| nrofSymbols                   | 2                                     |          |  |
| startingSymbolIndex           | 0                                     |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| PUCCH-Resource[10] SEQUENCE { |                                       | entry 10 |  |
| pucch-Resourceld              | 9                                     |          |  |
| startingPRB                   | PRB-Id                                |          |  |
| intraSlotFrequencyHopping     | enabled                               |          |  |
| secondHopPRB                  | PRB-Id with condition<br>secondHopPRB |          |  |
| format CHOICE {               |                                       |          |  |
| format2 SEQUENCE {            |                                       |          |  |
| nrofPRBs                      | 6                                     |          |  |
| nrofSymbols                   | 2                                     |          |  |
| startingSymbolIndex           | 2                                     |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| PUCCH-Resource[11] SEQUENCE { |                                       | entry 11 |  |
| pucch-Resourceld              | 10                                    |          |  |
| startingPRB                   | PRB-Id                                |          |  |
| intraSlotFrequencyHopping     | enabled                               |          |  |
| secondHopPRB                  | PRB-Id with condition<br>secondHopPRB |          |  |
| format CHOICE {               |                                       |          |  |
| format2 SEQUENCE {            |                                       |          |  |
| nrofPRBs                      | 6                                     |          |  |

|                               |                                       |          |  |
|-------------------------------|---------------------------------------|----------|--|
| nrofSymbols                   | 2                                     |          |  |
| startingSymbolIndex           | 4                                     |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| PUCCH-Resource[12] SEQUENCE { |                                       | entry 12 |  |
| pucch-Resourceld              | 11                                    |          |  |
| startingPRB                   | PRB-Id                                |          |  |
| intraSlotFrequencyHopping     | enabled                               |          |  |
| secondHopPRB                  | PRB-Id with condition<br>secondHopPRB |          |  |
| format CHOICE {               |                                       |          |  |
| format2 SEQUENCE {            |                                       |          |  |
| nrofPRBs                      | 6                                     |          |  |
| nrofSymbols                   | 2                                     |          |  |
| startingSymbolIndex           | 6                                     |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| PUCCH-Resource[13] SEQUENCE { |                                       | entry 13 |  |
| pucch-Resourceld              | 12                                    |          |  |
| startingPRB                   | PRB-Id                                |          |  |
| intraSlotFrequencyHopping     | enabled                               |          |  |
| secondHopPRB                  | PRB-Id with condition<br>secondHopPRB |          |  |
| format CHOICE {               |                                       |          |  |
| format2 SEQUENCE {            |                                       |          |  |
| nrofPRB                       | 6                                     |          |  |
| nrofSymbols                   | 2                                     |          |  |
| startingSymbolIndex           | 8                                     |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| PUCCH-Resource[14] SEQUENCE { |                                       | entry 14 |  |
| pucch-Resourceld              | 13                                    |          |  |
| startingPRB                   | PRB-Id                                |          |  |
| intraSlotFrequencyHopping     | enabled                               |          |  |
| secondHopPRB                  | PRB-Id with condition<br>secondHopPRB |          |  |
| format CHOICE {               |                                       |          |  |
| format2 SEQUENCE {            |                                       |          |  |
| nrofPRBsinitial               | 6                                     |          |  |
| nrofSymbols                   | 2                                     |          |  |
| startingSymbolIndex           | 10                                    |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| PUCCH-Resource[15] SEQUENCE { |                                       | entry 15 |  |
| pucch-Resourceld              | 14                                    |          |  |
| startingPRB                   | PRB-Id                                |          |  |
| intraSlotFrequencyHopping     | enabled                               |          |  |
| secondHopPRB                  | PRB-Id with condition<br>secondHopPRB |          |  |
| format CHOICE {               |                                       |          |  |
| format2 SEQUENCE {            |                                       |          |  |
| nrofPRB                       | 6                                     |          |  |
| nrofSymbols                   | 2                                     |          |  |
| startingSymbolIndex           | 12                                    |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| }                             |                                       |          |  |
| PUCCH-Resource[16] SEQUENCE { |                                       | entry 16 |  |
| pucch-Resourceld              | 15                                    |          |  |
| startingPRB                   | PRB-Id                                |          |  |
| intraSlotFrequencyHopping     | enabled                               |          |  |
| secondHopPRB                  | PRB-Id with condition                 |          |  |

|   |                                 |         |  |
|---|---------------------------------|---------|--|
|   | secondHopPRB                    |         |  |
| format CHOICE {   |                                 |         |  |
| format3 SEQUENCE {  |                                 |         |  |
| nrofPRBs  | 1                               |         |  |
| nrofSymbols   | 14                              |         |  |
| startingSymbolIndex   | 0                               |         |  |
| }   |                                 |         |  |
| }   |                                 |         |  |
| }   |                                 |         |  |
| }   |                                 |         |  |
| resourceToReleaseList   | Not present                     |         |  |
| format1CHOICE {   |                                 |         |  |
| setup SEQUENCE {  |                                 |         |  |
| interslotFrequencyHopping   | enabled                         |         |  |
| additionalDMRS  | Not Present                     |         |  |
| maxCodeRate   | Not Present                     |         |  |
| nrofSlots   | Not present                     |         |  |
| pi2BPSK   | Not present                     |         |  |
| simultaneousHARQ-ACK-CSI  | Not Present                     |         |  |
| }   |                                 |         |  |
| }   |                                 |         |  |
| format2 CHOICE {  |                                 |         |  |
| setup SEQUENCE {  |                                 |         |  |
| interslotFrequencyHopping   | Not Present                     |         |  |
| additionalDMRS  | Not Present                     |         |  |
| maxCodeRate   | zeroDot25                       |         |  |
| nrofSlots   | Not present                     |         |  |
| pi2BPSK   | Not present                     |         |  |
| simultaneousHARQ-ACK-CSI  | True                            |         |  |
| }   |                                 |         |  |
| }   |                                 |         |  |
| format3 CHOICE {  |                                 |         |  |
| setup SEQUENCE {  |                                 |         |  |
| interslotFrequencyHopping   | enabled                         |         |  |
| additionalDMRS  | True                            |         |  |
| maxCodeRate   | zeroDot25                       |         |  |
| nrofSlots   | Not present                     |         |  |
| pi2BPSK   | Not present                     |         |  |
| simultaneousHARQ-ACK-CSI  | true                            |         |  |
| }   |                                 |         |  |
| }   |                                 |         |  |
| format4   | Not present                     |         |  |
| schedulingRequestResourceToAddModList<br>SEQUENCE (SIZE (1..maxNrofSR-Resources)) OF<br>SchedulingRequestResourceConfig { | 1 entry                         |         |  |
| SchedulingRequestResourceConfig[1]  | SchedulingRequestResourceConfig | entry 1 |  |
| }   |                                 |         |  |
| schedulingRequestResourceToReleaseList  | Not present                     |         |  |
| multi-CSI-PUCCH-ResourceList  | Not present                     |         |  |
| dl-DataToUL-ACK SEQUENCE (SIZE (1..8)) OF<br>INTEGER {  | 8 entries                       |         |  |
| INTEGER[1]  | 2                               | entry 1 |  |
| INTEGER[2]  | 3                               | entry 2 |  |
| INTEGER[3]  | 4                               | entry 3 |  |
| INTEGER[4]  | 5                               | entry 4 |  |
| INTEGER[5]  | 6                               | entry 5 |  |
| INTEGER[6]  | 7                               | entry 6 |  |
| INTEGER[7]  | 8                               | entry 7 |  |
| INTEGER[8]  | 9                               | entry 8 |  |
| }   |                                 |         |  |
| spatialRelationInfoToAddModList   | Not present                     |         |  |
| spatialRelationInfoToReleaseList  | Not present                     |         |  |
| pucch-PowerControl  | PUCCH-PowerControl              |         |  |
| }   |                                 |         |  |

— *PUCCH-ConfigCommon*

**Table 4.6.3-113: PUCCH-ConfigCommon**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PUCCH-ConfigCommon ::= SEQUENCE {            |              |         |           |
| pucch-ResourceCommon                         | 0            |         |           |
| pucch-GroupHopping                           | enable       |         |           |
| hoppingId                                    | Not present  |         |           |
| p0-nominal                                   | -90          |         |           |
| }  |              |         |           |

— *PUCCH-ConfigurationList*

**Table 4.6.3-113A: PUCCH-ConfigurationList**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PUCCH-ConfigurationList-r16 ::= SEQUENCE {   |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *PUCCH-PathlossReferenceRS-Id*

**Table 4.6.3-114: PUCCH-PathlossReferenceRS-Id**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PUCCH-PathlossReferenceRS-Id                 | 0            |         |           |

– *PUCCH-PowerControl*

**Table 4.6.3-115: PUCCH-PowerControl**

| Derivation Path: TS 38.331 [6], clause 6.3.2   |                              |         |           |
|--|------------------------------|---------|-----------|
| Information Element  | Value/remark                 | Comment | Condition |
| PUCCH-PowerControl ::= SEQUENCE {  |                              |         |           |
| deltaF-PUCCH-f0  | 0                            |         |           |
| deltaF-PUCCH-f1  | 0                            |         |           |
| deltaF-PUCCH-f2  | 0                            |         |           |
| deltaF-PUCCH-f3  | 0                            |         |           |
| deltaF-PUCCH-f4  | 0                            |         |           |
| p0-Set   | Not present                  |         |           |
| pathlossReferenceRSs SEQUENCE (SIZE (1..maxNrofPUCCH-PathlossReferenceRSs)) OF PUCCH-PathlossReferencers { | 1 entry                      |         |           |
| PUCCH-PathlossReferenceRS[1] SEQUENCE {  |                              | entry 1 |           |
| pucch-PathlossReferenceRS-Id   | PUCCH-PathlossReferenceRS-Id |         |           |
| referenceSignal CHOICE {   |                              |         |           |
| ssb-Index  | SSB-Index                    |         |           |
| }  |                              |         |           |
| }  |                              |         |           |
| }  |                              |         |           |
| twoPUCCH-PC-AdjustmentStates   | Not present                  |         |           |
| }  |                              |         |           |

– *PUCCH-SpatialRelationInfo*

**Table 4.6.3-116: PUCCH-SpatialRelationInfo**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                              |         |           |
|--|------------------------------|---------|-----------|
| Information Element                          | Value/remark                 | Comment | Condition |
| PUCCH-SpatialRelationInfo ::= SEQUENCE {     |                              |         |           |
| pucch-SpatialRelationInfoId                  | 1                            |         |           |
| servingCellId                                | ServCellIndex                |         |           |
| referenceSignal CHOICE {                     |                              |         |           |
| ssb-Index                                    | SSB-Index                    |         |           |
| }  |                              |         |           |
| pucch-PathlossReferenceRS-Id                 | PUCCH-PathlossReferenceRS-Id |         |           |
| p0-PUCCH-Id                                  | 1                            |         |           |
| closedLoopIndex                              | i0                           |         |           |
| }  |                              |         |           |

– *PUCCH-SpatialRelationInfo-Id*

**Table 4.6.3-116A: PUCCH-SpatialRelationInfo-Id**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PUCCH-SpatialRelationInfoId ::= SEQUENCE {   |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *PUCCH-TPC-CommandConfig*

**Table 4.6.3-117: PUCCH-TPC-CommandConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PUCCH-TPC-CommandConfig ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *PUSCH-Config*

**Table 4.6.3-118: PUSCH-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                         |                                     |  |
|--|-------------------------|-------------------------------------|--|
| Information Element                          | Value/remark            | Comment                             | Condition                              |
| PUSCH-Config ::= SEQUENCE {                  |                         |                                     |  |
| dataScramblingIdentityPUSCH                  | Not present             |                                     |  |
| txConfig                                     | Not Present             |                                     | Short_DCI                              |
|  | codebook                |                                     |  |
| dmrs-UplinkForPUSCH-MappingTypeA CHOICE {    |                         |                                     |  |
| setup  | DMRS-UplinkConfig       |                                     |  |
| }  |                         |                                     |  |
| dmrs-UplinkForPUSCH-MappingTypeB             | Not present             |                                     |  |
| pusch-PowerControl                           | PUSCH-PowerControl      |                                     |  |
| frequencyHopping                             | Not present             |                                     |  |
| frequencyHoppingOffsetLists                  | Not present             |                                     |  |
| resourceAllocation                           | resourceAllocationType1 |                                     |  |
| pusch-TimeDomainAllocationList               | Not present             |                                     |  |
| pusch-AggregationFactor                      | Not present             |                                     |  |
| mcs-Table                                    | Not present             |                                     |  |
| mcs-TableTransformPrecoder                   | Not present             |                                     |  |
| transformPrecoder                            | enabled                 |                                     | TRANSFOR<br>M_PRECOD<br>ER_ENABL<br>ED |
|  | Not present             | TRANSFORM_P<br>RECODER_DISA<br>BLED |  |
| codebookSubset                               | Not present             |                                     | Short_DCI                              |
|  | nonCoherent             |                                     |  |
| maxRank                                      | Not present             |                                     | Short_DCI                              |
|  | 1                       |                                     |  |
|  | 2                       |                                     | 2TX_UL_MI<br>MO                        |
| rbg-Size                                     | Not present             |                                     |  |
| uci-OnPUSCH CHOICE {                         |                         |                                     |  |
| setup SEQUENCE {                             |                         |                                     |  |
| betaOffsets CHOICE {                         |                         |                                     |  |
| semiStatic                                   | BetaOffsets             |                                     |  |
| }  |                         |                                     |  |
| scaling                                      | f1                      |                                     |  |
| }  |                         |                                     |  |
| }  |                         |                                     |  |
| tp-pi2BPSK                                   | Not present             |                                     |  |
| }  |                         |                                     |  |

| Condition                  | Explanation   |
|----------------------------|---|
| TRANSFORM_PRECODER_ENABLED | Transform precoding is enabled (DFT-s-OFDM UL waveform is configured) |
| 2TX_UL_MIMO                | UL-MIMO test cases with 2 Tx antenna ports                            |
| Short_DCI                  | Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS       |

– *PUSCH-ConfigCommon*

**Table 4.6.3-119: PUSCH-ConfigCommon**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |         |           |
|--|--|---------|-----------|
| Information Element                          | Value/remark                                   | Comment | Condition |
| PUSCH-ConfigCommon ::= SEQUENCE {            |  |         |           |
| groupHoppingEnabledTransformPrecoding        | Not present                                    |         |           |
| pusch-TimeDomainAllocationList               | PUSCH-<br>TimeDomainResourceAll<br>ocationList |         |           |
| msg3-DeltaPreamble                           | 1  |         |           |
| p0-NominalWithGrant                          | -90  |         |           |
| }  |  |         |           |

— *PUSCH-PowerControl*

**Table 4.6.3-120: PUSCH-PowerControl**

| Derivation Path: TS 38.331 [6], clause 6.3.2  |              |         |           |
|---|--------------|---------|-----------|
| Information Element   | Value/remark | Comment | Condition |
| PUSCH-PowerControl ::= SEQUENCE {   |              |         |           |
| tpc-Accumulation  | Not present  |         |           |
| msg3-Alpha  | alpha08      |         |           |
| p0-NominalWithoutGrant  | -90          |         |           |
| p0-AlphaSets SEQUENCE (SIZE (1..maxNrofP0-PUSCH-AlphaSets)) OF P0-PUSCH-AlphaSet {                                    | 1 entry      |         |           |
| P0-PUSCH-AlphaSet[1] SEQUENCE {   |              | entry 1 |           |
| p0-PUSCH-AlphaSetId   | 0            |         |           |
| p0  | 0            |         |           |
| alpha   | alpha08      |         |           |
| }   |              |         |           |
| }   |              |         |           |
| pathlossReferenceRSToAddModList SEQUENCE (SIZE (1..maxNrofPUSCH-PathlossReferenceRSs)) OF PUSCH-PathlossReferenceRS { | 1 entry      |         |           |
| PUSCH-PathlossReferenceRS[1] SEQUENCE {   |              | entry 1 |           |
| pusch-PathlossReferenceRS-Id  | 0            |         |           |
| referenceSignal CHOICE{   |              |         |           |
| ssb-Index   | SSB-Index    |         |           |
| }   |              |         |           |
| }   |              |         |           |
| }   |              |         |           |
| pathlossReferenceRSToReleaseList  | Not present  |         |           |
| twoPUSCH-PC-AdjustmentStates  | Not present  |         |           |
| deltaMCS  | Not present  |         |           |
| sri-PUSCH-MappingToAddModList SEQUENCE (SIZE (1..maxNrofSRI-PUSCH-Mappings)) OF SRI-PUSCH-PowerControl {              | 1 entry      |         |           |
| SRI-PUSCH-PowerControl[1] SEQUENCE {  |              | entry 1 |           |
| sri-PUSCH-PowerControlld  | 0            |         |           |
| sri-PUSCH-PathlossReferenceRS-Id  | 0            |         |           |
| sri-P0-PUSCH-AlphaSetId   | 0            |         |           |
| sri-PUSCH-ClosedLoopIndex   | i0           |         |           |
| }   |              |         |           |
| }   |              |         |           |
| sri-PUSCH-MappingToReleaseList  | Not present  |         |           |
| }   |              |         |           |

— *PUSCH-ServingCellConfig*

**Table 4.6.3-121: PUSCH-ServingCellConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PUSCH-ServingCellConfig ::= SEQUENCE {       |              |         |           |
| codeBlockGroupTransmission                   | Not present  |         |           |
| rateMatching                                 | Not present  |         |           |
| xOverhead                                    | Not present  |         |           |
| }  |              |         |           |

— *PUSCH-TimeDomainResourceAllocationList*

**Table 4.6.3-122: PUSCH-TimeDomainResourceAllocationList**

| Derivation Path: TS 38.331 [6], clause 6.3.2   |                            |  |                                       |
|--|----------------------------|--|---------------------------------------|
| Information Element  | Value/remark               | Comment  | Condition                             |
| PUSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations)) OF PUSCH-TimeDomainResourceAllocation { | 2 entries                  |  |                                       |
| PUSCH-TimeDomainResourceAllocation[1] SEQUENCE {   |                            | entry 1  |                                       |
| k2   | 4<br>2<br>3<br>6<br>4<br>8 | (RF OR RRM) AND (FR1 AND (SCS15 OR SCS30)) OR (FR2 AND SCS60 AND (DL OR RRM))<br>((RF AND DL) OR RRM) AND FR2 AND SCS120<br>((RF AND DL) OR RRM) AND FR1 AND SCS60<br>RF AND FR2 AND SCS60 AND UL<br>RF_FR2_12 0kHz_UL |                                       |
| mappingType  | typeA                      |  |                                       |
| startSymbolAndLength   | 27                         | Start symbol(S)=0, Length(L)=14  |                                       |
| }  |                            |  |                                       |
| PUSCH-TimeDomainResourceAllocation[2] SEQUENCE {   |                            | entry 2 addressed by Msg3 PUSCH time resource allocation field of the Random Access Response acc. to TS 38.213 [22] Table 8.2-1.   |                                       |
| k2   | Not present<br>2<br>6<br>3 | K2+ Δ=4 acc. to TS 38.214 [21] Table 6.1.2.1.1-5 (NOTE 1)<br>K2+ Δ=9 acc. to TS 38.214 [21] Table 6.1.2.1.1-5 (NOTE 1)<br>K2+ Δ=9 acc. to TS 38.214 [21] Table 6.1.2.1.1-5 (NOTE 1)                                    | FR1 AND SCS15<br>FR1 AND SCS30<br>FR2 |
| mappingType  | typeA                      |  |                                       |
| startSymbolAndLength   | 27                         | Start symbol(S)=0,   |                                       |

|   |  |              |  |
|---|--|--------------|--|
|   |  | Length(L)=14 |  |
| } |  |              |  |
| } |  |              |  |

NOTE 1: Values are chosen so that first slot of a TDD-UL-DL slot configuration period can be used for the Random Access Response and the last slot (of the same or another period) for the corresponding Msg3.

| Condition | Explanation         |
|-----------|---------------------|
| DL        | RF Rx measurements. |
| UL        | RF UL measurements. |

– *PUSCH-TPC-CommandConfig*

**Table 4.6.3-123: PUSCH-TPC-CommandConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PUSCH-TPC-CommandConfig ::= SEQUENCE {       |              |         |           |
| tpc-Index                                    | Not present  |         |           |
| tpc-IndexSUL                                 | Not present  |         |           |
| targetCell                                   | Not present  |         |           |
| }  |              |         |           |

– *Q-OffsetRange*

**Table 4.6.3-124: Q-OffsetRange**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| Q-OffsetRange                                | dB0          |         |           |

– *Q-QualMin*

**Table 4.6.3-125: Q-QualMin**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| Q-QualMin                                    | FFS          |         |           |

– *Q-RxLevMin*

**Table 4.6.3-126: Q-RxLevMin**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| Q-RxLevMin                                   | FFS          |         |           |

— *QuantityConfig*

**Table 4.6.3-127: QuantityConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2   |                   |         |           |
|--|-------------------|---------|-----------|
| Information Element  | Value/remark      | Comment | Condition |
| QuantityConfig ::= SEQUENCE {  |                   |         |           |
| quantityConfigNR-List SEQUENCE (SIZE (1..maxNrofQuantityConfig)) OF QuantityConfigNR { | 2 entries         |         |           |
| QuantityConfigNR[1] SEQUENCE {   |                   | entry 1 |           |
| quantityConfigCell SEQUENCE {  |                   |         |           |
| ssb-FilterConfig SEQUENCE {  |                   |         |           |
| filterCoefficientRSRP  | FilterCoefficient |         |           |
| filterCoefficientRSRQ  | FilterCoefficient |         |           |
| filterCoefficientRS-SINR   | FilterCoefficient |         |           |
| }  |                   |         |           |
| csi-RS-FilterConfig SEQUENCE {   |                   |         |           |
| filterCoefficientRSRP  | FilterCoefficient |         |           |
| filterCoefficientRSRQ  | FilterCoefficient |         |           |
| filterCoefficientRS-SINR   | FilterCoefficient |         |           |
| }  |                   |         |           |
| }  |                   |         |           |
| quantityConfigRS-Index SEQUENCE {  |                   |         |           |
| ssb-FilterConfig SEQUENCE {  |                   |         |           |
| filterCoefficientRSRP  | FilterCoefficient |         |           |
| filterCoefficientRSRQ  | FilterCoefficient |         |           |
| filterCoefficientRS-SINR   | FilterCoefficient |         |           |
| }  |                   |         |           |
| csi-RS-FilterConfig SEQUENCE {   |                   |         |           |
| filterCoefficientRSRP  | FilterCoefficient |         |           |
| filterCoefficientRSRQ  | FilterCoefficient |         |           |
| filterCoefficientRS-SINR   | FilterCoefficient |         |           |
| }  |                   |         |           |
| }  |                   |         |           |
| }  |                   |         |           |
| QuantityConfigNR[2] SEQUENCE {   |                   | entry 2 |           |
| quantityConfigCell SEQUENCE {  |                   |         |           |
| ssb-FilterConfig SEQUENCE {  |                   |         |           |
| filterCoefficientRSRP  | FilterCoefficient |         |           |
| filterCoefficientRSRQ  | FilterCoefficient |         |           |
| filterCoefficientRS-SINR   | FilterCoefficient |         |           |
| }  |                   |         |           |
| csi-RS-FilterConfig SEQUENCE {   |                   |         |           |
| filterCoefficientRSRP  | FilterCoefficient |         |           |
| filterCoefficientRSRQ  | FilterCoefficient |         |           |
| filterCoefficientRS-SINR   | FilterCoefficient |         |           |
| }  |                   |         |           |
| }  |                   |         |           |
| quantityConfigRS-Index SEQUENCE {  |                   |         |           |
| ssb-FilterConfig SEQUENCE {  |                   |         |           |
| filterCoefficientRSRP  | FilterCoefficient |         |           |
| filterCoefficientRSRQ  | FilterCoefficient |         |           |
| filterCoefficientRS-SINR   | FilterCoefficient |         |           |
| }  |                   |         |           |
| csi-RS-FilterConfig SEQUENCE {   |                   |         |           |
| filterCoefficientRSRP  | FilterCoefficient |         |           |
| filterCoefficientRSRQ  | FilterCoefficient |         |           |
| filterCoefficientRS-SINR   | FilterCoefficient |         |           |
| }  |                   |         |           |
| }  |                   |         |           |
| }  |                   |         |           |
| quantityConfigEUTRA SEQUENCE {   |                   |         | INTER-RAT |
| filterCoefficientRSRP  | FilterCoefficient |         |           |
| filterCoefficientRSRQ  | FilterCoefficient |         |           |

|                          |                   |  |  |
|--------------------------|-------------------|--|--|
| filterCoefficientRS-SINR | FilterCoefficient |  |  |
| }                        |                   |  |  |
| }                        |                   |  |  |

| Condition | Explanation                                    |
|-----------|--|
| INTER-RAT | Configuration for EUTRA inter-RAT measurements |

– *RACH-ConfigCommon*

**Table 4.6.3-128: RACH-ConfigCommon**

| Derivation Path: TS 38.331 [6], clause 6.3.2       |   |  |           |
|--|---|--|-----------|
| Information Element                                | Value/remark                                    | Comment  | Condition |
| RACH-ConfigCommon ::= SEQUENCE {                   |   |  |           |
| rach-ConfigGeneric                                 | RACH-ConfigGeneric                              |  |           |
| totalNumberOfRA-Preambles                          | Not present                                     |  |           |
| ssb-perRACH-OccasionAndCB-PreamblesPerSSB CHOICE { |   |  |           |
| one  | n8  |  | FR1       |
|  | n4  |  | FR2       |
| }  |   |  |           |
| groupBconfigured                                   | Not present                                     |  |           |
| ra-ContentionResolutionTimer                       | sf64  |  |           |
| rsrp-ThresholdSSB                                  | RSRP-Range                                      |  |           |
| rsrp-ThresholdSSB-SUL                              | Not present                                     |  |           |
|  | RSRP-Range                                      |  | SUL       |
| prach-RootSequenceIndex CHOICE {                   |   |  |           |
| l139   | Set according to table 4.4.2-2 for the NR Cell. |  |           |
| }  |   |  |           |
| msg1-SubcarrierSpacing                             | SubcarrierSpacing                               |  |           |
| restrictedSetConfig                                | unrestrictedSet                                 |  |           |
| msg3-transformPrecoder                             | Not present                                     | transform precoding is disabled for Msg3 PUSCH transmission and any PUSCH transmission scheduled with DCI format 0_0 |           |
| }  |   |  |           |

| Condition | Explanation          |
|-----------|----------------------|
| SUL       | Supplementary uplink |

– *RACH-ConfigCommonTwoStepRA*

**Table 4.6.3-128A: RACH-ConfigCommonTwoStepRA**

| Derivation Path: TS 38.331 [6], clause 6.3.2  |              |         |           |
|---|--------------|---------|-----------|
| Information Element                           | Value/remark | Comment | Condition |
| RACH-ConfigCommonTwoStepRA-r16 ::= SEQUENCE { |              |         |           |
| FFS   |              |         |           |
| }   |              |         |           |

– *RACH-ConfigDedicated*

**Table 4.6.3-129: RACH-ConfigDedicated**

| Derivation Path: TS 38.331 [6], clause 6.3.2                                    |                    |         |           |
|---|--------------------|---------|-----------|
| Information Element   | Value/remark       | Comment | Condition |
| RACH-ConfigDedicated ::= SEQUENCE {   |                    |         |           |
| cfra SEQUENCE {   |                    |         |           |
| occasions SEQUENCE {  |                    |         |           |
| rach-ConfigGeneric  | RACH-ConfigGeneric |         |           |
| ssb-perRACH-Occasion  | one                |         |           |
| }   |                    |         |           |
| resources CHOICE {  |                    |         |           |
| ssb SEQUENCE {  |                    |         |           |
| ssb-ResourceList SEQUENCE (SIZE(1..maxRA-SSB-Resources)) OF CFRA-SSB-Resource { | 1 entry            |         |           |
| CFRA-SSB-Resource[1] SEQUENCE {   |                    | entry 1 |           |
| ssb   | SSB-Index          |         |           |
| ra-PreambleIndex  | 8                  |         |           |
| }   |                    |         |           |
| }   |                    |         |           |
| ra-ssb-OccasionMaskIndex  | 0                  |         |           |
| }   |                    |         |           |
| }   |                    |         |           |
| ra-Prioritization   | Not present        |         |           |
| }   |                    |         |           |

– *RACH-ConfigGeneric*

**Table 4.6.3-130: RACH-ConfigGeneric**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |               |
|--|--------------|---------|---------------|
| Information Element                          | Value/remark | Comment | Condition     |
| RACH-ConfigGeneric ::= SEQUENCE {            |              |         |               |
| prach-ConfigurationIndex                     | 160          |         | FR1           |
|  | 149          |         | FR2           |
| msg1-FDM                                     | four         |         | FR1           |
|  | one          |         | FR2           |
| msg1-FrequencyStart                          | 0            |         |               |
| zeroCorrelationZoneConfig                    | 15           |         |               |
| preambleReceivedTargetPower                  | -118         |         |               |
| preambleTransMax                             | n7           |         |               |
| powerRampingStep                             | dB4          |         |               |
| ra-ResponseWindow                            | sl20         |         |               |
|  | sl10         |         | FR1 AND SCS15 |
| }  |              |         |               |

– *RACH-ConfigGenericTwoStepRA*

**Table 4.6.3-130A: RACH-ConfigGenericTwoStepRA**

| Derivation Path: TS 38.331 [6], clause 6.3.2   |              |         |           |
|--|--------------|---------|-----------|
| Information Element                            | Value/remark | Comment | Condition |
| RACH-ConfigGenericTwoStepRA-r16 ::= SEQUENCE { |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *RA-Prioritization***Table 4.6.3-131: *RA-Prioritization***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RA-Prioritization                            | 0            |         |           |

— *RadioBearerConfig*

**Table 4.6.3-132: *RadioBearerConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.2              |                                  |         |  |
|---|----------------------------------|---------|--|
| Information Element                                       | Value/remark                     | Comment | Condition  |
| RadioBearerConfig ::= SEQUENCE {                          |                                  |         |  |
| srb-ToAddModList  | Not present                      |         |  |
| srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod { | 1 entry                          |         | SRB1   |
| SRB-ToAddMod[1] SEQUENCE {                                |                                  | entry 1 |  |
| SRB-Identity  | SRB-Identity with condition SRB1 |         |  |
| reestablishPDCP   | Not present                      |         |  |
| discardOnPDCP   | Not present                      |         |  |
| pdcp-Config   | Not present                      | Default |  |
| }   |                                  |         |  |
| }   |                                  |         |  |
| srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod { | 1 entry                          |         | SRB2,<br>RESUME                                  |
| SRB-ToAddMod[1] SEQUENCE {                                |                                  | entry 1 |  |
| SRB-Identity  | SRB-Identity with condition SRB2 |         |  |
| reestablishPDCP   | Not present                      |         |  |
| true  |                                  |         | RESUME,<br>REEST                                 |
| discardOnPDCP   | Not present                      |         |  |
| pdcp-Config   | Not present                      | Default |  |
| }   |                                  |         |  |
| }   |                                  |         |  |
| srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod { | 1 entry                          |         | SRB3   |
| SRB-ToAddMod[1] SEQUENCE {                                |                                  | entry 1 |  |
| srb-Identity  | SRB-Identity with condition SRB3 |         |  |
| reestablishPDCP   | Not present                      |         |  |
| discardOnPDCP   | Not present                      |         |  |
| pdcp-Config   | Not present                      | Default |  |
| }   |                                  |         |  |
| }   |                                  |         |  |
| srb-ToAddModList SEQUENCE (SIZE (1..2)) OF SRB-ToAddMod { | 2 entries                        |         | SRB_NR_P<br>DCP                                  |
| SRB-ToAddMod[1] SEQUENCE {                                |                                  | entry 1 |  |
| SRB-Identity  | SRB-Identity with condition SRB1 |         |  |
| reestablishPDCP   | Not present                      |         |  |
| true  |                                  |         | SRB_NR_P<br>DCP AND<br>Re-<br>establish_P<br>DCP |
| discardOnPDCP   | Not present                      |         |  |
| pdcp-Config   | Not present                      | Default |  |
| }   |                                  |         |  |
| SRB-ToAddMod[2] SEQUENCE {                                |                                  | entry 2 |  |
| SRB-Identity  | SRB-Identity with condition SRB2 |         |  |
| reestablishPDCP   | Not present                      |         |  |
| true  |                                  |         | SRB_NR_P<br>DCP AND<br>Re-<br>establish_P<br>DCP |
| discardOnPDCP   | Not present                      |         |  |
| pdcp-Config   | Not present                      | Default |  |
| }   |                                  |         |  |

|   |                                   |                                  |                                 |
|---|-----------------------------------|----------------------------------|---------------------------------|
| }   |                                   |                                  |                                 |
| srb3-ToRelease  | Not present                       |                                  |                                 |
| drb-ToAddModList  | Not present                       |                                  |                                 |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB))<br>OF DRB-ToAddMod { | 1 entry                           |                                  | EN-DC_DRB                       |
| DRB-ToAddMod[1] SEQUENCE {  |                                   | entry 1                          |                                 |
| cnAssociation CHOICE {  |                                   |                                  |                                 |
| eps-BearerIdentity  | 6                                 |                                  |                                 |
| }   |                                   |                                  |                                 |
| drb-Identity  | DRB-Identity using condition DRB2 |                                  |                                 |
| reestablishPDCP   | Not present                       |                                  |                                 |
|   | true                              |                                  | EN-DC_DRB AND Re-establish_PDCP |
| recoverPDCP   | Not present                       |                                  |                                 |
|   | true                              |                                  | EN-DC_DRB AND Recover_PDCP      |
| pdcP-Config   | PDCP-Config                       |                                  |                                 |
| }   |                                   |                                  |                                 |
| }   |                                   |                                  |                                 |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB))<br>OF DRB-ToAddMod { | 1 entry                           |                                  | MCG_NR_PDCP                     |
| DRB-ToAddMod[1] SEQUENCE {  |                                   | entry 1                          |                                 |
| cnAssociation CHOICE {  |                                   |                                  |                                 |
| eps-BearerIdentity  | 12                                | EPS Bearer Id of default MCG DRB |                                 |
| }   |                                   |                                  |                                 |
| drb-Identity  | 8                                 | DRB Id of default MCG DRB        |                                 |
| reestablishPDCP   | Not present                       |                                  |                                 |
| recoverPDCP   | Not present                       |                                  |                                 |
| pdcP-Config   | PDCP-Config                       |                                  |                                 |
| }   |                                   |                                  |                                 |
| }   |                                   |                                  |                                 |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB))<br>OF DRB-ToAddMod { | 1 entry                           |                                  | DRB1                            |
| DRB-ToAddMod[1] SEQUENCE {  |                                   | entry 1                          |                                 |
| cnAssociation CHOICE {  |                                   |                                  |                                 |
| sdap-Config   | SDAP-Config                       |                                  |                                 |
| }   |                                   |                                  |                                 |
| drb-Identity  | DRB-Identity using condition DRB1 |                                  |                                 |
| reestablishPDCP   | Not present                       |                                  |                                 |
|   | true                              |                                  | DRB1 AND Re-establish_PDCP      |
| recoverPDCP   | Not present                       |                                  |                                 |
|   | true                              |                                  | DRB1 AND Recover_PDCP           |
| pdcP-Config   | PDCP-Config                       |                                  |                                 |
| daps-Config-r16   | Not present                       |                                  |                                 |
|   | true                              |                                  | DRB1 AND DAPS_PDCP              |
| }   |                                   |                                  |                                 |
| }   |                                   |                                  |                                 |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB))<br>OF DRB-ToAddMod { | 1 entry                           |                                  | DRB2                            |

|  |                                   |   |                                |
|--|-----------------------------------|---|--------------------------------|
| DRB-ToAddMod[1] SEQUENCE {                                     |                                   | entry 1   |                                |
| cnAssociation CHOICE {   |                                   |   |                                |
| sdap-Config  | SDAP-Config                       |   |                                |
| }  |                                   |   |                                |
| drb-Identity   | DRB-Identity using condition DRB2 |   |                                |
| reestablishPDCP  | Not present                       |   |                                |
|  | true                              |   | DRB2 AND Re-establish_PDCP     |
| recoverPDCP  | Not present                       |   |                                |
|  | true                              |   | DRB2 AND Recover_PDCP          |
| pdcp-Config  | PDCP-Config                       |   |                                |
| daps-Config-r16  | Not present                       |   |                                |
| }  |                                   |   |                                |
| }  |                                   |   |                                |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | n entries                         | n is the number of DRBs established before RRC resume or RRC re-establishment | RESUME, REEST                  |
| DRB-ToAddMod[k, k=1..n] SEQUENCE {                             |                                   | entry [k, k=1..n]   |                                |
| cnAssociation  | Not present                       |   |                                |
| drb-Identity   | DRB-Identity with condition DRBk  |   |                                |
| reestablishPDCP  | true                              |   |                                |
| recoverPDCP  | Not present                       |   |                                |
| pdcp-Config  | Not present                       |   |                                |
| daps-Config-r16  | Not present                       |   |                                |
| }  |                                   |   |                                |
| }  |                                   |   |                                |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | 1 entry                           |   | DRBn                           |
| DRB-ToAddMod[1] SEQUENCE {                                     |                                   | entry 1   |                                |
| cnAssociation CHOICE {   |                                   |   |                                |
| sdap-Config  | SDAP-Config with condition NR-DC  |   |                                |
| }  |                                   |   |                                |
| drb-Identity   | DRB-Identity with condition DRBn  |   |                                |
| reestablishPDCP  | Not present                       |   |                                |
| recoverPDCP  | Not present                       |   |                                |
| pdcp-Config  | PDCP-Config                       |   |                                |
|  | PDCP-Config with condition Split  |   | Split                          |
| }  |                                   |   |                                |
| }  |                                   |   |                                |
| drb-ToReleaseList  | Not present                       |   |                                |
| securityConfig   | Not present                       |   | SRB1                           |
| securityConfig SEQUENCE {                                      |                                   |   |                                |
| securityAlgorithmConfig  | SecurityAlgorithmConfig           |   |                                |
| keyToUse   | master                            |   |                                |
|  | secondary                         |   | SRB3, EN-DC_DRB, SecondaryKeys |
| }  |                                   |   |                                |
| }  |                                   |   |                                |

| Condition         | Explanation   |
|-------------------|---|
| SRB3              | Establishment of SRB3   |
| MCG_NR_PDCP       | EN-DC MCG DRB configured or reconfigured with NR PDCP   |
| SRB_NR_PDCP       | EN-DC SRB1 and SRB2 configured with NR PDCP   |
| SRB1              | Establishment of SRB1   |
| SRB2              | Establishment of SRB2   |
| DRB1              | Establishment of DRB1   |
| DRB2              | Establishment of DRB2   |
| DRBn              | Establishment of DRBn   |
| EN-DC_DRB         | EN-DC DRB configured on SCG   |
| Re-establish_PDCP | Re-establishment of PDCP  |
| Recover_PDCP      | Recovery of PDCP  |
| RESUME            | Used in RRCResume Message   |
| REEST             | The first RRCReconfiguration message after successful completion of the RRC re-establishment procedure. |
| SecondaryKeys     | NR-DC SCG or MCG DRB configured or reconfigured with secondary security keys                            |
| Split             | Split PDCP: more than one RLC   |
| DAPS_PDCP         | Used when the bearer is configured as DAPS bearer   |

– *RadioLinkMonitoringConfig*

**Table 4.6.3-133: RadioLinkMonitoringConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2   |                               |         |           |
|--|-------------------------------|---------|-----------|
| Information Element  | Value/remark                  | Comment | Condition |
| RadioLinkMonitoringConfig ::= SEQUENCE {   |                               |         |           |
| failureDetectionResourcesToAddModList<br>SEQUENCE<br>(SIZE(1..maxNrofFailureDetectionResources)) OF<br>RadioLinkMonitoringRS { | 1 entry                       |         |           |
| RadioLinkMonitoringRS[1] SEQUENCE {  |                               | entry 1 |           |
| radioLinkMonitoringRS-Id   | RadioLinkMonitoringRS-<br>-Id |         |           |
| purpose  | rif                           |         |           |
| detectionResource CHOICE {   |                               |         |           |
| ssb-Index  | SSB-Index                     |         |           |
| }  |                               |         |           |
| }  |                               |         |           |
| }  |                               |         |           |
| failureDetectionResourcesToReleaseList   | Not present                   |         |           |
| beamFailureInstanceMaxCount  | Not present                   |         |           |
| beamFailureDetectionTimer  | Not present                   |         |           |
| }  |                               |         |           |

– *RadioLinkMonitoringRS-Id*

**Table 4.6.3-134: RadioLinkMonitoringRS-Id**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RadioLinkMonitoringRS-Id                     | 0            |         |           |

— *RAN-AreaCode*

**Table 4.6.3-135: *RAN-AreaCode***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RAN-AreaCode                                 | 1            |         |           |

— *RateMatchPattern*

**Table 4.6.3-136: *RateMatchPattern***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                      |                |           |
|--|----------------------|----------------|-----------|
| Information Element                          | Value/remark         | Comment        | Condition |
| RateMatchPattern ::= SEQUENCE {              |                      |                |           |
| rateMatchPatternId                           | RateMatchPatternId   |                |           |
| patternType CHOICE {                         |                      |                |           |
| controlResourceSet                           | ControlResourceSetId |                |           |
| }  |                      |                |           |
| subcarrierSpacing                            | SubcarrierSpacing    |                |           |
| dummy  | semiStatic           | Dummy IE value |           |
| }  |                      |                |           |

— *RateMatchPatternId*

**Table 4.6.3-137: *RateMatchPatternId***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RateMatchPatternId                           | 0            |         |           |

— *RateMatchPatternLTE-CRS*

**Table 4.6.3-138: *RateMatchPatternLTE-CRS***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RateMatchPatternLTE-CRS ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *ReferenceTimeInfo*

**Table 4.6.3-138A: ReferenceTimeInfo**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                               |         |           |
|--|-------------------------------|---------|-----------|
| Information Element                          | Value/remark                  | Comment | Condition |
| ReferenceTimeInfo-r16 ::= SEQUENCE {         |                               |         |           |
| time-r16 ::= SEQUENCE {                      |                               |         |           |
| refDays-r16                                  | obtained from the local clock |         |           |
| refSeconds-r16                               | obtained from the local clock |         |           |
| refMilliSeconds-r16                          | obtained from the local clock |         |           |
| refTenNanoSeconds-r16                        | obtained from the local clock |         |           |
| }  |                               |         |           |
| uncertainty-r16                              | not present                   |         |           |
| timeInfoType-r16                             | localClock                    |         |           |
| referenceSFN-r16                             | SFN of PCell                  |         |           |
| }  |                               |         |           |

– *RejectWaitTime*

**Table 4.6.3-139: RejectWaitTime**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RejectWaitTime                               | 1            |         |           |

– *RepetitionSchemeConfig*

**Table 4.6.3-139A: RepetitionSchemeConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RepetitionSchemeConfig-r16 ::= CHOICE {      |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *ReportConfigId*

**Table 4.6.3-140: ReportConfigId**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ReportConfigId                               | 1            |         |           |

– *ReportConfigInterRAT*

**Table 4.6.3-141: ReportConfigInterRAT (EUTRA-Thres, NR-Thres)**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                  |  |                            |
|--|------------------|--|----------------------------|
| Information Element                          | Value/remark     | Comment  | Condition                  |
| ReportConfigInterRAT ::= SEQUENCE {          |                  |  |                            |
| reportType CHOICE {                          |                  |  |                            |
| periodical SEQUENCE {                        |                  |  | PERIODICAL                 |
| reportInterval                               | ReportInterval   |  |                            |
| reportAmount                                 | infinity         |  |                            |
| reportQuantityCell SEQUENCE {                |                  |  |                            |
| rsrp   | true             |  |                            |
| rsrq   | true             |  |                            |
| sinr   | false            |  |                            |
| }  |                  |  |                            |
| maxReportCells                               | 8                |  |                            |
| }  |                  |  |                            |
| eventTriggered SEQUENCE {                    |                  |  | EVENT_B1<br>OR<br>EVENT_B2 |
| eventId CHOICE {                             |                  |  |                            |
| eventB1 SEQUENCE {                           |                  |  | EVENT_B1                   |
| b1-ThresholdEUTRA CHOICE {                   |                  |  |                            |
| rsrp   | EUTRA-Thres      | INTEGER (0..97)                                |                            |
| }  |                  |  |                            |
| reportOnLeave                                | FALSE            |  |                            |
| Hysteresis                                   | 0 (0 dB)         | The actual value<br>is field value * 0.5<br>dB |                            |
| timeToTrigger                                | ms0              |  |                            |
| }  |                  |  |                            |
| eventB2 SEQUENCE {                           |                  |  | EVENT_B2                   |
| b2-Threshold1 CHOICE {                       |                  |  |                            |
| rsrp   | NR-Thres         | INTEGER(0..127)                                |                            |
| }  |                  |  |                            |
| b2-Threshold2EUTRA CHOICE {                  |                  |  |                            |
| rsrp   | EUTRA-Thres      | INTEGER (0..97)                                |                            |
| }  |                  |  |                            |
| reportOnLeave                                | FALSE            |  |                            |
| Hysteresis                                   | 3 (1.5dB)        | The actual value<br>is field value * 0.5<br>dB |                            |
| timeToTrigger                                | ms1024           |  |                            |
| }  |                  |  |                            |
| }  |                  |  |                            |
| rsType                                       | ssb              |  |                            |
| reportInterval                               | ms120            |  |                            |
| reportAmount                                 | r2               |  |                            |
| reportQuantity SEQUENCE {                    |                  |  |                            |
| Rsrp   | TRUE             |  |                            |
| rsrq   | TRUE             |  |                            |
| sinr   | FALSE            |  |                            |
| }  |                  |  |                            |
| maxReportCells                               | 8                |  |                            |
| }  |                  |  |                            |
| reportCGI SEQUENCE {                         |                  |  | CGI                        |
| cellForWhichToReportCGI                      | EUTRA-PhysCellId |  |                            |
| }  |                  |  |                            |
| }  |                  |  |                            |
| }  |                  |  |                            |

| Condition  | Explanation                           |
|------------|---------------------------------------|
| EVENT_B1   | Configuration of Event B1             |
| EVENT_B2   | Configuration of Event B2             |
| CGI        | Configuration of CGI measurement      |
| PERIODICAL | Configuration of periodical reporting |

– *ReportConfigNR*

**Table 4.6.3-142: ReportConfigNR(Thres1, Thres2)**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                |   |                 |
|--|----------------|---|-----------------|
| Information Element                          | Value/remark   | Comment   | Condition       |
| ReportConfigNR ::= SEQUENCE {                |                |   |                 |
| reportType CHOICE {                          |                |   |                 |
| periodical SEQUENCE {                        |                |   | PERIODICAL      |
| rsType                                       | ssb            |   |                 |
| reportInterval                               | ReportInterval |   |                 |
| reportAmount                                 | infinity       |   |                 |
| reportQuantityCell SEQUENCE {                |                |   |                 |
| rsrp   | true           |   |                 |
| rsrq   | true           |   |                 |
| sinr   | false          |   |                 |
| true   |                |   | pc_ss_SINR_Meas |
| }  |                |   |                 |
| maxReportCells                               | 8              |   |                 |
| reportQuantityRS-Indexes                     | Not present    |   |                 |
| maxNrofRS-IndexesToReport                    | Not present    |   |                 |
| includeBeamMeasurements                      | false          |   |                 |
| useWhiteCellList                             | false          |   |                 |
| }  |                |   |                 |
| eventTriggered SEQUENCE {                    |                |   |                 |
| eventId CHOICE {                             |                |   |                 |
| eventA1 SEQUENCE {                           |                |   | EVENT_A1        |
| a1-Threshold CHOICE {                        |                |   |                 |
| rsrp   | Thres1         | Thres is an entry value into a mapping table in TS 38.133 [13]. |                 |
| }  |                |   |                 |
| reportOnLeave                                | false          |   |                 |
| hysteresis                                   | Hysteresis     |   |                 |
| timeToTrigger                                | TimeToTrigger  |   |                 |
| }  |                |   |                 |
| eventA2 SEQUENCE {                           |                |   | EVENT_A2        |
| a2-Threshold CHOICE {                        |                |   |                 |
| rsrp   | Thres1         | Thres is an entry value into a mapping table in TS 38.133 [13]. |                 |
| }  |                |   |                 |
| reportOnLeave                                | false          |   |                 |
| hysteresis                                   | Hysteresis     |   |                 |
| timeToTrigger                                | TimeToTrigger  |   |                 |
| }  |                |   |                 |
| eventA3 SEQUENCE {                           |                |   | EVENT_A3        |
| a3-Offset CHOICE {                           |                |   |                 |
| rsrp   | Thres1         | Thres is an entry value into a mapping table in TS 38.133 [13]. |                 |
| }  |                |   |                 |
| reportOnLeave                                | false          |   |                 |
| hysteresis                                   | Hysteresis     |   |                 |
| timeToTrigger                                | TimeToTrigger  |   |                 |
| useWhiteCellList                             | false          |   |                 |
| }  |                |   |                 |
| eventA4 SEQUENCE {                           |                |   | EVENT_A4        |
| a4-Threshold CHOICE {                        |                |   |                 |
| rsrp   | Thres1         | Thres is an entry value into a                                  |                 |

|                               |                |  |                     |
|-------------------------------|----------------|--|---------------------|
|                               |                | mapping table in<br>TS 38.133 [13].                                      |                     |
| }                             |                |  |                     |
| reportOnLeave                 | false          |  |                     |
| hysteresis                    | Hysteresis     |  |                     |
| timeToTrigger                 | TimeToTrigger  |  |                     |
| useWhiteCellList              | false          |  |                     |
| }                             |                |  |                     |
| eventA5 SEQUENCE {            |                |  | EVENT_A5            |
| a5-Threshold1 CHOICE {        |                |  |                     |
| rsrp                          | Thres1         | Thres is an entry<br>value into a<br>mapping table in<br>TS 38.133 [13]. |                     |
| }                             |                |  |                     |
| a5-Threshold2 CHOICE {        |                |  |                     |
| rsrp                          | Thres2         | Thres is an entry<br>value into a<br>mapping table in<br>TS 38.133 [13]. |                     |
| }                             |                |  |                     |
| reportOnLeave                 | false          |  |                     |
| hysteresis                    | Hysteresis     |  |                     |
| timeToTrigger                 | TimeToTrigger  |  |                     |
| useWhiteCellList              | false          |  |                     |
| }                             |                |  |                     |
| eventA6 SEQUENCE {            |                |  | EVENT_A6            |
| a6-Offset CHOICE {            |                |  |                     |
| rsrp                          | Thres1         | Thres is an entry<br>value into a<br>mapping table in<br>TS 38.133 [13]. |                     |
| }                             |                |  |                     |
| reportOnLeave                 | false          |  |                     |
| hysteresis                    | Hysteresis     |  |                     |
| timeToTrigger                 | TimeToTrigger  |  |                     |
| useWhiteCellList              | false          |  |                     |
| }                             |                |  |                     |
| }                             |                |  |                     |
| rsType                        | ssb            |  |                     |
| reportInterval                | ReportInterval |  |                     |
| reportAmount                  | r2             |  |                     |
| reportQuantityCell SEQUENCE { |                |  |                     |
| rsrp                          | true           |  |                     |
| rsrq                          | true           |  |                     |
| sinr                          | false          |  |                     |
|                               | true           |  | pc_ss_SINR<br>_Meas |
| }                             |                |  |                     |
| maxReportCells                | 8              |  |                     |
| reportQuantityRS-Indexes      | Not present    |  |                     |
| maxNrofRS-IndexesToReport     | Not present    |  |                     |
| includeBeamMeasurements       | false          |  |                     |
| reportAddNeighMeas            | Not present    |  |                     |
| }                             |                |  |                     |
| reportCGI SEQUENCE {          |                |  | CGI                 |
| cellForWhichToReportCGI       | PhysCellId     |  |                     |
| }                             |                |  |                     |
| condTriggerConfig SEQUENCE {  |                |  | CHO. CPC            |
| condEventId CHOICE {          |                |  |                     |
| condEventA3 SEQUENCE {        |                |  | EVENT_A3            |
| a3-Offset CHOICE {            |                |  |                     |
| rsrp                          | Thres1         | Thres is an entry<br>value into a<br>mapping table in<br>TS 38.133 [13]. |                     |

|                        |               |   |          |
|------------------------|---------------|---|----------|
| }                      |               |   |          |
| hysteresis             | Hysteresis    |   |          |
| timeToTrigger          | TimeToTrigger |   |          |
| }                      |               |   |          |
| condEventA5 SEQUENCE { |               |   | EVENT_A5 |
| a5-Threshold1 CHOICE { |               |   |          |
| rsrp                   | Thres1        | Thres is an entry value into a mapping table in TS 38.133 [13]. |          |
| }                      |               |   |          |
| a5-Threshold2 CHOICE { |               |   |          |
| rsrp                   | Thres2        | Thres is an entry value into a mapping table in TS 38.133 [13]. |          |
| }                      |               |   |          |
| hysteresis             | Hysteresis    |   |          |
| timeToTrigger          | TimeToTrigger |   |          |
| }                      |               |   |          |
| }                      |               |   |          |
| }                      |               |   |          |
| }                      |               |   |          |
| }                      |               |   |          |

| Condition  | Explanation                           |
|------------|---------------------------------------|
| EVENT_A1   | Configuration of Event A1             |
| EVENT_A2   | Configuration of Event A2             |
| EVENT_A3   | Configuration of Event A3             |
| EVENT_A4   | Configuration of Event A4             |
| EVENT_A5   | Configuration of Event A5             |
| EVENT_A6   | Configuration of Event A6             |
| PERIODICAL | Configuration of periodical reporting |
| CGI        | Configuration of CGI measurement      |
| CHO        | Configuration of conditional handover |
| CPC        | Conditional PScell change             |

– *ReportConfigNR-SL*

**Table 4.6.3-142A: ReportConfigNR-SL**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                |         |                       |
|--|----------------|---------|-----------------------|
| Information Element                          | Value/remark   | Comment | Condition             |
| ReportConfigNR-SL-r16 ::= SEQUENCE {         |                |         |                       |
| reportType-r16 CHOICE {                      |                |         |                       |
| periodical-r16 SEQUENCE {                    |                |         | PERIODICAL            |
| reportInterval-r16                           | ReportInterval |         |                       |
| reportAmount-r16                             | r2             |         |                       |
| reportQuantity-r16 SEQUENCE {                |                |         |                       |
| cbr-r16                                      | true           |         |                       |
| }  |                |         |                       |
| eventTriggered-r16 SEQUENCE {                |                |         | EVENT_C1,<br>EVENT_C2 |
| eventId-r16 CHOICE {                         |                |         |                       |
| eventC1 SEQUENCE {                           |                |         | EVENT_C1              |
| c1-Threshold-r16                             | SL-CBR-r16     |         |                       |
| hysteresis-r16                               | Hysteresis     |         |                       |
| timeToTrigger-r16                            | TimeToTrigger  |         |                       |
| }  |                |         |                       |
| eventC2 SEQUENCE {                           |                |         | EVENT_C2              |
| c2-Threshold-r16                             | SL-CBR-r16     |         |                       |
| hysteresis-r16                               | Hysteresis     |         |                       |
| timeToTrigger-r16                            | TimeToTrigger  |         |                       |
| }  |                |         |                       |
| }  |                |         |                       |
| }  |                |         |                       |
| }  |                |         |                       |
| }  |                |         |                       |

| Condition  | Explanation                           |
|------------|---------------------------------------|
| PERIODICAL | Configuration of periodical reporting |
| EVENT_C1   | Configuration of Event C1             |
| EVENT_C2   | Configuration of Event C2             |

– *ReportConfigToAddModList*

**Table 4.6.3-143: ReportConfigToAddModList**

| Derivation Path: TS 38.331 [6], clause 6.3.2  |                |         |           |
|---|----------------|---------|-----------|
| Information Element   | Value/remark   | Comment | Condition |
| ReportConfigToAddModList ::= SEQUENCE(SIZE(1..maxReportConfigId)) OF ReportConfigToAddMod { | 1 entry        |         |           |
| ReportConfigToAddMod[1] SEQUENCE {  |                | entry 1 |           |
| reportConfigId  | ReportConfigId |         |           |
| reportConfig CHOICE {   |                |         |           |
| reportConfigNR  | ReportConfigNR |         |           |
| }   |                |         |           |
| }   |                |         |           |
| }   |                |         |           |

– *ReportInterval*

**Table 4.6.3-144: ReportInterval**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ReportInterval                               | ms480        |         |           |

– *ReselectionThreshold*

**Table 4.6.3-145: ReselectionThreshold**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ReselectionThreshold                         | FFS          |         |           |

– *ReselectionThresholdQ*

**Table 4.6.3-146: ReselectionThresholdQ**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ReselectionThresholdQ                        | FFS          |         |           |

– *ResumeCause*

**Table 4.6.3-147: ResumeCause**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ResumeCause                                  | mt-Access    |         |           |

— *RLC-BearerConfig***Table 4.6.3-148: RLC-BearerConfig**

Derivation Path: TS 38.331 [6], clause 6.3.2

| Information Element             | Value/remark                               | Comment  | Condition                |
|---------------------------------|--|--|--------------------------|
| RLC-BearerConfig ::= SEQUENCE { |  |  |                          |
| logicalChannelIdentity          | LogicalChannelIdentity with condition DRBn |  | DRBn                     |
|                                 | LogicalChannelIdentity with condition SRB1 |  | SRB1                     |
|                                 | LogicalChannelIdentity with condition SRB2 |  | SRB2                     |
|                                 | LogicalChannelIdentity with condition SRB3 |  | SRB3                     |
| servedRadioBearer CHOICE {      |  |  |                          |
| srb-Identity                    | SRB-Identity with condition SRB1           |  | SRB1                     |
|                                 | SRB-Identity with condition SRB2           |  | SRB2                     |
|                                 | SRB-Identity with condition SRB3           |  | SRB3                     |
| drb-Identity                    | DRB-Identity with condition DRBn           |  | DRBn                     |
| }                               |  |  |                          |
| servedRadioBearer               | Not present                                |  | RESUME                   |
| reestablishRLC                  | Not present                                |  |                          |
|                                 | true                                       |  | Re-establish_RLC, RESUME |
| rlc-Config                      | RLC-Config using condition AM              |  | AM                       |
|                                 | RLC-Config using condition UM.             |  | UM                       |
|                                 | Not present                                | Use default parameters as per TS 38.331 [6] clause 9.2.1 | SRB1, SRB2, SRB3, RESUME |
| mac-LogicalChannelConfig        | LogicalChannelConfig using condition HI    |  | AM                       |
|                                 | LogicalChannelConfig using condition LO    |  | UM                       |
|                                 | LogicalChannelConfig using condition SRBn  | n= 1, 2, 3 for SRB1, SRB2, SRB3 resp.                    | SRB1, SRB2, SRB3, RESUME |
| }                               |  |  |                          |

| Condition        | Explanation               |
|------------------|---------------------------|
| AM               | RLC AM DRB                |
| UM               | RLC UM DRB                |
| SRB1             | Establishment of SRB1     |
| SRB2             | Establishment of SRB2     |
| SRB3             | Establishment of SRB3     |
| DRBn             | Establishment of DRBn     |
| Re-establish_RLC | Re-establishment of RLC   |
| RESUME           | Used in RRConsume Message |

— *RLC-Config***Table 4.6.3-149: RLC-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |  |
|--|--------------|---------|--|
| Information Element                          | Value/remark | Comment | Condition                                    |
| RLC-Config ::= CHOICE {                      |              |         |  |
| am SEQUENCE {                                |              |         | AM   |
| ul-AM-RLC SEQUENCE {                         |              |         |  |
| sn-FieldLength                               | size18       |         |  |
| t-PollRetransmit                             | ms80         |         | FR1  |
| ms30   |              |         | FR2  |
| polIPDU                                      | p32768       |         |  |
| polIByte                                     | KB750        |         |  |
| maxRetxThreshold                             | t8           |         |  |
| }  |              |         |  |
| dl-AM-RLC SEQUENCE {                         |              |         |  |
| sn-FieldLength                               | size18       |         |  |
| t-Reassembly                                 | ms80         |         | FR1  |
| ms30   |              |         | FR2  |
| t-StatusProhibit                             | ms30         |         |  |
| }  |              |         |  |
| }  |              |         |  |
| um-Bi-Directional SEQUENCE {                 |              |         | UM   |
| ul-UM-RLC SEQUENCE {                         |              |         |  |
| sn-FieldLength                               | size12       |         | pc_um_Wlth LongSN                            |
| size6  |              |         | NOT pc_um_Wlth LongSN AND pc_um_With ShortSN |
| }  |              |         |  |
| dl-UM-RLC SEQUENCE {                         |              |         |  |
| sn-FieldLength                               | size12       |         | pc_um_Wlth LongSN                            |
| size6  |              |         | NOT pc_um_Wlth LongSN AND pc_um_With ShortSN |
| t-Reassembly                                 | ms80         |         | FR1  |
| ms30   |              |         | FR2  |
| }  |              |         |  |
| }  |              |         |  |
| }  |              |         |  |

| Condition | Explanation |
|-----------|-------------|
| AM        | RLC AM      |
| UM        | RLC UM      |

– *RLF-TimersAndConstants*

**Table 4.6.3-150: RLF-TimersAndConstants**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RLF-TimersAndConstants ::= SEQUENCE {        |              |         |           |
| t310   | ms1000       |         |           |
| n310   | n1           |         |           |
| n311   | n1           |         |           |
| t311   | ms1000       |         |           |
| }  |              |         |           |

– *RNTI-Value*

**Table 4.6.3-151: RNTI-Value**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |         |           |
|--|---|---------|-----------|
| Information Element                          | Value/remark  | Comment | Condition |
| RNTI-Value                                   | SS arbitrarily selects a value between '0001'H and 'FFEF'H                                    |         |           |
|  | SS arbitrarily selects a value between '0001'H and 'FFEF'H different from the MCG RNTI-Value. |         | NR-DC_SCG |

| Condition | Explanation     |
|-----------|-----------------|
| NR-DC_SCG | Add SCG (NR-DC) |

– *RSRP-Range*

**Table 4.6.3-152: RSRP-Range**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |  |           |
|--|--------------|--|-----------|
| Information Element                          | Value/remark | Comment  | Condition |
| RSRP-Range                                   | 0            | For measurements, 0 means L3 SS-RSRP<-156dBm according to Table 10.1.6.1-1 in TS 38.133 [13]. For thresholds, 0 means -156dBm. |           |

– *RSRQ-Range***Table 4.6.3-153: RSRQ-Range**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |  |           |
|--|--------------|--|-----------|
| Information Element                          | Value/remark | Comment  | Condition |
| RSRQ-Range                                   | 0            | For measurements, 0 means SS-RSRQ<-43dB according to Table 10.1.11.1-1 in TS 38.133 [14]. For thresholds, 0 means -43.5dB. |           |

– *RSSI-Range***Table 4.6.3-153A: RSSI-Range**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RSSI-Range-r16                               | FFS          |         |           |

– *SCellIndex***Table 4.6.3-154: SCellIndex**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SCellIndex                                   | 1            |         |           |
|  | 2            |         | EN-DC     |

| Condition | Explanation                 |
|-----------|-----------------------------|
| EN-DC     | E-UTRA-NR Dual Connectivity |

– *SchedulingRequestConfig***Table 4.6.3-155: SchedulingRequestConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                     |         |           |
|--|---------------------|---------|-----------|
| Information Element                          | Value/remark        | Comment | Condition |
| SchedulingRequestConfig ::= SEQUENCE {       |                     |         |           |
| schedulingRequestToAddModList SEQUENCE {     |                     |         |           |
| (SIZE(1..maxNrofSR-ConfigPerCellGroup)) OF   |                     |         |           |
| SSchedulingRequestToAddMod {                 |                     |         |           |
| SchedulingRequestToAddMod[1] SEQUENCE {      |                     | entry 1 |           |
| schedulingRequestId                          | SchedulingRequestId |         |           |
| sr-ProhibitTimer                             | Not present         |         |           |
| sr-TransMax                                  | n16                 |         |           |
| }  |                     |         |           |
| }  |                     |         |           |
| schedulingRequestToReleaseList               | Not present         |         |           |
| }  |                     |         |           |

– *SchedulingRequestId*

**Table 4.6.3-156: SchedulingRequestId**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SchedulingRequestId                          | 0            |         |           |

– *SchedulingRequestResourceConfig*

**Table 4.6.3-157: SchedulingRequestResourceConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2   |                                 |   |               |
|--|---------------------------------|---|---------------|
| Information Element                            | Value/remark                    | Comment   | Condition     |
| SchedulingRequestResourceConfig ::= SEQUENCE { |                                 |   |               |
| schedulingRequestResourceld                    | SchedulingRequestReso<br>urceld |   |               |
| schedulingRequestID                            | SchedulingRequestId             |   |               |
| periodicityAndOffset CHOICE {                  |                                 |   |               |
| sl10   | 9                               | With SCS = kHz15 results in repetition every 10 ms                      | SCS15         |
| sl20   | 9                               | With SCS = kHz30 results in repetition every 10 ms                      | SCS30         |
| sl40   | 19                              | With SCS = kHz60 results in repetition every 10 ms                      | FR1 AND SCS60 |
|  | 9                               | With SCS = kHz60 results in repetition every 10 ms                      | FR2 AND SCS60 |
| sl80   | 9                               | With SCS = kHz120 results in repetition every 10 ms                     | SCS120        |
| }  |                                 |   |               |
| resource                                       | 0                               | ID of the PUCCH resource as configured by PUCCH-Config (Table 4.6.3-84) |               |
| }  |                                 |   |               |

– *SchedulingRequestResourceld*

**Table 4.6.3-158: SchedulingRequestResourceld**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SchedulingRequestResourceld                  | 1            |         |           |

— *ScramblingId*

**Table 4.6.3-159: ScramblingId**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ScramblingId                                 | 0            |         |           |

— *SCS-SpecificCarrier*

**Table 4.6.3-160: SCS-SpecificCarrier**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |  |           |
|--|---|--|-----------|
| Information Element                          | Value/remark  | Comment  | Condition |
| SCS-SpecificCarrier ::= SEQUENCE {           |   |  |           |
| offsetToCarrier                              | offsetToCarrier as defined for the DL frequency of the cell | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. | DL_PointA |
|  | offsetToCarrier as defined for the UL frequency of the cell | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. | UL_PointA |
| subcarrierSpacing                            | SubcarrierSpacing   |  |           |
| carrierBandwidth                             | carrierBandwidth as defined for the frequency of the cell   | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. |           |
| txDirectCurrentLocation                      | Not present   |  |           |
| }  |   |  |           |

| Condition | Explanation                             |
|-----------|---|
| DL_PointA | IE absoluteFrequencyPointA for downlink |
| UL_PointA | IE absoluteFrequencyPointA for uplink   |

— *SDAP-Config***Table 4.6.3-161: SDAP-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.2                   |   |         |           |
|--|---|---------|-----------|
| Information Element  | Value/remark  | Comment | Condition |
| SDAP-Config ::= SEQUENCE {                                     |   |         |           |
| pdu-Session  | The same value as the PDU session ID IE of the contained message                          |         |           |
| sdap-HeaderDL  | absent  |         |           |
| sdap-HeaderUL  | present   |         |           |
| defaultDRB   | true  |         |           |
|  | false   |         | NR-DC     |
| mappedQoS-FlowsToAdd SEQUENCE (SIZE (1..maxNrofQFIs)) OF QFI { | n entries   |         |           |
| QFI[n]   | The list of QFIs of the Authorized QoS flow descriptions IE of the contained 5GSM message | entry n |           |
| }  |   |         |           |
| mappedQoS-FlowsToRelease                                       | Not present   |         |           |
| }  |   |         |           |

| Condition | Explanation             |
|-----------|-------------------------|
| NR-DC     | NR-NR Dual Connectivity |

— *SearchSpace*

**Table 4.6.3-162: SearchSpace**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |                    |           |
|--|---|--------------------|-----------|
| Information Element                          | Value/remark                                | Comment            | Condition |
| SearchSpace ::= SEQUENCE {                   |   |                    |           |
| searchSpaceld                                | SearchSpaceld with condition CSS            |                    | CSS       |
|  | SearchSpaceld with condition USS            |                    | USS       |
|  | SearchSpaceld with condition SISS           |                    | SISS      |
| controlResourceSetId                         | ControlResourceSetId                        |                    |           |
|  | ControlResourceSetId with condition Common0 |                    | CSS, SISS |
| monitoringSlotPeriodicityAndOffset CHOICE {  |   |                    |           |
| sl1  | NULL  |                    |           |
| sl10   | 5   |                    | SISS      |
| }  |   |                    |           |
| duration                                     | Not present                                 | 1 slot per default |           |
|  | 2   |                    | SISS      |
| monitoringSymbolsWithinSlot                  | 1000000000000000                            |                    |           |
| nrofCandidates SEQUENCE {                    |   |                    |           |
| aggregationLevel1                            | n0  |                    |           |
| aggregationLevel2                            | n4  |                    | FR1       |
|  | n3  |                    | FR2       |
| aggregationLevel4                            | n2  |                    |           |
| aggregationLevel8                            | n1  |                    |           |
| aggregationLevel16                           | n0  |                    |           |
| }  |   |                    |           |
| searchSpaceType CHOICE {                     |   |                    |           |
| common SEQUENCE {                            |   |                    | CSS, SISS |
| dci-Format0-0-AndFormat1-0 SEQUENCE {        |   |                    |           |
| }  |   |                    |           |
| dci-Format2-0                                | Not present                                 |                    |           |
| dci-Format2-1                                | Not present                                 |                    |           |
| dci-Format2-2                                | Not present                                 |                    |           |
| dci-Format2-3                                | Not present                                 |                    |           |
| }  |   |                    |           |
| ue-Specific SEQUENCE {                       |   |                    | USS       |
| dci-Formats                                  | formats0-0-And-1-0                          |                    | Short_DCI |
| dci-Formats                                  | formats0-1-And-1-1                          |                    |           |
| }  |   |                    |           |
| }  |   |                    |           |
| }  |   |                    |           |

| Condition | Explanation   |
|-----------|---|
| CSS       | Common SearchSpace  |
| USS       | UE-Specific SearchSpace   |
| Short_DCI | Used in test scenarios requiring DCI formats 0-0 and 1-0 on USS |
| SISS      | SearchSpace for SI  |

– *SearchSpaceId*

**Table 4.6.3-163: *SearchSpaceId***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SearchSpaceID                                | 1            |         | CSS       |
|  | 2            |         | USS       |
|  | 3            |         | SISS      |

| Condition | Explanation             |
|-----------|-------------------------|
| CSS       | Common SearchSpace      |
| USS       | UE-Specific SearchSpace |
| SISS      | SearchSpace for SI      |

– *SearchSpaceZero*

**Table 4.6.3-164: *SearchSpaceZero***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |   |           |
|--|--------------|---|-----------|
| Information Element                          | Value/remark | Comment   | Condition |
| SearchSpaceZero                              | 0            | Index addressing SearchSpace#0 parameter set in Tables 13.11 .. 13.15 of TS 38.213 [22] |           |

– *SecurityAlgorithmConfig*

**Table 4.6.3-165: *SecurityAlgorithmConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |                      |           |
|--|---|----------------------|-----------|
| Information Element                          | Value/remark  | Comment              | Condition |
| SecurityAlgorithmConfig ::= SEQUENCE {       |   |                      |           |
| cipheringAlgorithm                           | nea0  |                      | RF OR RRM |
|  | Set according to PIXIT px_NR_CipheringAlgorithm     | see TS 38.523-3 [23] | SIG       |
| integrityProtAlgorithm                       | nia2  |                      |           |
|  | Set according to PIXIT px_NR_IntegrityProtAlgorithm | see TS 38.523-3 [23] | SIG       |
| }  |   |                      |           |

– *SemiStaticChannelAccessConfig*

**Table 4.6.3-165A: *SemiStaticChannelAccessConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SemiStaticChannelAccessConfig ::= SEQUENCE { |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *Sensor-LocationInfo*

**Table 4.6.3-165B: Sensor-LocationInfo**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| Sensor-LocationInfo-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *ServCellIndex*

**Table 4.6.3-166: ServCellIndex**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |                  |
|--|--------------|---------|------------------|
| Information Element                          | Value/remark | Comment | Condition        |
| ServCellIndex                                | 0            |         |                  |
|  | 1            |         | EN-DC, NR-DC_SCG |

| Condition | Explanation                 |
|-----------|-----------------------------|
| EN-DC     | E-UTRA-NR Dual Connectivity |
| NR-DC_SCG | Add SCG (NR-DC)             |

— *ServingCellConfig*

**Table 4.6.3-167: *ServingCellConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |         |                            |
|--|---|---------|----------------------------|
| Information Element                          | Value/remark                                  | Comment | Condition                  |
| ServingCellConfig ::= SEQUENCE {             |   |         |                            |
| tdd-UL-DL-ConfigurationDedicated             | Not present                                   |         |                            |
| initialDownlinkBWP                           | BWP-DownlinkDedicated                         |         |                            |
|  | Not present                                   |         | MEAS,<br>RESUME            |
| downlinkBWP-ToReleaseList                    | Not present                                   |         |                            |
| downlinkBWP-ToAddModList                     | Not present                                   |         |                            |
| firstActiveDownlinkBWP-Id                    | BWP-Id  |         |                            |
|  | Not present                                   |         | MEAS                       |
| bwp-InactivityTimer                          | Not present                                   |         |                            |
| defaultDownlinkBWP-Id                        | BWP-Id  |         |                            |
|  | Not present                                   |         | MEAS,<br>RESUME            |
| uplinkConfig                                 | Not present                                   |         | MEAS,<br>No_UL             |
| uplinkConfig SEQUENCE {                      |   |         |                            |
| initialUplinkBWP                             | BWP-UplinkDedicated                           |         |                            |
|  | BWP-UplinkDedicated<br>with condition SUL_NUL |         | PUSCH_PU<br>CCH_ON_S<br>UL |
|  | BWP-UplinkDedicated<br>with condition RESUME  |         | RESUME                     |
| uplinkBWP-ToReleaseList                      | Not present                                   |         |                            |
| uplinkBWP-ToAddModList                       | Not present                                   |         |                            |
| firstActiveUplinkBWP-Id                      | BWP-Id  |         |                            |
| pusch-ServingCellConfig                      | Not present                                   |         | RESUME                     |
| pusch-ServingCellConfig CHOICE {             |   |         |                            |
| setup  | PUSCH-<br>ServingCellConfig                   |         |                            |
| }  |   |         |                            |
| carrierSwitching                             | Not present                                   |         |                            |
| powerBoostPi2BPSK                            | Not present                                   |         |                            |
| uplinkChannelBW-PerSCS-List                  | Not present                                   |         |                            |
| enablePL-RS-UpdateForPUSCH-SRS-r16           | Not present                                   |         |                            |
| enableDefaultBeamPL-ForPUSCH0-0-r16          | Not present                                   |         |                            |
| enableDefaultBeamPL-ForPUCCH-r16             | Not present                                   |         |                            |
| enableDefaultBeamPL-ForSRS-r16               | Not present                                   |         |                            |
| uplinkTxSwitching-r16                        | Not present                                   |         |                            |
| mpr-PowerBoost-FR2-r16                       | Not present                                   |         |                            |
| }  |   |         |                            |
| supplementaryUplink                          | Not present                                   |         |                            |
| supplementaryUplink SEQUENCE {               |   |         | PUSCH_PU<br>CCH_ON_S<br>UL |
| initialUplinkBWP                             | BWP-UplinkDedicated                           |         |                            |
|  | BWP-UplinkDedicated<br>with condition RESUME  |         | RESUME                     |
| uplinkBWP-ToReleaseList                      | Not present                                   |         |                            |
| uplinkBWP-ToAddModList                       | Not present                                   |         |                            |
| firstActiveUplinkBWP-Id                      | BWP-Id  |         |                            |
| pusch-ServingCellConfig CHOICE {             |   |         |                            |
| setup  | PUSCH-<br>ServingCellConfig                   |         |                            |
| }  |   |         |                            |
| carrierSwitching                             | Not present                                   |         |                            |
| powerBoostPi2BPSK                            | Not present                                   |         |                            |
| uplinkChannelBW-PerSCS-List                  | Not present                                   |         |                            |
| enablePL-RS-UpdateForPUSCH-SRS-r16           | Not present                                   |         |                            |
| enableDefaultBeamPL-ForPUSCH0-0-r16          | Not present                                   |         |                            |
| enableDefaultBeamPL-ForPUCCH-r16             | Not present                                   |         |                            |

|                                  |                         |  |                 |
|----------------------------------|-------------------------|--|-----------------|
| enableDefaultBeamPL-ForSRS-r16   | Not present             |  |                 |
| uplinkTxSwitching-r16            | Not present             |  |                 |
| mpo-PowerBoost-FR2-r16           | Not present             |  |                 |
| }                                |                         |  |                 |
| pdcch-ServingCellConfig CHOICE { |                         |  |                 |
| setup                            | PDCCH-ServingCellConfig |  |                 |
| }                                |                         |  |                 |
| pdcch-ServingCellConfig          | Not present             |  | MEAS,<br>RESUME |
| pdsch-ServingCellConfig CHOICE { |                         |  |                 |
| setup                            | PDSCH-ServingCellConfig |  |                 |
| }                                |                         |  |                 |
| pdsch-ServingCellConfig          | Not present             |  | MEAS,<br>RESUME |
| csi-MeasConfig                   | Not present             |  |                 |
| sCellDeactivationTimer           | Not present             |  |                 |
| crossCarrierSchedulingConfig     | Not present             |  |                 |
| tag-Id                           | 0                       |  |                 |
| dummy                            | Not present             |  |                 |
| pathlossReferenceLinking         | Not present             |  |                 |
| servingCellMO                    | Not present             |  |                 |
|                                  | MeasObjectld            |  | MEAS            |
| }                                |                         |  |                 |

| Condition          | Explanation   |
|--------------------|---|
| PUSCH_PUCCH_ON_SUL | For the purpose of SUL test under condition that supplementary uplink is configured with both PUSCH and PUCCH on SUL carrier. |
| MEAS               | A NR or EN-DC measurement is configured.  |
| No_UL              | No uplink CA  |
| RESUME             | Used in RRCResume Message   |

— *ServingCellConfigCommon*

**Table 4.6.3-168: *ServingCellConfigCommon***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |           |   |
|--|--|-----------|---|
| Information Element                          | Value/remark                                     | Comment   | Condition   |
| ServingCellConfigCommon ::= SEQUENCE {       |  |           |   |
| physCellId                                   | PhysCellId                                       |           |   |
| downlinkConfigCommon                         | DownlinkConfigCommon                             |           |   |
|  | DownlinkConfigCommon<br>with condition SCell_add | SCell_add |   |
| uplinkConfigCommon                           | UplinkConfigCommon                               |           |   |
|  | Not present                                      |           | No_UL   |
| supplementaryUplinkConfig                    | Not present                                      |           |   |
| n-TimingAdvanceOffset                        | Not present                                      |           |   |
| ssb-PositionsInBurst CHOICE {                |  |           |   |
| shortBitmap                                  | 0100   |           | FR1<br>AND<br>SSB#1<br>AND<br>(2.3GHz<FR<br>EQ<=3GHz<br>AND<br>(FDD<br>OR<br>(TDD AND<br>SCS15))<br>OR<br>FREQ<=2.3<br>GHz) |
|  | 1000   |           | FR1<br>AND<br>SSB#0<br>AND<br>(2.3GHz<FR<br>EQ<=3GHz<br>AND<br>(FDD<br>OR<br>(TDD AND<br>SCS15))<br>OR<br>FREQ<=2.3<br>GHz) |
| mediumBitmap                                 | 01000000   |           | FR1<br>AND<br>SSB#1<br>AND<br>(2.3GHz<FR<br>EQ<=3GHz<br>AND<br>(TDD AND<br>SCS30))<br>OR<br>FREQ>3GH<br>z)                  |
|  | 10000000   |           | FR1<br>AND<br>SSB#0<br>AND<br>(2.3GHz<FR<br>EQ<=3GHz<br>AND<br>(TDD AND<br>SCS30))<br>OR<br>FREQ>3GH                        |

|                               |  |  |                  |
|-------------------------------|--|--|------------------|
|                               |  |  | z)               |
| longBitmap                    | 010000000000000000000000<br>000000000000000000000000<br>000000000000000000000000<br>0000 |  | FR2 AND<br>SSB#1 |
|                               | 100000000000000000000000<br>000000000000000000000000<br>000000000000000000000000<br>0000 |  | FR2 AND<br>SSB#0 |
| }                             |  |  |                  |
| ssb-periodicityServingCell    | ms20   |  |                  |
| dmrs-TypeA-Position           | pos2   |  |                  |
| Ite-CRS-ToMatchAround         | Not present  |  |                  |
| rateMatchPatternToAddModList  | Not present  |  |                  |
| rateMatchPatternToReleaseList | Not present  |  |                  |
| ssbSubcarrierSpacing          | SubcarrierSpacing  | For signalling test cases see subclause 6.2.3. Otherwise, see subclause 4.3.1. Value SS block SCS. |                  |
| tdd-UL-DL-ConfigurationCommon | TDD-UL-DL-ConfigCommon   |  | TDD              |
|                               | Not present  |  | FDD              |
| ss-PBCH-BlockPower            | 0  |  |                  |
| }                             |  |  |                  |

| Condition         | Explanation   |
|-------------------|---|
| FREQ<=2.3GHz      | Frequency range <= 2.3GHz   |
| 2.3GHz<FREQ<=3GHz | Frequency range > 2.3GHz and <= 3GHz                                |
| FREQ>3GHz         | Frequency range > 3GHz  |
| No_UL             | No uplink CA  |
| SSB#N             | Cell configured with SSB-Index set to N as defined in Table 4.4.2-2 |

– *ServingCellConfigCommonSIB*

**Table 4.6.3-169: *ServingCellConfigCommonSIB***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                                       |  |                |
|--|---------------------------------------|--|----------------|
| Information Element                          | Value/remark                          | Comment  | Condition      |
| ServingCellConfigCommonSIB ::= SEQUENCE {    |                                       |  |                |
| downlinkConfigCommon                         | DownlinkConfigCommonSIB               |  |                |
| uplinkConfigCommon                           | UplinkConfigCommonSIB                 |  |                |
| supplementaryUplink                          | Not present                           |  |                |
| UplinkConfigCommonSIB with condition SUL_SUL |                                       |  | SUL            |
| n-TimingAdvanceOffset                        | Not present                           |  |                |
| ssb-PositionsInBurst SEQUENCE {              |                                       |  |                |
| inOneGroup                                   | '0100 0000'B<br>'1000 0000'B          | When carrier frequency is smaller than or equal to 3 GHz, only the 4 leftmost bits are valid | SSB#1<br>SSB#0 |
| groupPresence                                | Not present<br>'1000 0000'B           |  | FR1<br>FR2     |
| }  |                                       |  |                |
| ssb-PeriodicityServingCell                   | ms20                                  |  |                |
| tdd-UL-DL-ConfigurationCommon                | TDD-UL-DL-ConfigCommon<br>Not present |  | TDD<br>FDD     |
| ss-PBCH-BlockPower                           | 0                                     |  |                |
| }  |                                       |  |                |

| Condition | Explanation   |
|-----------|---|
| SUL       | Supplementary uplink  |
| SSB#N     | Cell configured with SSB-Index set to N as defined in Table 4.4.2-2 |

– *ShortI-RNTI-Value*

**Table 4.6.3-170: *ShortI-RNTI-Value***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |                       |           |
|--|---|-----------------------|-----------|
| Information Element                          | Value/remark  | Comment               | Condition |
| ShortI-RNTI-Value                            | SS arbitrarily selects a value between '00 0001'H and 'FF FFFF'H. | BIT STRING (SIZE(24)) |           |

– *ShortMAC-I*

**Table 4.6.3-171: *ShortMAC-I***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |         |           |
|--|---|---------|-----------|
| Information Element                          | Value/remark  | Comment | Condition |
| ShortMAC-I                                   | The 16 least significant bits of the MAC-I calculated using the security configuration of the source PCell. |         |           |

— *SINR-Range*

**Table 4.6.3-172: SINR-Range**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |  |           |
|--|--------------|--|-----------|
| Information Element                          | Value/remark | Comment  | Condition |
| SINR-Range                                   | 0            | For measurements, 0 means SS-SINR<-23dB according to Table 10.1.16.1-1 in TS 38.133 [14]. For thresholds, 0 means -23dB. |           |

— *SI-RequestConfig*

**Table 4.6.3-172A: SI-RequestConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SI-RequestConfig ::= SEQUENCE {              |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *SI-SchedulingInfo*

**Table 4.6.3-173: SI-SchedulingInfo**

| Derivation Path: TS 38.331 [6], clause 6.3.2                              |                                     |         |            |
|---|-------------------------------------|---------|------------|
| Information Element   | Value/remark                        | Comment | Condition  |
| SI-SchedulingInfo ::= SEQUENCE {  |                                     |         |            |
| schedulingInfoList SEQUENCE (SIZE (1..maxSI-Message)) OF SchedulingInfo { | n entries<br>See subclause 4.4.3.1  |         |            |
| SchedulingInfo[n] SEQUENCE {  |                                     | entry n |            |
| si-BroadcastStatus  | broadcasting                        |         |            |
| si-Periodicity  | See subclause 4.4.3.1               |         |            |
| sib-MappingInfo SEQUENCE (SIZE (1..maxSIB)) OF SIB-TypeInfo {             | n entries                           |         |            |
| SIB-TypeInfo[1] SEQUENCE {  |                                     | entry n |            |
| type  | See subclause 4.4.3.1               |         |            |
| valueTag  | 0                                   |         |            |
| areaScope   | Not present                         |         |            |
| }   |                                     |         |            |
| }   |                                     |         |            |
| }   |                                     |         |            |
| }   |                                     |         |            |
| si-WindowLength   | s80<br>s160                         |         | FR1<br>FR2 |
| si-RequestConfig  | Not present                         |         |            |
| si-RequestConfigSUL   | Not present                         |         |            |
| systemInformationAreaID   | '0000 0000 0000 0000<br>0000 0001'B |         |            |
| }   |                                     |         |            |

— *SK-Counter*

**Table 4.6.3-173A: *SK-Counter***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SK-Counter                                   | 0            |         |           |

— *SlotFormatCombinationsPerCell*

**Table 4.6.3-174: *SlotFormatCombinationsPerCell***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SlotFormatCombinationsPerCell ::= SEQUENCE { |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *SlotFormatIndicator*

**Table 4.6.3-175: *SlotFormatIndicator***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SlotFormatIndicator ::= SEQUENCE {           |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *S-NSSAI*

**Table 4.6.3-176: *S-NSSAI***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| S-NSSAI ::= CHOICE {                         |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *SpeedStateScaleFactors*

**Table 4.6.3-177: *SpeedStateScaleFactors***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SpeedStateScaleFactors ::= SEQUENCE {        |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SPS-Config*

**Table 4.6.3-179: SPS-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SPS-Config ::= SEQUENCE {                    |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SPS-ConfigIndex*

**Table 4.6.3-179A: SPS-ConfigIndex**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SPS-ConfigIndex-r16                          | FFS          |         |           |

– *SPS-PUCCH-AN*

**Table 4.6.3-179B: SPS-PUCCH-AN**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SPS-PUCCH-AN-r16 ::= SEQUENCE {              |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SPS-PUCCH-AN-List*

**Table 4.6.3-179C: SPS-PUCCH-AN-List**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SPS-PUCCH-AN-List-r16 ::= SEQUENCE {         |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SRB-Identity*

**Table 4.6.3-180: SRB-Identity**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SRB-Identity                                 | 1            |         | SRB1      |
|  | 2            |         | SRB2      |
|  | 3            |         | SRB3      |

| Condition | Explanation |
|-----------|-------------|
| SRB1      | SRB1        |
| SRB2      | SRB2        |
| SRB3      | SRB3        |

– *SRS-CarrierSwitching***Table 4.6.3-181: SRS-CarrierSwitching**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SRS-CarrierSwitching ::= SEQUENCE {          |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *SRS-Config***Table 4.6.3-182: SRS-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.2  |              |         |                 |
|---|--------------|---------|-----------------|
| Information Element   | Value/remark | Comment | Condition       |
| SRS-Config ::= SEQUENCE {   |              |         |                 |
| srs-ResourceSetToReleaseList  | Not present  |         |                 |
| srs-ResourceSetToAddModList SEQUENCE<br>(SIZE(0..maxNrofSRS-ResourceSets)) OF SRS-<br>ResourceSet { | 1 entry      |         |                 |
| SRS-ResourceSet[1] SEQUENCE {   |              | entry 1 |                 |
| srs-ResourceId  | 0            |         |                 |
| srs-ResourceIdList SEQUENCE<br>(SIZE(1..maxNrofSRS-ResourcesPerSet)) OF SRS-<br>ResourceId {        | 1 entry      |         |                 |
| SRS-ResourceId[1]   | 0            | entry 1 |                 |
| }   |              |         |                 |
| resourceType CHOICE {   |              |         |                 |
| aperiodic SEQUENCE {  |              |         |                 |
| aperiodicSRS-ResourceTrigger  | 1            |         |                 |
| csi-RS  | Not present  |         |                 |
| slotOffset  | 7            |         | FR1             |
|   | 4            |         | FR2             |
| }   |              |         |                 |
| }   |              |         |                 |
| usage   | codebook     |         |                 |
| alpha   | Alpha        |         |                 |
| p0  | 0            |         |                 |
| pathlossReferenceRS CHOICE {  |              |         |                 |
| ssb-Index   | SSB-Index    |         |                 |
| }   |              |         |                 |
| srs-PowerControlAdjustmentStates  | Not present  |         |                 |
| }   |              |         |                 |
| }   |              |         |                 |
| srs-ResourceToReleaseList   | Not present  |         |                 |
| srs-ResourceToAddModList SEQUENCE<br>(SIZE(1..maxNrofSRS-Resources)) OF SRS-<br>Resource {          | 1 entry      |         |                 |
| SRS-Resource[1] SEQUENCE {  |              | entry 1 |                 |
| srs-ResourceId  | 0            |         |                 |
| nrofSRS-Ports   | ports2       |         | 2TX_UL_MI<br>MO |
|   | port1        |         |                 |
| ptrs-PortIndex  | Not present  |         |                 |
| transmissionComb CHOICE {   |              |         |                 |
| n2 SEQUENCE {   |              |         |                 |
| combOffset-n2   | 0            |         |                 |
| cyclicShift-n2  | 0            |         |                 |
| }   |              |         |                 |
| }   |              |         |                 |
| resourceMapping SEQUENCE {  |              |         |                 |
| startPosition   | 0            |         |                 |
| nrofSymbols   | n1           |         |                 |
| repetitionFactor  | n1           |         |                 |
| }   |              |         |                 |
| freqDomainPosition  | 0            |         |                 |
| freqDomainShift   | 0            |         |                 |
| freqHopping SEQUENCE {  |              |         |                 |
| c-SRS   | 0            |         |                 |
|   | 63           |         | FR1_100MH<br>z  |
|   | 17           |         | FR2_100MH<br>z  |
| b-SRS   | 0            |         |                 |

|                                |                         |  |  |
|--------------------------------|-------------------------|--|--|
| b-hop                          | 0                       |  |  |
| }                              |                         |  |  |
| groupOrSequenceHopping         | groupHopping            |  |  |
| resourceType CHOICE {          |                         |  |  |
| aperiodic SEQUENCE {           |                         |  |  |
| }                              |                         |  |  |
| }                              |                         |  |  |
| sequenceld                     | 0                       |  |  |
| spatialRelationInfo SEQUENCE { | SRS-SpatialRelationInfo |  |  |
| servingCellId                  | Not present             |  |  |
| referenceSignal CHOICE {       |                         |  |  |
| ssb-Index                      | SSB-Index               |  |  |
| }                              |                         |  |  |
| }                              |                         |  |  |
| }                              |                         |  |  |
| tpc-Accumulation               | Not present             |  |  |
| }                              |                         |  |  |

| Condition   | Explanation                                       |
|-------------|---|
| 2TX_UL_MIMO | UL-MIMO test cases with 2 Tx antenna ports        |
| FR1_100MHz  | FR1 is used under the test. CBW is set to 100MHz. |
| FR2_100MHz  | FR2 is used under the test. CBW is set to 100MHz. |

– *SRS-RSRP-Range*

**Table 4.6.3-182A: SRS-RSRP-Range**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SRS-RSRP-Range-r16                           | FFS          |         |           |

– *SRS-TPC-CommandConfig*

**Table 4.6.3-183: SRS-TPC-CommandConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SRS-TPC-CommandConfig ::= SEQUENCE {         |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SSB-Index*

**Table 4.6.3-184: SSB-Index**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |         |           |
|--|--|---------|-----------|
| Information Element                          | Value/remark                                   | Comment | Condition |
| SSB-Index                                    | Set according to Table 4.4.2-2 for the NR Cell |         |           |

— **SSB-MTC**

**Table 4.6.3-185: SSB-MTC**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |                               |
|--|--------------|---------|-------------------------------|
| Information Element                          | Value/remark | Comment | Condition                     |
| SSB-MTC ::= SEQUENCE {                       |              |         |                               |
| periodicityAndOffset CHOICE {                |              |         |                               |
| sf20   | 0<br>10      |         | SIG AND<br>INTER-<br>FREQ_ODD |
| periodicityAndOffset CHOICE {                |              |         |                               |
| sf20   | 0<br>10      |         | SIG AND<br>INTER-<br>FREQ_ODD |
| }  |              |         |                               |
| duration                                     | sf2<br>sf3   |         | FR1<br>FR2                    |
| }  |              |         |                               |

| Condition      | Explanation  |
|----------------|--|
| INTER-FREQ_ODD | When the SFNoffset of inter frequency neighbour cell is odd number.<br>SFNoffset is defined in TS 38.523-3 [23]Table 7.1.5.2-1 |

**Table 4.6.3-186: SSB-MTC2**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SSB-MTC2 ::= SEQUENCE {                      |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— **SSB-PositionQCL-Relation**

**Table 4.6.3-186A: SSB-PositionQCL-Relation**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SSB-PositionQCL-Relation-r16                 | FFS          |         |           |

— *SSB-ToMeasure*

**Table 4.6.3-187: SSB-ToMeasure**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |         |  |
|--|--|---------|--|
| Information Element                          | Value/remark   | Comment | Condition  |
| SSB-ToMeasure ::= CHOICE {                   |  |         |  |
| shortBitmap                                  | 1100   |         | FR1 AND<br>(2.3GHz<FR<br>EQ<=3GHz<br>AND (FDD<br>OR (TDD<br>AND<br>SCS15)) OR<br>FREQ<=2.3<br>GHz) |
| mediumBitmap                                 | 11000000   |         | FR1 AND<br>(2.3GHz<FR<br>EQ<=3GHz<br>AND (TDD<br>AND<br>SCS30) OR<br>FREQ>3GH<br>z)                |
| longBitmap                                   | 11000000 00000000<br>00000000 00000000<br>00000000 00000000<br>00000000 00000000 |         | FR2  |
| }  |  |         |  |

| Condition         | Explanation                          |
|-------------------|--------------------------------------|
| FREQ<=2.3GHz      | Frequency range <= 2.4GHz            |
| 2.3GHz<FREQ<=3GHz | Frequency range > 2.3GHz and <= 3GHz |
| FREQ>3GHz         | Frequency range > 3GHz               |

— *SS-RSSI-Measurement*

**Table 4.6.3-187A: SS-RSSI-Measurement**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SS-RSSI-Measurement ::= SEQUENCE {           |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *SubcarrierSpacing*

**Table 4.6.3-188: SubcarrierSpacing**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |         |           |
|--|--|---------|-----------|
| Information Element                          | Value/remark   | Comment | Condition |
| SubcarrierSpacing                            | According to clause 6.2.3<br>for signalling test cases<br>and clause 4.3.1<br>otherwise. |         |           |

— *TAG-Config***Table 4.6.3-189: TAG-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.2               |              |         |           |
|--|--------------|---------|-----------|
| Information Element  | Value/remark | Comment | Condition |
| TAG-Config ::= SEQUENCE {                                  |              |         |           |
| tag-ToReleaseList  | Not present  |         |           |
| tag-ToAddModList SEQUENCE (SIZE (1..maxNrofTAGs)) OF TAG { | 1 entry      |         |           |
| TAG[1] SEQUENCE {  |              | entry 1 |           |
| tag-Id   | 0            |         |           |
| timeAlignmentTimer   | infinity     |         |           |
| }  |              |         |           |
| }  |              |         |           |
| }  |              |         |           |

— *TCI-State***Table 4.6.3-190: TCI-State**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| TCI-State ::= SEQUENCE {                     |              |         |           |
| tci-Stateld                                  | TCI-Stateld  |         |           |
| qcl-Type1 SEQUENCE {                         |              |         |           |
| cell   | Not present  |         |           |
| bwp-Id                                       | Not present  |         |           |
| referenceSignal CHOICE {                     |              |         |           |
| ssb  | SSB-Index    |         |           |
| }  |              |         |           |
| qcl-Type                                     | typeD        |         |           |
| }  |              |         |           |
| qcl-Type2                                    | Not present  |         |           |
| }  |              |         |           |

— *TCI-Stateld***Table 4.6.3-191: TCI-Stateld**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| TCI-Stateld                                  | 0            |         |           |

— *TDD-UL-DL-ConfigCommon*

**Table 4.6.3-192: TDD-UL-DL-ConfigCommon**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                       |         |   |
|--|-----------------------|---------|---|
| Information Element                          | Value/remark          | Comment | Condition   |
| TDD-UL-DL-ConfigCommon ::= SEQUENCE {        |                       |         |   |
| referenceSubcarrierSpacing                   | SubcarrierSpacing     |         |   |
| pattern1 SEQUENCE {                          |                       |         |   |
| dl-UL-TransmissionPeriodicity                | ms5<br>ms0p625<br>ms2 |         | FR1<br>SIG AND FR2<br>(RF OR RRM) AND FR2   |
| nrofDownlinkSlots                            | 7<br>3<br>14          |         | (FR1 AND SCS30) OR ((RF OR RRM) AND FR2 AND SCS120)<br>(FR1 AND SCS15) OR (FR2 AND SCS60) OR (SIG AND FR2 AND SCS120)<br>FR1 AND SCS60                          |
| nrofDownlinkSymbols                          | 6<br>10<br>12<br>4    |         | FR1 AND SCS30<br>(FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120))<br>(FR1 AND SCS60) OR ((RF OR RRM) AND FR2 AND SCS120)<br>(RF OR RRM) AND FR2 AND SCS60 |
| nrofUplinkSlots                              | 2<br>1<br>4<br>8      |         | FR1 AND SCS30<br>(FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120))<br>(FR1 AND SCS60) OR ((RF OR RRM) AND FR2 AND SCS60)<br>(RF OR RRM) AND FR2 AND SCS120 |
| nrofUplinkSymbols                            | 4                     |         | FR1 AND   |

|          |             |  |
|----------|-------------|--|
|          |             | SCS30  |
|          | 2           | (FR1 AND SCS15) OR (SIG AND FR2 AND (SCS60 OR SCS120)) |
|          | 8           | FR1 AND SCS60  |
|          | 0           | (RF OR RRM) AND FR2 AND (SCS60 OR SCS120)              |
| }        |             |  |
| pattern2 | Not present |  |
| }        |             |  |

– *TDD-UL-DL-ConfigDedicated*

**Table 4.6.3-192A: TDD-UL-DL-ConfigDedicated**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| TDD-UL-DL-ConfigDedicated ::= SEQUENCE {     |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *TrackingAreaCode*

**Table 4.6.3-193: TrackingAreaCode**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                   |                        |           |
|--|-------------------|------------------------|-----------|
| Information Element                          | Value/remark      | Comment                | Condition |
| TrackingAreaCode                             | See table 4.4.2-3 | BIT STRING (SIZE (24)) |           |

– *T-Reselection*

**Table 4.6.3-194: T-Reselection**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| T-Reselection                                | FFS          |         |           |

– *TimeToTrigger*

**Table 4.6.3-195: TimeToTrigger**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| TimeToTrigger                                | ms320        |         |           |

– *UAC-BarringInfoSetIndex*

**Table 4.6.3-196: UAC-BarringInfoSetIndex**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| UAC-BarringInfoSetIndex                      | FFS          |         |           |

– *UAC-BarringInfoSetList*

**Table 4.6.3-197: UAC-BarringInfoSetList**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| UAC-BarringInfoSetList                       | FFS          |         |           |

– *UAC-BarringPerCatList*

**Table 4.6.3-198: UAC-BarringPerCatList**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| UAC-BarringPerCatList                        | FFS          |         |           |

– *UAC-BarringPerPLMN-List*

**Table 4.6.3-199: UAC-BarringPerPLMN-List**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| UAC-BarringPerPLMN-List                      | FFS          |         |           |

– *UE-TimersAndConstants*

**Table 4.6.3-200: UE-TimersAndConstants**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| UE-TimersAndConstants ::= SEQUENCE {         |              |         |           |
| t300   | ms1000       |         |           |
| t301   | ms1000       |         |           |
| t310   | ms1000       |         |           |
| n310   | n1           |         |           |
| t311   | ms30000      |         |           |
| n311   | n1           |         |           |
| t319   | ms1000       |         |           |
| }  |              |         |           |

– *UL-DelayValueConfig*

**Table 4.6.3-200A: *UL-DelayValueConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| UL-DelayValueConfig-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *UplinkCancellation*

**Table 4.6.3-200B: *UplinkCancellation***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| UplinkCancellation-r16 ::= SEQUENCE {        |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *UplinkConfigCommon*

**Table 4.6.3-201: *UplinkConfigCommon***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                  |         |           |
|--|------------------|---------|-----------|
| Information Element                          | Value/remark     | Comment | Condition |
| UplinkConfigCommon ::= SEQUENCE {            |                  |         |           |
| frequencyInfoUL                              | FrequencyInfoUL  |         |           |
| initialUplinkBWP                             | BWP-UplinkCommon |         |           |
| timeAlignmentTimerCommon                     | infinity         |         |           |
| }  |                  |         |           |

– *UplinkConfigCommonSIB*

**Table 4.6.3-202: *UplinkConfigCommonSIB***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |  |         |           |
|--|--|---------|-----------|
| Information Element                          | Value/remark                               | Comment | Condition |
| UplinkConfigCommonSIB SEQUENCE {             |  |         |           |
| frequencyInfoUL                              | FrequencyInfoUL-SIB                        |         |           |
| initialUplinkBWP                             | BWP-UplinkCommon                           |         |           |
|  | BWP-UplinkCommon<br>with condition SUL_SUL |         | SUL_SUL   |
| timeAlignmentTimerCommon                     | infinity                                   |         |           |
| }  |  |         |           |

| Condition | Explanation   |
|-----------|---|
| SUL_SUL   | On the SUL carrier when supplementary carrier is configured |

– *UplinkTxDirectCurrentList*

**Table 4.6.3-203: *UplinkTxDirectCurrentList***

| Derivation Path: TS 38.331 [6], clause 6.3.2   |              |         |           |
|--|--------------|---------|-----------|
| Information Element  | Value/remark | Comment | Condition |
| UplinkTxDirectCurrentList ::= SEQUENCE (SIZE (1..maxNrofServingCells)) OF<br>UplinkTxDirectCurrentCell {<br>UplinkTxDirectCurrentCell[1] SEQUENCE {<br>FFS<br>}<br>} | 1 entry      |         |           |
|  |              | entry 1 |           |
|  |              |         |           |
|  |              |         |           |

– *ZP-CSI-RS-Resource*

**Table 4.6.3-204: *ZP-CSI-RS-Resource***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                                  |         |           |
|--|----------------------------------|---------|-----------|
| Information Element                          | Value/remark                     | Comment | Condition |
| ZP-CSI-RS-Resource ::= SEQUENCE {            |                                  |         |           |
| zp-CSI-RS-Resourceld                         | ZP-CSI-RS-Resourceld             |         |           |
| resourceMapping                              | CSI-RS-ResourceMapping           |         |           |
| periodicityAndOffset                         | CSI-ResourcePeriodicityAndOffset |         |           |
| }  |                                  |         |           |

– *ZP-CSI-RS-ResourceSet*

**Table 4.6.3-205: *ZP-CSI-RS-ResourceSet***

| Derivation Path: TS 38.331 [6], clause 6.3.2  |                         |         |           |
|---|-------------------------|---------|-----------|
| Information Element   | Value/remark            | Comment | Condition |
| ZP-CSI-RS-ResourceSet ::= SEQUENCE {  |                         |         |           |
| zp-CSI-RS-ResourceSetId   | ZP-CSI-RS-ResourceSetId |         |           |
| zp-CSI-RS-ResourceldList SEQUENCE (SIZE(1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF<br>ZP-CSI-RS-Resourceld {<br>ZP-CSI-RS-Resourceld[1]<br>}<br>} | 1 entry                 |         |           |
|   | FFS                     | entry 1 |           |
|   |                         |         |           |
|   |                         |         |           |

– *ZP-CSI-RS-ResourceSetId*

**Table 4.6.3-206: *ZP-CSI-RS-ResourceSetId***

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ZP-CSI-RS-ResourceSetId                      | FFS          |         |           |

#### 4.6.4 UE capability information elements

- *AccessStratumRelease*

**Table 4.6.4-1: AccessStratumRelease**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |   |         |           |
|--|---|---------|-----------|
| Information Element                          | Value/remark  | Comment | Condition |
| AccessStratumRelease                         | Same as indicated in TC applicability in TS 38.523-2 [19] |         |           |

- *BandCombinationList*

**Table 4.6.4-2: BandCombinationList**

| Derivation Path: TS 38.331 [6], clause 6.3.3                                  |                           |         |           |
|---|---------------------------|---------|-----------|
| Information Element   | Value/remark              | Comment | Condition |
| BandCombinationList ::= SEQUENCE (SIZE (1..maxBandComb)) OF BandCombination { | At least 1 entry          |         |           |
| BandCombination[1] SEQUENCE {   |                           | entry 1 |           |
| bandList SEQUENCE (SIZE (1..maxSimultaneousBands)) OF BandParameters {        | 1 entry                   |         |           |
| BandParameters[1] CHOICE {  |                           | entry 1 |           |
| eutra SEQUENCE {  |                           |         |           |
| bandEUTRA   | FreqBandIndicatorEUTRA    |         |           |
| ca-BandwidthClassDL-EUTRA   | Not checked               |         |           |
| ca-BandwidthClassUL-EUTRA   | Not checked               |         |           |
| }   |                           |         |           |
| nr SEQUENCE {   |                           |         |           |
| bandNR  | FreqBandIndicatorNR       |         |           |
| ca-BandwidthClassDL-NR  | Not checked               |         |           |
| ca-BandwidthClassUL-NR  | Not checked               |         |           |
| }   |                           |         |           |
| }   |                           |         |           |
| }   |                           |         |           |
| featureSetCombination   | Not checked               |         |           |
| ca-ParametersEUTRA  | Not checked               |         |           |
| ca-ParametersNR   | Not checked               |         |           |
| mrdc-Parameters   | Not checked               |         |           |
| supportedBandwidthCombinationSet  | BIT STRING (SIZE (1..32)) |         |           |
| powerClass-v1530  | Not Checked               |         |           |
| }   |                           |         |           |
| }   |                           |         |           |

- *BandCombinationListSidelink*

**Table 4.6.4-2A: BandCombinationListSidelink**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| BandParametersSidelink-r16 ::= SEQUENCE {    |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *CA-BandwidthClassEUTRA*

**Table 4.6.4-3: CA-BandwidthClassEUTRA**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CA-BandwidthClassEUTRA                       | Not checked  |         |           |

— *CA-BandwidthClassNR*

**Table 4.6.4-4: CA-BandwidthClassNR**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CA-BandwidthClassNR                          | Not checked  |         |           |

— *CA-ParametersEUTRA*

**Table 4.6.4-5: CA- ParametersEUTRA**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CA-ParametersEUTRA ::= SEQUENCE {            |              |         |           |
| multipleTimingAdvance                        | Not checked  |         |           |
| simultaneousRx-Tx                            | Not checked  |         |           |
| supportedNAICS-2CRS-AP                       | Not checked  |         |           |
| additionalRx-Tx-PerformanceReq               | Not checked  |         |           |
| ue-CA-PowerClass-N                           | Not checked  |         |           |
| supportedBandwidthCombinationSetEUTRA-v1530  | Not checked  |         |           |
| }  |              |         |           |

— *CA-ParametersNR*

**Table 4.6.4-6: CA- ParametersNR**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CA-ParametersNR ::= SEQUENCE {               |              |         |           |
| dummy  | Not checked  |         |           |
| parallelTxSRS-PUCCH-PUSCH                    | Not checked  |         |           |
| parallelTxPRACH-SRS-PUCCH-PUSCH              | Not checked  |         |           |
| simultaneousRxTxInterBandCA                  | Not checked  |         |           |
| simultaneousRxtxSUL                          | Not checked  |         |           |
| diffNumerologyAcrossPUCCH-Group              | Not checked  |         |           |
| diffNumerologyWithinPUCCH-GroupSmallerSCS    | Not checked  |         |           |
| supportedNumberTAG                           | Not checked  |         |           |
| }  |              |         |           |

– *CA-ParametersNRDC***Table 4.6.4-6AA: CA- ParametersNRDC**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CA-ParametersNRDC ::= SEQUENCE {             |              |         |           |
| ca-ParametersNR-ForDC                        | Not checked  |         |           |
| ca-ParametersNR-ForDC-v1540                  | Not checked  |         |           |
| ca-ParametersNR-ForDC-v1550                  | Not checked  |         |           |
| ca-ParametersNR-ForDC-v1560                  | Not checked  |         |           |
| featureSetCombinationDC                      | Not checked  |         |           |
| }  |              |         |           |

– *CarrierAggregationVariant***Table 4.6.4-6AB: CarrierAggregationVariant**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CarrierAggregationVariant ::= SEQUENCE {     |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *CodebookParameters*

**Table 4.6.4-6A: CodebookParameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3   |              |         |           |
|--|--------------|---------|-----------|
| Information Element  | Value/remark | Comment | Condition |
| CodebookParameters ::= SEQUENCE {  |              |         |           |
| type1 SEQUENCE {   |              |         |           |
| singlePanel SEQUENCE {   |              |         |           |
| supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource { | 1 entry      |         |           |
| SupportedCSI-RS-Resource[1] SEQUENCE {   |              | entry 1 |           |
| maxNumberTxPortsPerResource  | Not checked  |         |           |
| maxNumberResourcesPerBand  | Not checked  |         |           |
| totalNumberTxPortsPerBand  | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |
| modes  | Not checked  |         |           |
| maxNumberCSI-RS-PerResourceSet   | Not checked  |         |           |
| }  |              |         |           |
| multiPanel SEQUENCE {  |              |         |           |
| supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource { | 1 entry      |         |           |
| SupportedCSI-RS-Resource[1] SEQUENCE {   |              | entry 1 |           |
| maxNumberTxPortsPerResource  | Not checked  |         |           |
| maxNumberResourcesPerBand  | Not checked  |         |           |
| totalNumberTxPortsPerBand  | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |
| modes  | Not checked  |         |           |
| nrofPanels   | Not checked  |         |           |
| maxNumberCSI-RS-PerResourceSet   | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |
| type2 SEQUENCE {   |              |         |           |
| supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource { | 1 entry      |         |           |
| SupportedCSI-RS-Resource[1] SEQUENCE {   |              | entry 1 |           |
| maxNumberTxPortsPerResource  | Not checked  |         |           |
| maxNumberResourcesPerBand  | Not checked  |         |           |
| totalNumberTxPortsPerBand  | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |
| parameterLx  | Not checked  |         |           |
| amplitudeScalingType   | Not checked  |         |           |
| amplitudeSubsetRestriction   | Not checked  |         |           |
| }  |              |         |           |
| type2-PortSelection SEQUENCE {   |              |         |           |
| supportedCSI-RS-ResourceList SEQUENCE (SIZE (1.. maxNrofCSI-RS-Resources)) OF SupportedCSI-RS-Resource { | 1 entry      |         |           |
| SupportedCSI-RS-Resource[1] SEQUENCE {   |              | entry 1 |           |
| maxNumberTxPortsPerResource  | Not checked  |         |           |
| maxNumberResourcesPerBand  | Not checked  |         |           |
| totalNumberTxPortsPerBand  | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |
| parameterLx  | Not checked  |         |           |
| amplitudeScalingType   | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |

– *FeatureSetCombination*

**Table 4.6.4-7: FeatureSetCombination**

| Derivation Path: TS 38.331 [6], clause 6.3.3  |              |         |           |
|---|--------------|---------|-----------|
| Information Element   | Value/remark | Comment | Condition |
| FeatureSetCombination ::= SEQUENCE (SIZE (1..maxSimultaneousBands)) OF FeatureSetsPerBand { | 1 entry      |         |           |
| FeatureSetsPerBand[1] SEQUENCE (SIZE (1..maxFeatureSetsPerBand)) OF FeatureSet {            | 1 entry      | entry 1 |           |
| FeatureSet[1] CHOICE {  |              | entry 1 |           |
| nr SEQUENCE {   |              |         |           |
| downlinkSetNR   | Not checked  |         |           |
| uplinkSetNR   | Not checked  |         |           |
| }   |              |         |           |
| }   |              |         |           |
| }   |              |         |           |
| }   |              |         |           |

– *FeatureSetCombinationId*

**Table 4.6.4-8: FeatureSetCombinationId**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| FeatureSetCombinationId                      | Not checked  |         |           |

– *FeatureSetDownlink*

**Table 4.6.4-9: FeatureSetDownlink**

| Derivation Path: TS 38.331 [6], clause 6.3.3   |                     |         |           |
|--|---------------------|---------|-----------|
| Information Element  | Value/remark        | Comment | Condition |
| FeatureSetDownlink ::= SEQUENCE {  |                     |         |           |
| featureSetListPerDownlinkCC SEQUENCE (SIZE (1..maxNrofServingCells)) OF FeatureSetDownlinkPerCC-Id { | 1 entry             |         |           |
| FeatureSetDownlinkPerCC-Id[1]  | Not checked         | entry 1 |           |
| }  |                     |         |           |
| intraBandFreqSeparationDL  | FreqSeparationClass |         |           |
| scalingFactor  | Not checked         |         |           |
| crossCarrierSchedulingDL-OtherSCS  | Not checked         |         |           |
| scellWithoutSSB  | Not checked         |         |           |
| csi-RS-MeasSCellWithoutSSB   | Not checked         |         |           |
| dummy1   | Not checked         |         |           |
| type1-3-CSS  | Not checked         |         |           |
| pdcchMonitoringAnyOccasions  | Not checked         |         |           |
| dummy2   | Not checked         |         |           |
| ue-SpecificUL-DL-Assignment  | Not checked         |         |           |
| searchSpaceSharingCA-DL  | Not checked         |         |           |
| timeDurationForQCL SEQUENCE {  |                     |         |           |
| scs-60kHz  | Not checked         |         |           |
| scs-120kHz   | Not checked         |         |           |
| }  |                     |         |           |
| pdsch- ProcessingType1-DifferentTB-PerSlot SEQUENCE {  |                     |         |           |
| scs-15kHz  | Not checked         |         |           |
| scs-30kHz  | Not checked         |         |           |
| scs-60kHz  | Not checked         |         |           |
| scs-120kHz   | Not checked         |         |           |
| }  |                     |         |           |
| dummy3   | Not checked         |         |           |
| dummy4   | Not checked         |         |           |
| dummy5   | Not checked         |         |           |
| dummy6   | Not checked         |         |           |
| dummy7   | Not checked         |         |           |
| }  |                     |         |           |

– *FeatureSetDownlinkId*

**Table 4.6.4-10: FeatureSetDownlinkId**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| FeatureSetDownlinkId                         | Not checked  |         |           |

– *FeatureSetDownlinkPerCC*

**Table 4.6.4-11: FeatureSetDownlinkPerCC**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |                    |         |           |
|--|--------------------|---------|-----------|
| Information Element                          | Value/remark       | Comment | Condition |
| FeatureSetDownlinkPerCC ::= SEQUENCE {       |                    |         |           |
| supportedSubcarrierSpacingDL                 | Not checked        |         |           |
| supportedBandwidthDL                         | SupportedBandwidth |         |           |
| channelBW-90mhz                              | Not checked        |         |           |
| maxNumberMIMO-LayersPDSCH                    | MIMO-LayersDL      |         |           |
| supportedModulationOrderDL                   | ModulationOrder    |         |           |
| }  |                    |         |           |

– *FeatureSetDownlinkPerCC-Id*

**Table 4.6.4-12: FeatureSetDownlinkPerCC-Id**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| FeatureSetDownlinkPerCC-Id                   | Not checked  |         |           |

– *FeatureSetEUTRA-DownlinkId*

**Table 4.6.4-13: FeatureSetEUTRA-DownlinkId**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| FeatureSetEUTRA-DownlinkId                   | Not checked  |         |           |

– *FeatureSetEUTRA-UplinkId*

**Table 4.6.4-14: FeatureSetEUTRA-UplinkId**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| FeatureSetEUTRA-UplinkId                     | Not checked  |         |           |

— *FeatureSets*

**Table 4.6.4-15: FeatureSets**

| Derivation Path: TS 38.331 [6], clause 6.3.3   |   |  |           |
|--|---|--|-----------|
| Information Element  | Value/remark  | Comment  | Condition |
| FeatureSets ::= SEQUENCE {<br>featureSetsDownlink SEQUENCE (SIZE<br>(1..maxDownlinkFeatureSets)) OF<br>FeatureSetDownlink {<br>FeatureSetDownlink[1]<br>}<br>}<br>featureSetsDownlinkPerCC SEQUENCE (SIZE<br>(1..maxPerCC-FeatureSets)) OF<br>FeatureSetDownlinkPerCC {<br>FeatureSetDownlinkPerCC[1]<br>}<br>}<br>featureSetsUplink SEQUENCE (SIZE<br>(1..maxUplinkFeatureSets)) OF FeatureSetUplink {<br>FeatureSetUplink[1]<br>}<br>featureSetsUplinkPerCC SEQUENCE (SIZE<br>(1..maxPerCC-FeatureSets)) OF<br>FeatureSetUplinkPerCC {<br>FeatureSetUplinkPerCC[1]<br>}<br>} | 1 entry<br><br>1 entry<br><br>1 entry<br><br>1 entry<br><br>1 entry<br><br>1 entry<br><br>1 entry<br><br>1 entry<br><br>1 entry | entry 1<br><br>entry 1<br><br>entry 1<br><br>entry 1<br><br>entry 1<br><br>entry 1<br><br>entry 1<br><br>entry 1 |           |

– *FeatureSetUplink***Table 4.6.4-16: FeatureSetUplink**

| Derivation Path: TS 38.331 [6], clause 6.3.3  |                     |         |           |
|---|---------------------|---------|-----------|
| Information Element   | Value/remark        | Comment | Condition |
| FeatureSetUplink ::= SEQUENCE {   |                     |         |           |
| featureSetListPerUplinkCC SEQUENCE (SIZE (1.. maxNrofServingCells)) OF FeatureSetUplinkPerCC-Id | 1 entry             |         |           |
| {   |                     |         |           |
| FeatureSetUplinkPerCC-Id[1]   | Not checked         | entry 1 |           |
| }   |                     |         |           |
| scalingFactor   | Not checked         |         |           |
| crossCarrierSchedulingUL-OtherSCS   | Not checked         |         |           |
| intraBandFreqSeparationUL   | FreqSeparationClass |         |           |
| searchSpaceSharingCA-UL   | Not checked         |         |           |
| dummy1  | Not checked         |         |           |
| supportedSRS-Resources SEQUENCE {   |                     |         |           |
| maxNumberAperiodicSRS-PerBWP  | Not Checked         |         |           |
| maxNumberAperiodicSRS-PerBWP-PerSlot  | Not Checked         |         |           |
| maxNumberPeriodicSRS-PerBWP   | Not Checked         |         |           |
| maxNumberPeriodicSRS-PerBWP-PerSlot   | Not Checked         |         |           |
| maxNumberSemiPersistentSRS-PerBWP   | Not Checked         |         |           |
| maxNumberSemiPersistentSRS-PerBWP-PerSlot   | Not Checked         |         |           |
| maxNumberSRS-Ports-PerResource  | Not Checked         |         |           |
| }   |                     |         |           |
| twoPUCCH-Group  | Not checked         |         |           |
| dynamicSwitchSUL  | Not checked         |         |           |
| pusch- ProcessingType1-DifferentTB-PerSlot  |                     |         |           |
| SEQUENCE {  |                     |         |           |
| scs-15kHz   | Not checked         |         |           |
| scs-30kHz   | Not checked         |         |           |
| scs-60kHz   | Not checked         |         |           |
| scs-120kHz  | Not checked         |         |           |
| }   |                     |         |           |
| dummy2  | Not checked         |         |           |
| }   |                     |         |           |

– *FeatureSetUplinkId***Table 4.6.4-17: FeatureSetUplinkId**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| FeatureSetUplinkId                           | Not checked  |         |           |

– *FeatureSetUplinkPerCC*

**Table 4.6.4-18: FeatureSetUplinkPerCC**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |                    |         |           |
|--|--------------------|---------|-----------|
| Information Element                          | Value/remark       | Comment | Condition |
| FeatureSetUplinkPerCC ::= SEQUENCE {         |                    |         |           |
| supportedSubcarrierSpacingUL                 | Not checked        |         |           |
| supportedBandwidthUL                         | SupportedBandwidth |         |           |
| channelBW-90mhz                              | Not checked        |         |           |
| mimo-CB-PUSCH SEQUENCE {                     |                    |         |           |
| maxNumberMIMO-LayersCB-PUSCH                 | MIMO-LayersUL      |         |           |
| maxNumberSRS-ResourcePerSet                  | Not checked        |         |           |
| }  |                    |         |           |
| maxNumberMIMO-LayersNonCB-PUSCH              | MIMO-LayersUL      |         |           |
| supportedModulationOrderUL                   | ModulationOrder    |         |           |
| }  |                    |         |           |

– *FeatureSetUplinkPerCC-Id*

**Table 4.6.4-19: FeatureSetUplinkPerCC-Id**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| FeatureSetUplinkPerCC-Id                     | Not checked  |         |           |

– *FreqBandIndicatorEUTRA*

**Table 4.6.4-20: FreqBandIndicatorEUTRA**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |                                 |         |           |
|--|---------------------------------|---------|-----------|
| Information Element                          | Value/remark                    | Comment | Condition |
| FreqBandIndicatorEUTRA                       | EUTRA Operating band under test |         |           |

– *FreqBandList*

**Table 4.6.4-21: *FreqBandList***

| Derivation Path: TS 38.331 [6], clause 6.3.3                                |   |         |           |
|---|---|---------|-----------|
| Information Element   | Value/remark                                    | Comment | Condition |
| FreqBandList ::= SEQUENCE (SIZE (1..maxBandsMRDC)) OF FreqBandInformation { | Number of entries depends on the conditions     |         | EN-DC     |
| FreqBandInformation[1] CHOICE {   |   | entry 1 |           |
| bandInformationEUTRA SEQUENCE {   |   |         |           |
| bandEUTRA   | FreqBandIndicatorEUTRA                          |         |           |
| ca-BandwidthClassDL-EUTRA   | Not checked                                     |         |           |
| ca-BandwidthClassUL-EUTRA   | Not checked                                     |         |           |
| }   |   |         |           |
| }   |   |         |           |
| FreqBandInformation[2] CHOICE {   |   | entry 2 |           |
| bandInformationNR SEQUENCE {  |   |         |           |
| bandNR  | FreqBandIndicatorNR                             |         | NR        |
| maxBandwidthRequestedDL   | Not checked                                     |         |           |
| maxBandwidthRequestedUL   | Not checked                                     |         |           |
| maxCarriersRequestedDL  | Not checked                                     |         |           |
| maxCarriersRequestedUL  | Not checked                                     |         |           |
| }   |   |         |           |
| }   |   |         |           |
| FreqBandInformation[3] CHOICE {   |   | entry 3 |           |
| bandInformationNR SEQUENCE {  |   |         |           |
| bandNR  | FreqBandIndicatorNR with condition CA-InterBand |         |           |
| maxBandwidthRequestedDL   | Not checked                                     |         |           |
| maxBandwidthRequestedUL   | Not checked                                     |         |           |
| maxCarriersRequestedDL  | Not checked                                     |         |           |
| maxCarriersRequestedUL  | Not checked                                     |         |           |
| }   |   |         |           |
| }   |   |         |           |
| FreqBandInformation[1] CHOICE {   |   | entry 1 |           |
| bandInformationNR SEQUENCE {  |   |         |           |
| bandNR  | FreqBandIndicatorNR                             |         |           |
| maxBandwidthRequestedDL   | Not checked                                     |         |           |
| maxBandwidthRequestedUL   | Not checked                                     |         |           |
| maxCarriersRequestedDL  | Not checked                                     |         |           |
| maxCarriersRequestedUL  | Not checked                                     |         |           |
| }   |   |         |           |
| }   |   |         |           |
| FreqBandInformation[2] CHOICE {   |   | entry 2 |           |
| bandInformationNR SEQUENCE {  |   |         |           |
| bandNR  | FreqBandIndicatorNR with condition CA-InterBand |         |           |
| maxBandwidthRequestedDL   | Not checked                                     |         |           |
| maxBandwidthRequestedUL   | Not checked                                     |         |           |
| maxCarriersRequestedDL  | Not checked                                     |         |           |
| maxCarriersRequestedUL  | Not checked                                     |         |           |
| }   |   |         |           |
| }   |   |         |           |

| Condition    | Explanation                         |
|--------------|-------------------------------------|
| EN-DC        | E-UTRA-NR Dual Connectivity         |
| CA-InterBand | Used in NR CA Inter-band test cases |
| NR           | NG-RAN NR Radio Access              |

– *FreqSeparationClass*

**Table 4.6.4-22: *FreqSeparationClass***

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| FreqSeparationClass                          | Not checked  |         |           |

– *FreqSeparationClassDL-Only*

**Table 4.6.4-22A: *FreqSeparationClassDL-Only***

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| FreqSeparationClassDL-Only-r16               | FFS          |         |           |

– *HighSpeedParameters*

**Table 4.6.4-22B: *HighSpeedParameters***

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| HighSpeedParameters-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *IMS-Parameters*

**Table 4.6.4-23: *IMS-Parameters***

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| IMS-Parameters ::= SEQUENCE {                |              |         |           |
| ims-ParametersCommon SEQUENCE {              |              |         |           |
| voiceOverEUTRA-5GC                           | Not Checked  |         |           |
| }  |              |         |           |
| ims-ParametersFRX-Diff SEQUENCE {            |              |         |           |
| voiceOverNR                                  | Not Checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |

— *InterRAT-Parameters*

**Table 4.6.4-24: InterRAT-Parameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3  |                             |         |           |
|---|-----------------------------|---------|-----------|
| Information Element   | Value/remark                | Comment | Condition |
| InterRAT-Parameters ::= SEQUENCE {  |                             |         |           |
| eutra SEQUENCE {  |                             |         |           |
| supportedBandListEUTRA SEQUENCE (SIZE (1..maxBandsEUTRA)) OF FreqBandIndicatorEUTRA { | 1 entry                     |         |           |
| FreqBandIndicatorEUTRA[1]   | FreqBandIndicatorEUTRA<br>A | entry 1 |           |
| }   |                             |         |           |
| eutra-ParametersCommon SEQUENCE {   |                             |         |           |
| mfbi-EUTRA  | Not Checked                 |         |           |
| modifiedMPR-BehaviorEUTRA   | Not Checked                 |         |           |
| multiNS-Pmax-EUTRA  | Not Checked                 |         |           |
| rs-SINR-MeasEUTRA   | Not Checked                 |         |           |
| ne-DC   | Not Checked                 |         |           |
| nr-HO-ToEN-DC-r16   | Not Checked                 |         | >=Rel16   |
| }   |                             |         |           |
| eutra-ParametersXDD-Diff SEQUENCE {   |                             |         |           |
| rsrqMeasWidebandEUTRA   | Not Checked                 |         |           |
| }   |                             |         |           |
| }   |                             |         |           |
| }   |                             |         |           |

— *MAC-Parameters*

**Table 4.6.4-25: MAC-Parameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MAC-Parameters ::= SEQUENCE {                |              |         |           |
| mac-ParametersCommon SEQUENCE {              |              |         |           |
| lcp-Restriction                              | Not checked  |         |           |
| dummy  | Not checked  |         |           |
| lch-ToSCellRestriction                       | Not checked  |         |           |
| }  |              |         |           |
| mac-ParametersXDD-Diff SEQUENCE {            |              |         |           |
| skipUplinkTxDynamic                          | Not checked  |         |           |
| logicalChannelSR-DelayTimer                  | Not checked  |         |           |
| longDRX-Cycle                                | Not checked  |         |           |
| shortDRX-Cycle                               | Not checked  |         |           |
| multipleSR-Configurations                    | Not checked  |         |           |
| multipleConfiguredGrants                     | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |

— *MeasAndMobParameters*

**Table 4.6.4-26: MeasAndMobParameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasAndMobParameters ::= SEQUENCE {          |              |         |           |
| measAndMobParametersCommon SEQUENCE {        |              |         |           |
| supportedGapPattern                          | Not checked  |         |           |
| ssb-RLM                                      | Not checked  |         |           |
| ssb-AndCSI-RS-RLM                            | Not checked  |         |           |
| }  |              |         |           |
| measAndMobParametersXDD-Diff SEQUENCE {      |              |         |           |
| intraAndInterF-MeasAndReport                 | Not checked  |         |           |
| eventA-MeasAndReport                         | Not checked  |         |           |
| }  |              |         |           |
| MeasAndMobParametersFRX-Diff SEQUENCE {      |              |         |           |
| ss-SINR-Meas                                 | Not checked  |         |           |
| csi-RSRP-AndRSRQ-MeasWithSSB                 | Not checked  |         |           |
| csi-RSRP-AndRSRQ-MeasWithoutSSB              | Not checked  |         |           |
| csi-SINR-Meas                                | Not checked  |         |           |
| csi-RS-RLM                                   | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |

— *MeasAndMobParametersMRDC*

**Table 4.6.4-27: MeasAndMobParametersMRDC**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MeasAndMobParametersMRDC ::= SEQUENCE {      |              |         |           |
| measAndMobParametersMRDC-Common SEQUENCE {   |              |         |           |
| independentGapConfig                         | Not checked  |         |           |
| }  |              |         |           |
| measAndMobParametersMRDC-XDD-Diff SEQUENCE { |              |         |           |
| sfd-MeasPSCell                               | Not checked  |         |           |
| sfd-MeasNR-Cell                              | Not checked  |         |           |
| }  |              |         |           |
| measAndMobParametersMRDC-FRX-Diff SEQUENCE { |              |         |           |
| simultaneousRxDataSSB-DiffNumerology         | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |

— *MIMO-Layers*

**Table 4.6.4-28: MIMO-Layers**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MIMO-LayersDL                                | Not checked  |         |           |
| MIMO-LayersUL                                | Not checked  |         |           |

— *MIMO-ParametersPerBand***Table 4.6.4-29: MIMO-ParametersPerBand**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MIMO-ParametersPerBand ::= SEQUENCE {        |              |         |           |
| tci-StatePDSCH SEQUENCE {                    |              |         |           |
| maxNumberConfiguredTCIstatesPerCC            | Not checked  |         |           |
| maxNumberActiveTCI-PerBWP                    | Not checked  |         |           |
| }  |              |         |           |
| additionalActiveTCI-StatePDCCH               | Not checked  |         |           |
| pusch-TransCoherence                         | Not checked  |         |           |
| beamCorrespondenceWithoutUL-BeamSweeping     | Not checked  |         |           |
| periodicBeamReport                           | Not checked  |         |           |
| aperiodicBeamReport                          | Not checked  |         |           |
| sp-BeamReportPUCCH                           | Not checked  |         |           |
| sp-BeamReportPUSCH                           | Not checked  |         |           |
| dummy1                                       | Not checked  |         |           |
| maxNumberRxBeam                              | Not checked  |         |           |
| maxNumberRxTxBeamSwitchDL SEQUENCE {         |              |         |           |
| scs-15kHz                                    | Not checked  |         |           |
| scs-30kHz                                    | Not checked  |         |           |
| scs-60kHz                                    | Not checked  |         |           |
| scs-120kHz                                   | Not checked  |         |           |
| scs-240kHz                                   | Not checked  |         |           |
| }  |              |         |           |
| maxNumberNonGroupBeamReporting               | Not checked  |         |           |
| groupBeamReporting                           | Not checked  |         |           |
| uplinkBeamManagement SEQUENCE {              |              |         |           |
| maxNumberSRS-ResourcePerSet                  | Not checked  |         |           |
| maxNumberSRS-ResourceSet                     | Not checked  |         |           |
| }  |              |         |           |
| maxNumberCSI-RS-BFD                          | Not checked  |         |           |
| maxNumberSSB-BFD                             | Not checked  |         |           |
| maxNumberCSI-RS-SSB-CBD                      | Not checked  |         |           |
| dummy2                                       | Not checked  |         |           |
| twoPortsPTRS-UL                              | Not checked  |         |           |
| dummy5                                       | Not checked  |         |           |
| dummy3                                       | Not checked  |         |           |
| beamReportTiming SEQUENCE {                  |              |         |           |
| scs-15kHz                                    | Not checked  |         |           |
| scs-30kHz                                    | Not checked  |         |           |
| scs-60kHz                                    | Not checked  |         |           |
| scs-120kHz                                   | Not checked  |         |           |
| }  |              |         |           |
| ptrs-DensityRecommendationSetDL SEQUENCE {   |              |         |           |
| scs-15kHz                                    |              |         |           |
| frequencyDensity1                            | Not checked  |         |           |
| frequencyDensity2                            | Not checked  |         |           |
| timeDensity1                                 | Not checked  |         |           |
| timeDensity2                                 | Not checked  |         |           |
| timeDensity3                                 | Not checked  |         |           |
| }  |              |         |           |
| scs-30kHz                                    |              |         |           |
| frequencyDensity1                            | Not checked  |         |           |
| frequencyDensity2                            | Not checked  |         |           |
| timeDensity1                                 | Not checked  |         |           |
| timeDensity2                                 | Not checked  |         |           |
| timeDensity3                                 | Not checked  |         |           |
| }  |              |         |           |
| scs-60kHz                                    |              |         |           |
| frequencyDensity1                            | Not checked  |         |           |
| frequencyDensity2                            | Not checked  |         |           |
| timeDensity1                                 | Not checked  |         |           |

|  |             |  |  |
|--|-------------|--|--|
| timeDensity2                               | Not checked |  |  |
| timeDensity3                               | Not checked |  |  |
| }  |             |  |  |
| scs-120kHz                                 |             |  |  |
| frequencyDensity1                          | Not checked |  |  |
| frequencyDensity2                          | Not checked |  |  |
| timeDensity1                               | Not checked |  |  |
| timeDensity2                               | Not checked |  |  |
| timeDensity3                               | Not checked |  |  |
| }  |             |  |  |
| }  |             |  |  |
| ptrs-DensityRecommendationSetUL SEQUENCE { |             |  |  |
| scs-15kHz SEQUENCE {                       |             |  |  |
| frequencyDensity1                          | Not checked |  |  |
| frequencyDensity2                          | Not checked |  |  |
| timeDensity1                               | Not checked |  |  |
| timeDensity2                               | Not checked |  |  |
| timeDensity3                               | Not checked |  |  |
| sampleDensity1                             | Not checked |  |  |
| sampleDensity2                             | Not checked |  |  |
| sampleDensity3                             | Not checked |  |  |
| sampleDensity4                             | Not checked |  |  |
| sampleDensity5                             | Not checked |  |  |
| }  |             |  |  |
| scs-30kHz SEQUENCE {                       |             |  |  |
| frequencyDensity1                          | Not checked |  |  |
| frequencyDensity2                          | Not checked |  |  |
| timeDensity1                               | Not checked |  |  |
| timeDensity2                               | Not checked |  |  |
| timeDensity3                               | Not checked |  |  |
| sampleDensity1                             | Not checked |  |  |
| sampleDensity2                             | Not checked |  |  |
| sampleDensity3                             | Not checked |  |  |
| sampleDensity4                             | Not checked |  |  |
| sampleDensity5                             | Not checked |  |  |
| scs-60kHz SEQUENCE {                       |             |  |  |
| frequencyDensity1                          | Not checked |  |  |
| frequencyDensity2                          | Not checked |  |  |
| timeDensity1                               | Not checked |  |  |
| timeDensity2                               | Not checked |  |  |
| timeDensity3                               | Not checked |  |  |
| sampleDensity1                             | Not checked |  |  |
| sampleDensity2                             | Not checked |  |  |
| sampleDensity3                             | Not checked |  |  |
| sampleDensity4                             | Not checked |  |  |
| sampleDensity5                             | Not checked |  |  |
| scs-120kHz SEQUENCE {                      |             |  |  |
| frequencyDensity1                          | Not checked |  |  |
| frequencyDensity2                          | Not checked |  |  |
| timeDensity1                               | Not checked |  |  |
| timeDensity2                               | Not checked |  |  |
| timeDensity3                               | Not checked |  |  |
| sampleDensity1                             | Not checked |  |  |
| sampleDensity2                             | Not checked |  |  |
| sampleDensity3                             | Not checked |  |  |
| sampleDensity4                             | Not checked |  |  |
| sampleDensity5                             | Not checked |  |  |
| }  |             |  |  |
| dummy4                                     | Not checked |  |  |
| aperiodicTRS                               | Not checked |  |  |
| }  |             |  |  |

— *ModulationOrder*

**Table 4.6.4-30: ModulationOrder**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ModulationOrder                              | Not checked  |         |           |

— *MRDC-Parameters*

**Table 4.6.4-31: MRDC-Parameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| MRDC-Parameters ::= SEQUENCE {               |              |         |           |
| singleUL-Transmission                        | Not checked  |         |           |
| dynamicPowerSharingENDC                      | Not checked  |         |           |
| tdm-Pattern                                  | Not checked  |         |           |
| ul-SharingEUTRA-NR                           | Not checked  |         |           |
| ul-SwitchingTimeEUTRA-NR                     | Not checked  |         |           |
| simultaneousRxTxInterBandENDC                | Not checked  |         |           |
| asyncIntraBandENDC                           | Not checked  |         |           |
| }  |              |         |           |

— *NRDC-Parameters***Table 4.6.4-31A: NRDC-Parameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |                                   |         |           |
|--|-----------------------------------|---------|-----------|
| Information Element                          | Value/remark                      | Comment | Condition |
| NRDC-Parameters ::= SEQUENCE {               |                                   |         |           |
| measAndMobParametersNRDC                     | Not checked                       |         |           |
| generalParametersNRDC SEQUENCE {             |                                   |         |           |
| splitSRB-WithOneUL-Path                      | Not checked                       |         |           |
| splitDRB-withUL-Both-MCG-SCG                 | Not checked                       |         |           |
| srb3   | Not checked                       |         |           |
| v2x-EUTRA                                    | Not checked                       |         |           |
| }  |                                   |         |           |
| fdd-Add-UE-NRDC-Capabilities SEQUENCE {      |                                   |         |           |
| measAndMobParametersMRDC-XDD-Diff            |                                   |         |           |
| SEQUENCE {                                   |                                   |         |           |
| sftd-MeasPSCell                              | Not checked                       |         |           |
| sftd-MeasNR-Cell                             | Not checked                       |         |           |
| }  |                                   |         |           |
| generalParametersMRDC SEQUENCE {             |                                   |         |           |
| splitSRB-WithOneUL-Path                      | Not checked                       |         |           |
| splitDRB-withUL-Both-MCG-SCG                 | Not checked                       |         |           |
| srb3   | Not checked                       |         |           |
| v2x-EUTRA-v1530                              | Not checked                       |         |           |
| }  |                                   |         |           |
| }  |                                   |         |           |
| tdd-Add-UE-NRDC-Capabilities SEQUENCE {      |                                   |         |           |
| measAndMobParametersMRDC-XDD-Diff            |                                   |         |           |
| SEQUENCE {                                   |                                   |         |           |
| sftd-MeasPSCell                              | Not checked                       |         |           |
| sftd-MeasNR-Cell                             | Not checked                       |         |           |
| }  |                                   |         |           |
| generalParametersMRDC SEQUENCE {             |                                   |         |           |
| splitSRB-WithOneUL-Path                      | Not checked                       |         |           |
| splitDRB-withUL-Both-MCG-SCG                 | Not checked                       |         |           |
| srb3   | Not checked                       |         |           |
| v2x-EUTRA-v1530                              | Not checked                       |         |           |
| }  |                                   |         |           |
| }  |                                   |         |           |
| fr1-Add-UE-NRDC-Capabilities SEQUENCE {      | UE-MRDC-<br>CapabilityAddFRX-Mode |         |           |
| measAndMobParametersMRDC-FRX-Diff            |                                   |         |           |
| SEQUENCE {                                   |                                   |         |           |
| simultaneousRxDataSSB-DiffNumerology         | Not checked                       |         |           |
| }  |                                   |         |           |
| }  |                                   |         |           |
| fr2-Add-UE-NRDC-Capabilities SEQUENCE {      |                                   |         |           |
| measAndMobParametersMRDC-FRX-Diff            |                                   |         |           |
| SEQUENCE {                                   |                                   |         |           |
| simultaneousRxDataSSB-DiffNumerology         | Not checked                       |         |           |
| }  |                                   |         |           |
| }  |                                   |         |           |
| lateNonCriticalExtension                     | Not checked                       |         |           |
| nonCriticalExtension                         | Not checked                       |         |           |
| }  |                                   |         |           |

— *OLPC-SRS-Pos*

**Table 4.6.4-31B: OLPC-SRS-Pos**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| OLPC-SRS-Pos-r16 ::= SEQUENCE {              |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *PDCP-Parameters*

**Table 4.6.4-32: PDCP-Parameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PDCP-Parameters ::= SEQUENCE {               |              |         |           |
| supportedROHC-Profiles SEQUENCE {            |              |         |           |
| profile0x0000                                | Not checked  |         |           |
| profile0x0001                                | Not checked  |         |           |
| profile0x0002                                | Not checked  |         |           |
| profile0x0003                                | Not checked  |         |           |
| profile0x0004                                | Not checked  |         |           |
| profile0x0006                                | Not checked  |         |           |
| profile0x0101                                | Not checked  |         |           |
| profile0x0102                                | Not checked  |         |           |
| profile0x0103                                | Not checked  |         |           |
| profile0x0104                                | Not checked  |         |           |
| }  |              |         |           |
| maxNumberROHC-ContextSessions                | Not checked  |         |           |
| uplinkOnlyROHC-Profiles                      | Not checked  |         |           |
| continueROHC-Context                         | Not checked  |         |           |
| outOfOrderDelivery                           | Not checked  |         |           |
| shortSN                                      | Not checked  |         |           |
| pdcp-DuplicationSRB                          | Not checked  |         |           |
| pdcp-DuplicationMCG-OrSCG-DRB                | Not checked  |         |           |
| }  |              |         |           |

— *PDCP-ParametersMRDC*

**Table 4.6.4-33: PDCP-ParametersMRDC**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PDCP-ParametersMRDC ::= SEQUENCE {           |              |         |           |
| pdcp-DuplicationSplitSRB                     | Not checked  |         |           |
| pdcp-DuplicationSplitDRB                     | Not checked  |         |           |
| }  |              |         |           |

— *Phy-Parameters*

**Table 4.6.4-34: Phy-Parameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| Phy-Parameters ::= SEQUENCE {                |              |         |           |
| phy-ParametersCommon SEQUENCE {              |              |         |           |
| csi-RS-CFRA-ForHO                            | Not checked  |         |           |
| dynamicPRB-BundlingDL                        | Not checked  |         |           |
| sp-CSI-ReportPUCCH                           | Not checked  |         |           |
| sp-CSI-ReportPUSCH                           | Not checked  |         |           |
| nzp-CSI-RS-IntefMgmt                         | Not checked  |         |           |
| type2-SP-CSI-Feedback-LongPUCCH              | Not checked  |         |           |
| precoderGranularityCORESET                   | Not checked  |         |           |
| dynamicHARQ-ACK-Codebook                     | Not checked  |         |           |
| semiStaticHARQ-ACK-Codebook                  | Not checked  |         |           |
| spatialBundlingHARQ-ACK                      | Not checked  |         |           |
| dynamicBetaOffsetInd-HARQ-ACK-CSI            | Not checked  |         |           |
| pucch-Repetition-F1-3-4                      | Not checked  |         |           |
| ra-Type0-PUSCH                               | Not checked  |         |           |
| dynamicSwitchRA-Type0-1-PDSCH                | Not checked  |         |           |
| dynamicSwitchRA-Type0-1-PUSCH                | Not checked  |         |           |
| pdsch-MappingTypeA                           | Not checked  |         |           |
| pdsch-MappingTypeB                           | Not checked  |         |           |
| interleavingVRB-ToPRB-PDSCH                  | Not checked  |         |           |
| interSlotFreqHopping-PUSCH                   | Not checked  |         |           |
| type1-PUSCH-RepetitionMultiSlots             | Not checked  |         |           |
| type2-PUSCH-RepetitionMultiSlots             | Not checked  |         |           |
| pusch-RepetitionMultiSlots                   | Not checked  |         |           |
| pdsch-RepetitionMultiSlots                   | Not checked  |         |           |
| downlinkSPS                                  | Not checked  |         |           |
| configuredUL-GrantType1                      | Not checked  |         |           |
| configuredUL-GrantType2                      | Not checked  |         |           |
| pre-EmptIndication-DL                        | Not checked  |         |           |
| cbg-TransIndication-DL                       | Not checked  |         |           |
| cbg-TransIndication-UL                       | Not checked  |         |           |
| cbg-FlushIndication-DL                       | Not checked  |         |           |
| dynamicHARQ-ACK-CodeB-CBG-Retx-DL            | Not checked  |         |           |
| rateMatchingResrcSetSemi-Static              | Not checked  |         |           |
| rateMatchingResrcSetDynamic                  | Not checked  |         |           |
| bwp-SwitchingDelay                           | Not checked  |         |           |
| }  |              |         |           |
| phy-ParametersXDD-Diff SEQUENCE {            |              |         |           |
| dynamicSFI                                   | Not checked  |         |           |
| twoPUCCH-F0-2-ConsecSymbols                  | Not checked  |         |           |
| twoDifferentTPC-Loop-PUSCH                   | Not checked  |         |           |
| twoDifferentTPC-Loop-PUCCH                   | Not checked  |         |           |
| }  |              |         |           |
| phy-ParametersFRX-Diff SEQUENCE {            |              |         |           |
| dynamicSFI                                   | Not checked  |         |           |
| dummy1                                       | Not checked  |         |           |
| twoFL-DMRS                                   | Not checked  |         |           |
| dummy2                                       | Not checked  |         |           |
| dummy3                                       | Not checked  |         |           |
| supportedDMRS-TypeDL                         | Not checked  |         |           |
| supportedDMRS-TypeUL                         | Not checked  |         |           |
| semiOpenLoopCSI                              | Not checked  |         |           |
| csi-ReportWithoutPMI                         | Not checked  |         |           |
| csi-ReportWithoutCQI                         | Not checked  |         |           |
| onePortsPTRS                                 | Not checked  |         |           |
| twoPUCCH-F0-2-ConsecSymbols                  | Not checked  |         |           |
| pucch-F2-WithFH                              | Not checked  |         |           |
| pucch-F3-WithFH                              | Not checked  |         |           |
| pucch-F4-WithFH                              | Not checked  |         |           |

|   |             |  |  |
|---|-------------|--|--|
| freqHoppingPUCCH-F0-2                   | Not checked |  |  |
| freqHoppingPUCCH-F1-3-4                 | Not checked |  |  |
| mux-SR-HARQ-ACK-CSI-PUCCH- MultiPerSlot | Not checked |  |  |
| uci-CodeBlockSegmentation               | Not checked |  |  |
| onePUCCH-LongAndShortFormat             | Not checked |  |  |
| twoPUCCH-AnyOthersInSlot                | Not checked |  |  |
| intraSlotFreqHopping-PUSCH              | Not checked |  |  |
| pusch-LBRM                              | Not checked |  |  |
| pdcch-BlindDetectionCA                  | Not checked |  |  |
| tpc-PUSCH-RNTI                          | Not checked |  |  |
| tpc-PUCCH-RNTI                          | Not checked |  |  |
| tpc-SRS-RNTI                            | Not checked |  |  |
| absoluteTPC-Command                     | Not checked |  |  |
| twoDifferentTPC-Loop-PUSCH              | Not checked |  |  |
| twoDifferentTPC-Loop-PUCCH              | Not checked |  |  |
| pusch-HalfPi-BPSK                       | Not checked |  |  |
| pucch-F3-4-HalfPi-BPSK                  | Not checked |  |  |
| almostContiguousCP-OFDM-UL              | Not checked |  |  |
| sp-CSI-RS                               | Not checked |  |  |
| sp-CSI-IM                               | Not checked |  |  |
| tdd-MultiDL-UL-SwitchPerSlot            | Not checked |  |  |
| multipleCORESET                         | Not checked |  |  |
| }                                       |             |  |  |
| phy-ParametersFR1 SEQUENCE {            |             |  |  |
| pdcchMonitoringSingleOccasion           | Not checked |  |  |
| scs-60kHz                               | Not checked |  |  |
| pdsch-256QAM-FR1                        | Not checked |  |  |
| pdsch-RE-MappingFR1- PerSymbol          | Not checked |  |  |
| }                                       |             |  |  |
| phy-ParametersFR2 SEQUENCE {            |             |  |  |
| dummy                                   | Not checked |  |  |
| pdsch-RE-MappingFR2- PerSymbol          | Not checked |  |  |
| }                                       |             |  |  |
| }                                       |             |  |  |

### – *Phy-ParametersMRDC*

**Table 4.6.4-35: Phy-ParametersMRDC**

| Derivation Path: TS 38.331 [6], clause 6.3.3  |              |         |           |
|---|--------------|---------|-----------|
| Information Element   | Value/remark | Comment | Condition |
| Phy-ParametersMRDC ::= SEQUENCE {   |              |         |           |
| naics-Capability-List SEQUENCE (SIZE (1..maxNrofNAICS-Entries)) OF NAICS-Capability-Entry { | 1 entry      |         |           |
| NAICS-Capability-Entry[1] SEQUENCE {  |              | entry 1 |           |
| numberOfNAICS-CapableCC   | Not checked  |         |           |
| numberOfAggregatedPRB   | Not checked  |         |           |
| }   |              |         |           |
| }   |              |         |           |

### – *PowSav-Parameters*

**Table 4.6.4-35A: PowSav-Parameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PowSav-Parameters-r16 ::= SEQUENCE {         |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *ProcessingParameters*

**Table 4.6.4-36: ProcessingParameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| ProcessingParameters ::= SEQUENCE {          |              |         |           |
| fallback                                     | Not checked  |         |           |
| differentTB-PeRSlot SEQUENCE {               |              |         |           |
| upto1  | Not checked  |         |           |
| upto2  | Not checked  |         |           |
| upto4  | Not checked  |         |           |
| upto7  | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |

– *RAT-Type*

**Table 4.6.4-37: RAT-Type**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RAT-Type                                     | nr           |         |           |
|  | eutra-nr     |         | EN-DC     |

| Condition | Explanation                 |
|-----------|-----------------------------|
| EN-DC     | E-UTRA-NR Dual Connectivity |

— *RF-Parameters***Table 4.6.4-38: RF-Parameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3                  |                     |         |                  |
|---|---------------------|---------|------------------|
| Information Element   | Value/remark        | Comment | Condition        |
| RF-Parameters ::= SEQUENCE {                                  |                     |         |                  |
| supportedBandListNR SEQUENCE (SIZE (1..maxBands)) OF BandNR { | At least 1 entry    |         |                  |
| BandNR[1] SEQUENCE {  |                     | entry 1 |                  |
| bandNR  | FreqBandIndicatorNR |         |                  |
| modifiedMPR-Behaviour   | Not checked         |         |                  |
| mimo-ParametersPerBand  | Not checked         |         |                  |
| extendedCP  | Not checked         |         |                  |
| multipleTCI   | Not checked         |         |                  |
| bwp-WithoutRestriction  | Not checked         |         |                  |
| bwp-SameNumerology  | Not checked         |         |                  |
| bwp-DiffNumerology  | Not checked         |         |                  |
| crossCarrierScheduling-SameSCS                                | Not checked         |         |                  |
| pdsch-256QAM-FR2  | Not checked         |         |                  |
| pusch-256QAM  | Not checked         |         |                  |
| ue-PowerClass   | Not checked         |         |                  |
| rateMatchingLTE-CRS   | Not checked         |         |                  |
| channelBWs-DL CHOICE {  |                     |         |                  |
| fr1 SEQUENCE {  |                     |         |                  |
| scs-15kHz   | Not checked         |         |                  |
| scs-30kHz   | Not checked         |         |                  |
| scs-60kHz   | Not checked         |         |                  |
| }   |                     |         |                  |
| fr2 SEQUENCE {  |                     |         |                  |
| scs-60kHz   | Not checked         |         |                  |
| scs-120kHz  | Not checked         |         |                  |
| }   |                     |         |                  |
| }   |                     |         |                  |
| channelBWs-UL CHOICE {  |                     |         |                  |
| fr1 SEQUENCE {  |                     |         |                  |
| scs-15kHz   | Not checked         |         |                  |
| scs-30kHz   | Not checked         |         |                  |
| scs-60kHz   | Not checked         |         |                  |
| }   |                     |         |                  |
| fr2 SEQUENCE {  |                     |         |                  |
| scs-60kHz   | Not checked         |         |                  |
| scs-120kHz  | Not checked         |         |                  |
| }   |                     |         |                  |
| }   |                     |         |                  |
| }   |                     |         |                  |
| }   |                     |         |                  |
| }   |                     |         |                  |
| supportedBandCombinationList                                  | Not checked         |         |                  |
| appliedFreqBandListFilter                                     | Not present         |         |                  |
|   | FreqBandList        |         | FILTER_REQUESTED |
| }   |                     |         |                  |

| Condition        | Explanation   |
|------------------|---|
| FILTER_REQUESTED | This condition shall be set to true when UE is requested to filter the information via 'capabilityRequestFilter' IE in the NR5GC UECapabilityEnquiry message or via 'requestedFreqBandsNR-MRDC' IE in the EN-DC UECapabilityEnquiry message |

— *RF-ParametersMRDC*

**Table 4.6.4-39: RF-ParametersMRDC**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |                     |         |           |
|--|---------------------|---------|-----------|
| Information Element                          | Value/remark        | Comment | Condition |
| RF-ParametersMRDC ::= SEQUENCE {             |                     |         |           |
| supportedBandCombinationList                 | BandCombinationList |         |           |
| appliedFreqBandListFilter                    | FreqBandList        |         |           |
| }  |                     |         |           |

— *RLC-Parameters*

**Table 4.6.4-40: RLC-Parameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RLC-Parameters ::= SEQUENCE {                |              |         |           |
| am-WithShortSN                               | Not checked  |         |           |
| um-WithShortSN                               | Not checked  |         |           |
| um-WithLongSN                                | Not checked  |         |           |
| }  |              |         |           |

— *SDAP-Parameters*

**Table 4.6.4-41: SDAP-Parameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SDAP-Parameters ::= SEQUENCE {               |              |         |           |
| as-ReflectiveQoS                             | Not checked  |         |           |
| }  |              |         |           |

— *SidelinkParameters*

**Table 4.6.4-41A: SidelinkParameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SidelinkParameters-r16 ::= SEQUENCE {        |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *SON-Parameters*

**Table 4.6.4-41B: SON-Parameters**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SON-Parameters-r16 ::= SEQUENCE {            |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SpatialRelationsSRS-Pos*

**Table 4.6.4-41C: *SpatialRelationsSRS-Pos***

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SpatialRelationsSRS-Pos-r16 ::= SEQUENCE {   |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SRS-SwitchingTimeNR*

**Table 4.6.4-42: *SRS-SwitchingTimeNR***

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SRS-SwitchingTimeNR ::= SEQUENCE {           |              |         |           |
| switchingTimeDL                              | Not checked  |         |           |
| switchingTimeUL                              | Not checked  |         |           |
| }  |              |         |           |

– *SRS-SwitchingTimeEUTRA*

**Table 4.6.4-43: *SRS-SwitchingTimeEUTRA***

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SRS-SwitchingTimeEUTRA ::= SEQUENCE {        |              |         |           |
| switchingTimeDL                              | Not checked  |         |           |
| switchingTimeUL                              | Not checked  |         |           |
| }  |              |         |           |

– *SupportedBandwidth*

**Table 4.6.4-44: *SupportedBandwidth***

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SupportedBandwidth ::= CHOICE {              |              |         |           |
| fr1  | Not checked  |         | FR1       |
| fr2  | Not checked  |         | FR2       |
| }  |              |         |           |

– *UE-BasedPerfMeas-Parameters*

**Table 4.6.4-44A: *UE-BasedPerfMeas-Parameters***

| Derivation Path: TS 38.331 [6], clause 6.3.3   |              |         |           |
|--|--------------|---------|-----------|
| Information Element                            | Value/remark | Comment | Condition |
| UE-BasedPerfMeas-Parameters-r16 ::= SEQUENCE { |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *UE-CapabilityRAT-ContainerList*

**Table 4.6.4-45: UE-CapabilityRAT-ContainerList**

| Derivation Path: TS 38.331 [6], clause 6.3.3   |                    |         |           |
|--|--------------------|---------|-----------|
| Information Element  | Value/remark       | Comment | Condition |
| UE-CapabilityRAT-ContainerList ::= SEQUENCE (SIZE (0.. maxRAT-CapabilityContainers)) OF UE-CapabilityRAT-Container { | 1 entry            |         |           |
| UE-CapabilityRAT-Container[1] SEQUENCE {   |                    | entry 1 |           |
| rat-Type   | RAT-Type           |         |           |
| ue-CapabilityRAT-Container   | UE-NR-Capability   |         |           |
| ue-CapabilityRAT-Container   | UE-MRDC-Capability |         | EN-DC     |
| }  |                    |         |           |
| }  |                    |         |           |

– *UE-CapabilityRAT-RequestList*

**Table 4.6.4-46: UE-CapabilityRAT-RequestList**

| Derivation Path: TS 38.331 [6], clause 6.3.3   |                              |  |           |
|--|------------------------------|--|-----------|
| Information Element  | Value/remark                 | Comment  | Condition |
| UE-CapabilityRAT-RequestList ::= SEQUENCE (SIZE (0.. maxRAT-CapabilityContainers)) OF UE-CapabilityRAT-Request { | 1 entry                      |  |           |
| UE-CapabilityRAT-Request[1] SEQUENCE {   |                              | entry 1  |           |
| rat-Type   | RAT-Type                     |  |           |
| capabilityRequestFilter  | UE-CapabilityRequestFilterNR | OCTET STRING (CONTAINING UE-CapabilityRequestFilterNR) |           |
| }  |                              |  |           |
| }  |                              |  |           |

– *UE-CapabilityRequestFilterCommon*

**Table 4.6.4-46A: UE-CapabilityRequestFilterCommon**

| Derivation Path: TS 38.331 [6], clause 6.3.3    |              |         |           |
|---|--------------|---------|-----------|
| Information Element                             | Value/remark | Comment | Condition |
| UE-CapabilityRequestFilterCommon ::= SEQUENCE { |              |         |           |
| mrdc-Request SEQUENCE {                         |              |         |           |
| omitEN-DC                                       | Not checked  |         |           |
| includeNR-DC                                    | Not checked  |         |           |
| includeNE-DC                                    | Not checked  |         |           |
| }   |              |         |           |
| }   |              |         |           |

– *UE-CapabilityRequestFilterNR***Table 4.6.4-47: UE-CapabilityRequestFilterNR**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| UE-CapabilityRequestFilterNR ::= SEQUENCE {  |              |         |           |
| frequencyBandListFilter                      | FreqBandList |         |           |
| nonCriticalExtension SEQUENCE {              | Not present  |         |           |
| srs-SwitchingTimeRequest                     | Not present  |         |           |
| nonCriticalExtension SEQUENCE {              |              |         |           |
| srs-SwitchingTimeRequest                     | Not present  |         |           |
| nonCriticalExtension                         | Not present  |         |           |
| }  |              |         |           |
| }  |              |         |           |
| }  |              |         |           |

– *UE-MRDC-Capability***Table 4.6.4-48: UE-MRDC-Capability**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |                   |         |           |
|--|-------------------|---------|-----------|
| Information Element                          | Value/remark      | Comment | Condition |
| UE-MRDC-Capability ::= SEQUENCE {            |                   |         |           |
| measAndMobParametersMRDC                     | Not checked       |         |           |
| phy-ParametersMRDC-v1530                     | Not checked       |         |           |
| rf-ParametersMRDC                            | RF-ParametersMRDC |         |           |
| generalParametersMRDC SEQUENCE {             |                   |         |           |
| splitSRB-WithOneUL-Path                      | Not checked       |         |           |
| splitDRB-withUL-Both-MCG-SCG                 | Not checked       |         |           |
| srb3   | Not checked       |         |           |
| v2x-EUTRA                                    | Not checked       |         |           |
| }  |                   |         |           |
| fdd-Add-UE-MRDC-Capabilities SEQUENCE {      |                   |         |           |
| measAndMobParametersMRDC-XDD-Diff            |                   |         |           |
| SEQUENCE {                                   |                   |         |           |
| sftd-MeasPSCell                              | Not checked       |         |           |
| sftd-MeasNR-Cell                             | Not checked       |         |           |
| }  |                   |         |           |
| generalParametersMRDC SEQUENCE {             |                   |         |           |
| splitSRB-WithOneUL-Path                      | Not checked       |         |           |
| splitDRB-withUL-Both-MCG-SCG                 | Not checked       |         |           |
| srb3   | Not checked       |         |           |
| v2x-EUTRA-v1530                              | Not checked       |         |           |
| }  |                   |         |           |
| }  |                   |         |           |
| tdd-Add-UE-MRDC-Capabilities SEQUENCE {      |                   |         |           |
| measAndMobParametersMRDC-XDD-Diff            |                   |         |           |
| SEQUENCE {                                   |                   |         |           |
| sftd-MeasPSCell                              | Not checked       |         |           |
| sftd-MeasNR-Cell                             | Not checked       |         |           |
| }  |                   |         |           |
| generalParametersMRDC SEQUENCE {             |                   |         |           |
| splitSRB-WithOneUL-Path                      | Not checked       |         |           |
| splitDRB-withUL-Both-MCG-SCG                 | Not checked       |         |           |
| srb3   | Not checked       |         |           |
| v2x-EUTRA-v1530                              | Not checked       |         |           |
| }  |                   |         |           |
| }  |                   |         |           |
| fr1-Add-UE-MRDC-Capabilities SEQUENCE {      |                   |         |           |
| measAndMobParametersMRDC-FRX-Diff            |                   |         |           |
| SEQUENCE {                                   |                   |         |           |
| simultaneousRxDataSSB-DiffNumerology         | Not checked       |         |           |
| }  |                   |         |           |
| }  |                   |         |           |
| fr2-Add-UE-MRDC-Capabilities                 |                   |         |           |
| measAndMobParametersMRDC-FRX-Diff            |                   |         |           |
| SEQUENCE {                                   |                   |         |           |
| simultaneousRxDataSSB-DiffNumerology         | Not checked       |         |           |
| }  |                   |         |           |
| }  |                   |         |           |
| featureSetCombinations                       | Not checked       |         |           |
| pdcp-ParametersMRDC-v1530                    | Not checked       |         |           |
| lateNonCriticalExtension                     | Not checked       |         |           |
| nonCriticalExtension SEQUENCE {              |                   |         |           |
| UE-MRDC-Capability-v1560 SEQUENCE {          |                   |         |           |
| receivedFilters                              | Not checked       |         |           |
| measAndMobParametersMRDC-v1560 SEQUENCE {    |                   |         |           |
| measAndMobParametersMRDC-XDD-Diff-v1560      |                   |         |           |
| SEQUENCE {                                   |                   |         |           |
| sftd-MeasPSCell-NEDC                         | Not checked       |         |           |

|   |             |  |  |
|---|-------------|--|--|
| }   |             |  |  |
| }   |             |  |  |
| fdd-Add-UE-MRDC-Capabilities-v1560 SEQUENCE { |             |  |  |
| measAndMobParametersMRDC-XDD-Diff-v1560       |             |  |  |
| SEQUENCE {                                    |             |  |  |
| sftd-MeasPSCell-NEDC                          | Not checked |  |  |
| }   |             |  |  |
| }   |             |  |  |
| tdd-Add-UE-MRDC-Capabilities-v1560 SEQUENCE { |             |  |  |
| measAndMobParametersMRDC-XDD-Diff-v1560       |             |  |  |
| SEQUENCE {                                    |             |  |  |
| sftd-MeasPSCell-NEDC                          | Not checked |  |  |
| }   |             |  |  |
| }   |             |  |  |
| nonCriticalExtension                          | Not checked |  |  |
| }   |             |  |  |
| }   |             |  |  |
| }   |             |  |  |

– *UE-NR-Capability***Table 4.6.4-49: UE-NR-Capability**

| Derivation Path: TS 38.331 [6], clause 6.3.3 |                      |         |           |
|--|----------------------|---------|-----------|
| Information Element                          | Value/remark         | Comment | Condition |
| UE-NR-Capability ::= SEQUENCE {              |                      |         |           |
| accessStratumRelease                         | AccessStratumRelease |         |           |
| pdcp-Parameters                              | Not checked          |         |           |
| rlc-Parameters                               | Not checked          |         |           |
| mac-Parameters                               | Not checked          |         |           |
| phy-Parameters                               | Not checked          |         |           |
| rf-Parameters                                | RF-Parameters        |         |           |
| measAndMobParameters                         | Not checked          |         |           |
| fdd-Add-UE-NR-Capabilities SEQUENCE {        |                      |         |           |
| phy-ParametersXDD-Diff SEQUENCE {            |                      |         |           |
| dynamicSFI                                   | Not checked          |         |           |
| twoPUCCH-F0-2-ConsecSymbols                  | Not checked          |         |           |
| twoDifferentTPC-Loop-PUSCH                   | Not checked          |         |           |
| twoDifferentTPC-Loop-PUCCH                   | Not checked          |         |           |
| }  |                      |         |           |
| mac-ParametersXDD-Diff SEQUENCE {            |                      |         |           |
| skipUplinkTxDynamic                          | Not checked          |         |           |
| logicalChannelSR-DelayTimer                  | Not checked          |         |           |
| longDRX-Cycle                                | Not checked          |         |           |
| shortDRX-Cycle                               | Not checked          |         |           |
| multipleSR-Configurations                    | Not checked          |         |           |
| multipleConfiguredGrants                     | Not checked          |         |           |
| }  |                      |         |           |
| measAndMobParametersXDD-Diff SEQUENCE {      |                      |         |           |
| intraAndInterF-MeasAndReport                 | Not checked          |         |           |
| eventA-MeasAndReport                         | Not checked          |         |           |
| }  |                      |         |           |
| }  |                      |         |           |
| tdd-Add-UE-NR-Capabilities SEQUENCE {        |                      |         |           |
| phy-ParametersXDD-Diff SEQUENCE {            |                      |         |           |
| dynamicSFI                                   | Not checked          |         |           |
| twoPUCCH-F0-2-ConsecSymbols                  | Not checked          |         |           |
| twoDifferentTPC-Loop-PUSCH                   | Not checked          |         |           |
| twoDifferentTPC-Loop-PUCCH                   | Not checked          |         |           |
| }  |                      |         |           |
| mac-ParametersXDD-Diff SEQUENCE {            |                      |         |           |
| skipUplinkTxDynamic                          | Not checked          |         |           |
| logicalChannelSR-DelayTimer                  | Not checked          |         |           |
| longDRX-Cycle                                | Not checked          |         |           |
| shortDRX-Cycle                               | Not checked          |         |           |
| multipleSR-Configurations                    | Not checked          |         |           |
| multipleConfiguredGrants                     | Not checked          |         |           |
| }  |                      |         |           |
| measAndMobParametersXDD-Diff SEQUENCE {      |                      |         |           |
| intraAndInterF-MeasAndReport                 | Not checked          |         |           |
| eventA-MeasAndReport                         | Not checked          |         |           |
| }  |                      |         |           |
| fr1-Add-UE-NR-Capabilities SEQUENCE {        |                      |         |           |
| phy-ParametersFRX-Diff SEQUENCE {            |                      |         |           |
| dynamicSFI                                   | Not checked          |         |           |
| oneFL-DMRS-TwoAdditionalDMRS                 | Not checked          |         |           |
| twoFL-DMRS                                   | Not checked          |         |           |
| twoFL-DMRS-TwoAdditionalDMRS                 | Not checked          |         |           |
| oneFL-DMRS-ThreeAdditionalDMRS               | Not checked          |         |           |
| supportedDMRS-TypeDL                         | Not checked          |         |           |
| supportedDMRS-TypeUL                         | Not checked          |         |           |
| semiOpenLoopCSI                              | Not checked          |         |           |
| csi-ReportWithoutPMI                         | Not checked          |         |           |

|   |             |  |  |
|---|-------------|--|--|
| csi-ReportWithoutCQI                    | Not checked |  |  |
| onePortsPTRS                            | Not checked |  |  |
| twoPUCCH-F0-2-ConsecSymbols             | Not checked |  |  |
| pucch-F2-WithFH                         | Not checked |  |  |
| pucch-F3-WithFH                         | Not checked |  |  |
| pucch-F4-WithFH                         | Not checked |  |  |
| freqHoppingPUCCH-F0-2                   | Not checked |  |  |
| freqHoppingPUCCH-F1-3-4                 | Not checked |  |  |
| mux-SR-HARQ-ACK-CSI-PUCCH               | Not checked |  |  |
| uci-CodeBlockSegmentation               | Not checked |  |  |
| onePUCCH-LongAndShortFormat             | Not checked |  |  |
| twoPUCCH-AnyOthersInSlot                | Not checked |  |  |
| intraSlotFreqHopping-PUSCH              | Not checked |  |  |
| pusch-LBRM                              | Not checked |  |  |
| pdch-BlindDetectionCA                   | Not checked |  |  |
| tpc-PUSCH-RNTI                          | Not checked |  |  |
| tpc-PUCCH-RNTI                          | Not checked |  |  |
| tpc-SRS-RNTI                            | Not checked |  |  |
| absoluteTPC-Command                     | Not checked |  |  |
| twoDifferentTPC-Loop-PUSCH              | Not checked |  |  |
| twoDifferentTPC-Loop-PUCCH              | Not checked |  |  |
| pusch-HalfPi-BPSK                       | Not checked |  |  |
| pucch-F3-4-HalfPi-BPSK                  | Not checked |  |  |
| almostContiguousCP-OFDM-UL              | Not checked |  |  |
| sp-CSI-RS                               | Not checked |  |  |
| sp-CSI-IM                               | Not checked |  |  |
| tdd-MultiDL-UL-SwitchPerSlot            | Not checked |  |  |
| multipleCORESET                         | Not checked |  |  |
| }                                       |             |  |  |
| measAndMobParametersFRX-Diff SEQUENCE { |             |  |  |
| ss-SINR-Meas                            | Not checked |  |  |
| csi-RSRP-AndRSRQ-MeasWithSSB            | Not checked |  |  |
| csi-RSRP-AndRSRQ-MeasWithoutSSB         | Not checked |  |  |
| csi-SINR-Meas                           | Not checked |  |  |
| csi-RS-RLM                              | Not checked |  |  |
| }                                       |             |  |  |
| }                                       |             |  |  |
| fr2-Add-UE-NR-Capabilities SEQUENCE {   |             |  |  |
| phy-ParametersFRX-Diff SEQUENCE {       | Not checked |  |  |
| dynamicSFI                              | Not checked |  |  |
| oneFL-DMRS-TwoAdditionalDMRS            | Not checked |  |  |
| twoFL-DMRS                              | Not checked |  |  |
| twoFL-DMRS-TwoAdditionalDMRS            | Not checked |  |  |
| oneFL-DMRS-ThreeAdditionalDMRS          | Not checked |  |  |
| supportedDMRS-TypeDL                    | Not checked |  |  |
| supportedDMRS-TypeUL                    | Not checked |  |  |
| semiOpenLoopCSI                         | Not checked |  |  |
| csi-ReportWithoutPMI                    | Not checked |  |  |
| csi-ReportWithoutCQI                    | Not checked |  |  |
| onePortsPTRS                            | Not checked |  |  |
| twoPUCCH-F0-2-ConsecSymbols             | Not checked |  |  |
| pucch-F2-WithFH                         | Not checked |  |  |
| pucch-F3-WithFH                         | Not checked |  |  |
| pucch-F4-WithFH                         | Not checked |  |  |
| freqHoppingPUCCH-F0-2                   | Not checked |  |  |
| freqHoppingPUCCH-F1-3-4                 | Not checked |  |  |
| mux-SR-HARQ-ACK-CSI-PUCCH               | Not checked |  |  |
| uci-CodeBlockSegmentation               | Not checked |  |  |
| onePUCCH-LongAndShortFormat             | Not checked |  |  |
| twoPUCCH-AnyOthersInSlot                | Not checked |  |  |
| intraSlotFreqHopping-PUSCH              | Not checked |  |  |
| pusch-LBRM                              | Not checked |  |  |
| pdch-BlindDetectionCA                   | Not checked |  |  |
| tpc-PUSCH-RNTI                          | Not checked |  |  |
| tpc-PUCCH-RNTI                          | Not checked |  |  |

|   |             |  |  |
|---|-------------|--|--|
| tpc-SRS-RNTI                                | Not checked |  |  |
| absoluteTPC-Command                         | Not checked |  |  |
| twoDifferentTPC-Loop-PUSCH                  | Not checked |  |  |
| twoDifferentTPC-Loop-PUCCH                  | Not checked |  |  |
| pusch-HalfPi-BPSK                           | Not checked |  |  |
| pucch-F3-4-HalfPi-BPSK                      | Not checked |  |  |
| almostContiguousCP-OFDM-UL                  | Not checked |  |  |
| sp-CSI-RS                                   | Not checked |  |  |
| sp-CSI-IM                                   | Not checked |  |  |
| tdd-MultiDL-UL-SwitchPerSlot                | Not checked |  |  |
| multipleCORESET                             | Not checked |  |  |
| }   |             |  |  |
| measAndMobParametersFRX-Diff SEQUENCE {     |             |  |  |
| ss-SINR-Meas                                | Not checked |  |  |
| csi-RSRP-AndRSRQ-MeasWithSSB                | Not checked |  |  |
| csi-RSRP-AndRSRQ-MeasWithoutSSB             | Not checked |  |  |
| csi-SINR-Meas                               | Not checked |  |  |
| csi-RS-RLM                                  | Not checked |  |  |
| }   |             |  |  |
| }   |             |  |  |
| featureSets                                 | Not checked |  |  |
| featureSetCombinations                      | Not checked |  |  |
| lateNonCriticalExtension                    | Not checked |  |  |
| nonCriticalExtension SEQUENCE {             |             |  |  |
| fdd-Add-UE-NR-Capabilities-1530 SEQUENCE {  |             |  |  |
| eutra-ParametersXDD-Diff SEQUENCE {         |             |  |  |
| rsrqMeasWidebandEUTRA                       | Not checked |  |  |
| }   |             |  |  |
| }   |             |  |  |
| tdd-Add-UE-NR-Capabilities-v1530 SEQUENCE { |             |  |  |
| eutra-ParametersXDD-Diff SEQUENCE {         |             |  |  |
| rsrqMeasWidebandEUTRA Not Checked           |             |  |  |
| }   |             |  |  |
| }   |             |  |  |
| dummy                                       | Not checked |  |  |
| interRAT-Parameters                         | Not checked |  |  |
| inactiveState                               | Not checked |  |  |
| delayBudgetReporting                        | Not checked |  |  |
| nonCriticalExtension SEQUENCE {             |             |  |  |
| sdap-Parameters                             | Not checked |  |  |
| overheatingInd                              | Not checked |  |  |
| ims-Parameters                              | Not checked |  |  |
| fr1-Add-UE-NR-Capabilities-v1540 SEQUENCE { |             |  |  |
| ims-ParametersFRX-Diff SEQUENCE {           |             |  |  |
| voiceOverNR                                 | Not checked |  |  |
| }   |             |  |  |
| }   |             |  |  |
| fr2-Add-UE-NR-Capabilities-v1540 SEQUENCE { |             |  |  |
| ims-ParametersFRX-Diff SEQUENCE {           |             |  |  |
| voiceOverNR                                 | Not checked |  |  |
| }   |             |  |  |
| }   |             |  |  |
| fr1-fr2-Add-UE-NR-Capabilities SEQUENCE {   |             |  |  |
| phy-ParametersFRX-Diff SEQUENCE {           |             |  |  |
| dynamicSFI                                  | Not checked |  |  |
| dummy1                                      | Not checked |  |  |
| twoFL-DMRS                                  | Not checked |  |  |
| dummy2                                      | Not checked |  |  |
| dummy3                                      | Not checked |  |  |
| supportedDMRS-TypeDL                        | Not checked |  |  |
| supportedDMRS-TypeUL                        | Not checked |  |  |
| semiOpenLoopCSI                             | Not checked |  |  |
| csi-ReportWithoutPMI                        | Not checked |  |  |
| csi-ReportWithoutCQI                        | Not checked |  |  |
| onePortsPTRS                                | Not checked |  |  |

|   |             |  |  |
|---|-------------|--|--|
| twoPUCCH-F0-2-ConsecSymbols             | Not checked |  |  |
| pucch-F2-WithFH                         | Not checked |  |  |
| pucch-F3-WithFH                         | Not checked |  |  |
| pucch-F4-WithFH                         | Not checked |  |  |
| freqHoppingPUCCH-F0-2                   | Not checked |  |  |
| freqHoppingPUCCH-F1-3-4                 | Not checked |  |  |
| mux-SR-HARQ-ACK-CSI-PUCCH- MultiPerSlot | Not checked |  |  |
| uci-CodeBlockSegmentation               | Not checked |  |  |
| onePUCCH-LongAndShortFormat             | Not checked |  |  |
| twoPUCCH-AnyOthersInSlot                | Not checked |  |  |
| intraSlotFreqHopping-PUSCH              | Not checked |  |  |
| pusch-LBRM                              | Not checked |  |  |
| pdcch-BlindDetectionCA                  | Not checked |  |  |
| tpc-PUSCH-RNTI                          | Not checked |  |  |
| tpc-PUCCH-RNTI                          | Not checked |  |  |
| tpc-SRS-RNTI                            | Not checked |  |  |
| absoluteTPC-Command                     | Not checked |  |  |
| twoDifferentTPC-Loop-PUSCH              | Not checked |  |  |
| twoDifferentTPC-Loop-PUCCH              | Not checked |  |  |
| pusch-HalfPi-BPSK                       | Not checked |  |  |
| pucch-F3-4-HalfPi-BPSK                  | Not checked |  |  |
| almostContiguousCP-OFDM-UL              | Not checked |  |  |
| sp-CSI-RS                               | Not checked |  |  |
| sp-CSI-IM                               | Not checked |  |  |
| tdd-MultiDL-UL-SwitchPerSlot            | Not checked |  |  |
| multipleCORESET                         | Not checked |  |  |
| }                                       |             |  |  |
| measAndMobParametersFRX-Diff SEQUENCE { |             |  |  |
| ss-SINR-Meas                            | Not checked |  |  |
| csi-RSRP-AndRSRQ-MeasWithSSB            | Not checked |  |  |
| csi-RSRP-AndRSRQ-MeasWithoutSSB         | Not checked |  |  |
| csi-SINR-Meas                           | Not checked |  |  |
| csi-RS-RLM                              | Not checked |  |  |
| }                                       |             |  |  |
| }                                       |             |  |  |
| nonCriticalExtension SEQUENCE {         | Not checked |  |  |
| reducedCP-Latency                       | Not checked |  |  |
| nonCriticalExtension SEQUENCE {         |             |  |  |
| nrdc-Parameters                         | Not checked |  |  |
| receivedFilters                         | Not checked |  |  |
| nonCriticalExtension                    | Not checked |  |  |
| }                                       |             |  |  |
| }                                       |             |  |  |
| }                                       |             |  |  |
| }                                       |             |  |  |

– *SharedSpectrumChAccessParamsPerBand*

**Table 4.6.4-50: SharedSpectrumChAccessParamsPerBand**

| Derivation Path: TS 38.331 [6], clause 6.3.3           |              |         |           |
|--|--------------|---------|-----------|
| Information Element                                    | Value/remark | Comment | Condition |
| SharedSpectrumChAccessParamsPerBand-r16 ::= SEQUENCE { |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

#### 4.6.5 Other information elements

- *AbsoluteTimeInfo*

**Table 4.6.5-0A: *AbsoluteTimeInfo***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| AbsoluteTimeInfo-r16                         | FFS          |         |           |

- *AreaConfiguration*

**Table 4.6.5-0B: *AreaConfiguration***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| AreaConfiguration-r16 ::= SEQUENCE {         |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *BT-NameList*

**Table 4.6.5-0C: *BT-NameList***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| BT-NameList-r16 ::= SEQUENCE {               |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *EUTRA-AllowedMeasBandwidth*

**Table 4.6.5-1: *EUTRA-AllowedMeasBandwidth***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |  |                             |           |
|--|--|-----------------------------|-----------|
| Information Element                          | Value/remark   | Comment                     | Condition |
| EUTRA-AllowedMeasBandwidth                   | Set according to TS 36.508 [2] Table 4.4.3.4-1 for E-UTRA cell | row 'measurement Bandwidth' |           |

— *EUTRA-MBSFN-SubframeConfigList*

**Table 4.6.5-2: EUTRA-MBSFN-SubframeConfigList**

| Derivation Path: TS 38.331 [6], clause 6.3.4   |              |         |           |
|--|--------------|---------|-----------|
| Information Element  | Value/remark | Comment | Condition |
| EUTRA-MBSFN-SubframeConfigList ::= SEQUENCE (SIZE (1..maxMBSFN-Allocations)) OF EUTRA-MBSFN-SubframeConfig { | 1 entry      |         |           |
| MBSFN-SubframeConfig[1] SEQUENCE {   |              | entry 1 |           |
| radioframeAllocationPeriod   | FFS          |         |           |
| radioframeAllocationOffset   | FFS          |         |           |
| subframeAllocation1 CHOICE {   |              |         |           |
| oneFrame   | FFS          |         |           |
| fourFrames   | FFS          |         |           |
| }  |              |         |           |
| subframeAllocation2 CHOICE {   |              |         |           |
| oneFrame   | FFS          |         |           |
| fourFrames   | FFS          |         |           |
| }  |              |         |           |
| }  |              |         |           |
| }  |              |         |           |

— *EUTRA-MultiBandInfoList*

**Table 4.6.5-3: EUTRA-MultiBandInfoList**

| Derivation Path: TS 38.331 [6], clause 6.3.4  |                        |         |           |
|---|------------------------|---------|-----------|
| Information Element   | Value/remark           | Comment | Condition |
| EUTRA-MultiBandInfoList ::= SEQUENCE (SIZE (1..maxMultiBands)) OF EUTRA-MultiBandInfo { | 1 entry                |         |           |
| EUTRA-MultiBandInfo[1] SEQUENCE {   |                        | entry 1 |           |
| eutra-FreqBandIndicator   | FreqBandIndicatorEUTRA |         |           |
| eutra-NS-PmaxList   | EUTRA-NS-PmaxList      |         |           |
| }   |                        |         |           |
| }   |                        |         |           |

— *EUTRA-NS-PmaxList*

**Table 4.6.5-4: EUTRA-NS-PmaxList**

| Derivation Path: TS 38.331 [6], clause 6.3.4  |              |         |           |
|---|--------------|---------|-----------|
| Information Element   | Value/remark | Comment | Condition |
| EUTRA-NS-PmaxList ::= SEQUENCE (SIZE (1..maxEUTRA-NS-Pmax)) OF EUTRA-NS-PmaxValue { | 1 entry      |         |           |
| EUTRA-NS-PmaxValue[1] SEQUENCE {  |              | entry 1 |           |
| additionalPmax  | FFS          |         |           |
| additionalSpectrumEmission  | FFS          |         |           |
| }   |              |         |           |
| }   |              |         |           |

– *EUTRA-PhysCellId*

**Table 4.6.5-5: EUTRA-PhysCellId**

| Derivation Path: TS 38.331 [6], clause 6.3.4 |   |         |           |
|--|---|---------|-----------|
| Information Element                          | Value/remark  | Comment | Condition |
| EUTRA-PhysCellId                             | Set according to<br>TS 36.508 [2] Table<br>4.4.2-1A for E-UTRA cell |         |           |

– *EUTRA-PhysCellIdRange*

**Table 4.6.5-6: EUTRA-PhysCellIdRange**

| Derivation Path: TS 38.331 [6], clause 6.3.4 |                  |         |           |
|--|------------------|---------|-----------|
| Information Element                          | Value/remark     | Comment | Condition |
| EUTRA-PhysCellIdRange ::= SEQUENCE {         |                  |         |           |
| start  | EUTRA-PhysCellId |         |           |
| Range  | FFS              |         |           |
| }  |                  |         |           |

– *EUTRA-PresenceAntennaPort1*

**Table 4.6.5-7: EUTRA-PresenceAntennaPort1**

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| EUTRA-PresenceAntennaPort1                   | FFS          |         |           |

– *EUTRA-Q-OffsetRange*

**Table 4.6.5-8: EUTRA-Q-OffsetRange**

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| EUTRA-Q-OffsetRange                          | FFS          |         |           |

**Table 4.6.5-9: Void**

**Table 4.6.5-10: Void**

– *IAB-IP-Address*

**Table 4.6.5-10A: IAB-IP-Address**

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| IAB-IP-Address-r16 ::= SEQUENCE {            |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *IAB-IP-AddressIndex*

**Table 4.6.5-10B: *IAB-IP-AddressIndex***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| IAB-IP-AddressIndex-r16                      | FFS          |         |           |

- *IAB-IP-Usage*

**Table 4.6.5-10C: *IAB-IP-Usage***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| IAB-IP-Usage-r16                             | FFS          |         |           |

- *LoggingDuration*

**Table 4.6.5-10D: *LoggingDuration***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| LoggingDuration-r16                          | FFS          |         |           |

- *LoggingInterval*

**Table 4.6.5-10E: *LoggingInterval***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| LoggingInterval-r16                          | FFS          |         |           |

- *LogMeasResultListBT*

**Table 4.6.5-10F: *LogMeasResultListBT***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| LogMeasResultListBT-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *LogMeasResultListWLAN*

**Table 4.6.5-10G: *LogMeasResultListWLAN***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| LogMeasResultListWLAN-r16 ::= SEQUENCE {     |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *OtherConfig*

**Table 4.6.5-11: *OtherConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| OtherConfig ::= SEQUENCE {                   |              |         |           |
| delayBudgetReportingConfig CHOICE{           |              |         |           |
| release                                      | FFS          |         |           |
| setup SEQUENCE {                             |              |         |           |
| delayBudgetReportingProhibitTimer            | FFS          |         |           |
| }  |              |         |           |
| }  |              |         |           |
| }  |              |         |           |

— *PhysCellIdUTRA-FDD*

**Table 4.6.5-11A: *PhysCellIdUTRA-FDD***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PhysCellIdUTRA-FDD-r16                       | FFS          |         |           |

— *RRC-TransactionIdentifier*

**Table 4.6.5-12: *RRC-TransactionIdentifier***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RRC-TransactionIdentifier                    | 0            |         |           |

— *Sensor-NameList*

**Table 4.6.5-13: *Sensor-NameList***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| Sensor-NameList-r16 ::= SEQUENCE {           |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *TraceReference*

**Table 4.6.5-14: *TraceReference***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| TraceReference-r16 ::= SEQUENCE {            |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *UE-MeasurementsAvailable-r16*

**Table 4.6.5-15: *UE-MeasurementsAvailable-r16***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| UE-MeasurementsAvailable-r16 ::= SEQUENCE {  |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *UTRA-FDD-Q-OffsetRange*

**Table 4.6.5-16: *UTRA-FDD-Q-OffsetRange***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| UTRA-FDD-Q-OffsetRange-r16 ::= SEQUENCE {    |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *VisitedCellInfoList*

**Table 4.6.5-17: *VisitedCellInfoList***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| VisitedCellInfoList-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *WLAN-NameList*

**Table 4.6.5-18: *WLAN-NameList***

| Derivation Path: TS 38.331 [6], clause 6.3.4 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| WLAN-NameList-r16 ::= SEQUENCE {             |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

## 4.6.6 Sidelink information elements

- *SL-BWP-Config*

**Table 4.6.6-1: *SL-BWP-Config***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-BWP-Config-r16 ::= SEQUENCE {             |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-BWP-ConfigCommon*

**Table 4.6.6-2: *SL-BWP-ConfigCommon***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-BWP-ConfigCommon-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-BWP-PoolConfig*

**Table 4.6.6-3: *SL-BWP-PoolConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-BWP-PoolConfig-r16 ::= SEQUENCE {         |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-BWP-PoolConfigCommon*

**Table 4.6.6-4: *SL-BWP-PoolConfigCommon***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-BWP-PoolConfigCommon-r16 ::= SEQUENCE {   |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-CBR-PriorityTxConfigList*

**Table 4.6.6-5: *SL-CBR-PriorityTxConfigList***

| Derivation Path: TS 38.331 [6], clause 6.3.5    |              |         |           |
|---|--------------|---------|-----------|
| Information Element                             | Value/remark | Comment | Condition |
| SL-CBR-PriorityTxConfigList -r16 ::= SEQUENCE { |              |         |           |
| FFS   |              |         |           |
| }   |              |         |           |

– *SL-CBR-CommonTxConfigList*

**Table 4.6.6-6: *SL-CBR-CommonTxConfigList***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-CBR-CommonTxConfigList-r16 ::= SEQUENCE { |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *SL-ConfigDedicatedNR*

**Table 4.6.6-7: *SL-ConfigDedicatedNR***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-ConfigDedicatedNR-r16 ::= SEQUENCE {      |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *SL-ConfiguredGrantConfig*

**Table 4.6.6-8: *SL-ConfiguredGrantConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-ConfiguredGrantConfig-r16 ::= SEQUENCE {  |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *SL-DestinationIdentity*

**Table 4.6.6-9: *SL-DestinationIdentity***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-DestinationIdentity-r16 ::= SEQUENCE {    |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *SL-FreqConfig*

**Table 4.6.6-10: *SL-FreqConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-FreqConfig-r16 ::= SEQUENCE {             |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

- *SL-FreqConfigCommon*

**Table 4.6.6-11: *SL-FreqConfigCommon***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-FreqConfigCommon-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-LogicalChannelConfig*

**Table 4.6.6-12: SL-LogicalChannelConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-LogicalChannelConfig-r16 ::= SEQUENCE {   |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-MeasConfigCommon*

**Table 4.6.6-13: SL-MeasConfigCommon**

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-MeasConfigCommon-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-MeasConfigInfo*

**Table 4.6.6-14: SL-MeasConfigInfo**

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-MeasConfigInfo-r16 ::= SEQUENCE {         |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-MeasIdList*

**Table 4.6.6-15: SL-MeasIdList**

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-MeasIdList-r16 ::= SEQUENCE {             |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-MeasObjectList*

**Table 4.6.6-16: SL-MeasObjectList**

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-MeasObjectList-r16 ::= SEQUENCE {         |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-PDCP-Config*

**Table 4.6.6-17: SL-PDCP-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-PDCP-Config-r16 ::= SEQUENCE {            |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-PSBCH-Config*

**Table 4.6.6-18: SL-PSBCH-Config**

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-PSBCH-Config-r16 ::= SEQUENCE {           |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-PSSCH-TxConfigList*

**Table 4.6.6-19: SL-PSSCH-TxConfigList**

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-PSSCH-TxConfigList-r16 ::= SEQUENCE {     |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-QoS-FlowIdentity*

**Table 4.6.6-20: SL-QoS-FlowIdentity**

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-QoS-FlowIdentity-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-QoS-Profile*

**Table 4.6.6-21: SL-QoS-Profile**

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-QoS-Profile-r16 ::= SEQUENCE {            |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-QuantityConfig*

**Table 4.6.6-22: *SL-QuantityConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-QuantityConfig-r16 ::= SEQUENCE {         |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-RadioBearerConfig*

**Table 4.6.6-23: *SL-RadioBearerConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-RadioBearerConfig-r16 ::= SEQUENCE {      |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-ReportConfigList*

**Table 4.6.6-24: *SL-ReportConfigList***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-ReportConfigList-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-ResourcePool*

**Table 4.6.6-25: *SL-ResourcePool***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-ResourcePool-r16 ::= SEQUENCE {           |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-RLC-BearerConfig*

**Table 4.6.6-26: *SL-RLC-BearerConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-RLC-BearerConfig-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-RLC-BearerConfigIndex*

**Table 4.6.6-27: *SL-RLC-BearerConfigIndex***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-RLC-BearerConfigIndex-r16 ::= SEQUENCE {  |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-RLC-Config*

**Table 4.6.6-28: *SL-RLC-Config***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-RLC-Config-r16 ::= SEQUENCE {             |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-ScheduledConfig*

**Table 4.6.6-29: *SL-ScheduledConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-ScheduledConfig-r16 ::= SEQUENCE {        |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-SDAP-Config*

**Table 4.6.6-30: *SL-SDAP-Config***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-SDAP-Config-r16 ::= SEQUENCE {            |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-SyncConfig*

**Table 4.6.6-31: *SL-SyncConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-SyncConfig-r16 ::= SEQUENCE {             |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-ThresPSSCH-RSRP-List*

**Table 4.6.6-32: *SL-ThresPSSCH-RSRP-List***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-ThresPSSCH-RSRP-List-r16 ::= SEQUENCE {   |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-TxPower*

**Table 4.6.6-33: *SL-TxPower***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-TxPower-r16 ::= SEQUENCE {                |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-TypeTxSync*

**Table 4.6.6-34: *SL-TypeTxSync***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-TypeTxSync-r16 ::= SEQUENCE {             |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-UE-SelectedConfig*

**Table 4.6.6-35: *SL-UE-SelectedConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-UE-SelectedConfig-r16 ::= SEQUENCE {      |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

– *SL-ZoneConfig*

**Table 4.6.6-36: *SL-ZoneConfig***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SL-ZoneConfig-r16 ::= SEQUENCE {             |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

— *SLRB-Uu-ConfigIndex*

**Table 4.6.6-37: *SLRB-Uu-ConfigIndex***

| Derivation Path: TS 38.331 [6], clause 6.3.5 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| SLRB-Uu-ConfigIndex-r16 ::= SEQUENCE {       |              |         |           |
| FFS  |              |         |           |
| }  |              |         |           |

## 4.7 Default 5GC NAS message and information elements contents

### 4.7.0 General

#### 4.7.0.1 Interpretation of IE presence and values

For Uplink NAS messages, the following terms and their meanings shall be used to determine how to test specific IEs:

- "Not present": test cases fail if IE is present.
- "Present but contents not checked": test cases fail if IE is not present. No requirements regarding contents of the IE.
- "If present: contents not checked": IE may or may not be present. No requirements regarding contents of the IE.
- "If present: <specific values>": IE may or may not be present. If present, its contents shall be as specified.
- "<specific values>": test cases fail if IE is not present. Its contents shall be as specified.
- "Present if <condition>: contents not checked": test cases fail if condition is fulfilled and IE is not present. Contents of IE are not checked, even if present.
- "Present if <condition>: <specific values>": test cases fail if condition is fulfilled and IE is not present. When IE shall be present, its contents shall be as specified.

#### 4.7.0.2 Security protected 5GS NAS messages

In subclause 4.7.1, all 5GS NAS messages are described in the plain 5GS NAS message format.

When a 5GS NAS message is security protected, the message shall be contained by SECURITY PROTECTED 5GS NAS MESSAGE unless contained by another NAS message.

The default contents of SECURITY PROTECTED 5GS NAS MESSAGE message is defined in table 4.7.1-28.

## 4.7.1 Contents of 5GMM messages

- *Authentication request*

**Table 4.7.1-1: AUTHENTICATION REQUEST**

| Derivation Path: 24.501 clause 8.2.1                        |  |   |           |
|---|--|---|-----------|
| Information Element   | Value/remark   | Comment   | Condition |
| Extended protocol discriminator                             | '0111 1110'B   | 5GS mobility management messages                  |           |
| Security header type  | '0000'B  | Plain 5GS NAS message, not security protected     |           |
| Spare half octet  | '0000'B  |   |           |
| Authentication request message identity                     | '0101 0110'B   |   |           |
| ngKSI   |  |   |           |
| NAS key set identifier                                      | An arbitrarily selected value between '000'B and '110'B, different from the valid NAS key set identifier of the UE if such a value exists. |   |           |
| TSC   | '0'B   | native security context (for KSI <sub>AMF</sub> ) |           |
| Spare half octet  | '0000'B  |   |           |
| ABBA  | '0000 0000 0000 0000'B   |   |           |
| Authentication parameter RAND (5G authentication challenge) | Not Present  |   | EAP-AKA   |
|   | An arbitrarily selected 128 bits value   |   | 5G-AKA    |
| Authentication parameter AUTN (5G authentication challenge) | Not Present  |   | EAP-AKA   |
|   | 128 bits value generated according to TS 24.501 [28] subclause 9.11.3.15   |   | 5G-AKA    |
| EAP message   | Not Present  |   | 5G-AKA    |
| EAP message   | EAP-request/AKA'-challenge   | See Table 4.7.3.2-01                              | EAP-AKA   |

| Condition | Explanation   |
|-----------|---|
| EAP_AKA   | EAP based primary authentication and key agreement procedure    |
| 5G-AKA    | 5G AKA based primary authentication and key agreement procedure |

NOTE: Within a test execution this message is sent without integrity protection before NAS security mode control procedure has been successfully completed; and sent integrity protected and ciphered within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed. SS does not maintain information for 5GS NAS security mode control procedure after a TC is completed.

— *Authentication response*

**Table 4.7.1-2: AUTHENTICATION RESPONSE**

| Derivation Path: 24.501 clause 8.2.2     |   |   |           |
|--|---|---|-----------|
| Information Element                      | Value/remark  | Comment                                       | Condition |
| Extended protocol discriminator          | 5GMM  |   |           |
| Security header type                     | '0000'B   | Plain 5GS NAS message, not security protected |           |
| Spare half octet                         | '0000'B   |   |           |
| Authentication response message identity | '0101 0111'B  |   |           |
| Authentication response parameter        | 16 octets RES* value calculated according to TS 24.501 [28] subclause 9.11.3.17 |   | 5G-AKA    |
|  | Not Present   |   | EAP-AKA   |
| EAP message                              | EAP-response/AKA'-challenge   | See Table 4.7.3.2-02                          | EAP-AKA   |

| Condition | Explanation   |
|-----------|---|
| EAP-AKA   | EAP based primary authentication and key agreement procedure    |
| 5G-AKA    | 5G AKA based primary authentication and key agreement procedure |

NOTE: When sent in response to an AUTHENTICATION REQUEST message which is not integrity protected and not ciphered, the AUTHENTICATION RESPONSE message is sent integrity protected when a valid security context exists and without integrity protection and ciphering otherwise.

— *Authentication result*

**Table 4.7.1-3: AUTHENTICATION RESULT**

| Derivation Path: 24.501 clause 8.2.3   |   |   |           |
|--|---|---|-----------|
| Information Element                    | Value/remark  | Comment                                       | Condition |
| Extended protocol discriminator        | 5GMM  |   |           |
| Security header type                   | '0000'B   | Plain 5GS NAS message, not security protected |           |
| Spare half octet                       | '0000'B   |   |           |
| Authentication result message identity | '0101 1010'B  |   |           |
| ngKSI                                  | The same value as the last AUTHENTICATION REQUEST message |   |           |
| Spare half octet                       | '0000'B   |   |           |
| EAP message                            | EAP-Success   | See Table 4.7.3.2-03                          |           |
| ABBA                                   | '0000 0000 0000 0000'B                                    |   |           |

NOTE: The security protection of this message is the same as the previous AUTHENTICATION REQUEST message.

— *Authentication failure*

**Table 4.7.1-4: AUTHENTICATION FAILURE**

| Derivation Path: 24.501 clause 8.2.4    |                                  |   |           |
|---|----------------------------------|---|-----------|
| Information Element                     | Value/remark                     | Comment                                       | Condition |
| Extended protocol discriminator         | 5GMM                             |   |           |
| Security header type                    | '0000'B                          | Plain 5GS NAS message, not security protected |           |
| Spare half octet                        | '0000'B                          |   |           |
| Authentication failure message identity | '0101 1001'B                     |   |           |
| 5GMM cause                              | Present but contents not checked |   |           |
| Authentication failure parameter        | If present: contents not checked |   |           |

NOTE: The security protection of this message is the same as the previous AUTHENTICATION REQUEST message.

— *Authentication reject*

**Table 4.7.1-5: AUTHENTICATION REJECT**

| Derivation Path: 24.501 clause 8.2.5   |  |   |           |
|--|--|---|-----------|
| Information Element                    | Value/remark                           | Comment                                       | Condition |
| Extended protocol discriminator        | 5GMM                                   |   |           |
| Security header type                   | '0000'B                                | Plain 5GS NAS message, not security protected |           |
| Spare half octet                       | '0000'B                                |   |           |
| Authentication reject message identity | '0101 1000'B                           |   |           |
| EAP message                            | Not present                            |   |           |
| EAP message                            | EAP-Response/AKA-Authentication-Reject | See Table 4.7.3.2-04                          | EAP-AKA   |

| Condition | Explanation  |
|-----------|--|
| EAP-AKA   | EAP based primary authentication and key agreement procedure |

NOTE: This message is sent without integrity protection.

– *Registration request***Table 4.7.1-6: REGISTRATION REQUEST**

| Derivation Path: 24.501 clause 8.2.6      |                                      |   |                                  |
|---|--------------------------------------|---|----------------------------------|
| Information Element                       | Value/remark                         | Comment   | Condition                        |
| Extended protocol discriminator           | '0111 1110'B                         | 5GS mobility management messages                          |                                  |
| Security header type                      | '0000'B                              | Plain 5GS NAS message, not security protected             |                                  |
| Spare half octet                          | '0000'B                              |   |                                  |
| Registration request message identity     | '0100 0001'B                         |   |                                  |
| 5GS registration type                     |                                      |   |                                  |
| 5GS registration type value               | '001'B<br>'010'B<br>'011'B<br>'100'B | Initial registration<br>MOBILITY<br>PERIODIC<br>EMERGENCY |                                  |
| FOR                                       | Present but contents not checked     |   |                                  |
| FOR                                       | '1'B                                 | Follow-on request pending                                 | EMERGENCY                        |
| ngKSI                                     | Present but contents not checked     |   |                                  |
| 5GS mobile identity                       | Present but contents not checked     |   |                                  |
| Non-current native NAS key set identifier | If present: contents not checked     |   | NON_CLEAR_TEXT_IE                |
| 5GMM capability                           | If present: contents not checked     |   | NON_CLEAR_TEXT_IE                |
| UE security capability                    | If present: contents not checked     |   |                                  |
| Requested NSSAI                           | If present: contents not checked     |   | NON_CLEAR_TEXT_IE                |
| Last visited registered TAI               | If present: contents not checked     |   | NON_CLEAR_TEXT_IE                |
| S1 UE network capability                  | If present: contents not checked     |   | NON_CLEAR_TEXT_IE                |
| Uplink data status                        | If present: contents not checked     |   | NON_CLEAR_TEXT_IE                |
| PDU session status                        | If present: contents not checked     |   | NON_CLEAR_TEXT_IE                |
| MICO indication                           | If present: contents not checked     |   | NON_CLEAR_TEXT_IE                |
| UE status                                 | If present: contents not checked     |   |                                  |
| Additional GUTI                           | If present: contents not checked     |   |                                  |
| Allowed PDU session status                | If present: contents not checked     |   | NON_CLEAR_TEXT_IE                |
| UE's usage setting                        | If present: contents not checked     |   | NOT_pc_IMS_AND_NON_CLEAR_TEXT_IE |
| UE's usage setting                        | Present but contents not checked     |   | NON_CLEAR_TEXT_IE                |
| Requested DRX parameters                  | If present: contents not checked     |   | NON_CLEAR_TEXT_IE                |
| EPS NAS message container                 | If present: contents not checked     |   |                                  |
| UE radio capability ID                    | If present: contents not checked     |   | pc_5GC_RAC_S_AND_NON_CLEAR       |

|                                      |   |  |                   |
|--------------------------------------|---|--|-------------------|
|                                      |   |  | TEXT_IE           |
| LADN indication                      | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| Payload container type               | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| Payload container                    | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| Network slicing indication           | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| 5GS update type                      | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| Mobile station classmark 2           | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| Supported codecs                     | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| NAS message container                | The complete, ciphered, REGISTRATION REQUEST message including all IEs. |  | CIPHERED_MESSAGE  |
| EPS bearer context status            | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| Requested extended DRX parameters    | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| T3324 value                          | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| UE radio capability ID               | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| Requested mapped NSSAI               | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| Additional information requested     | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| Requested WUS assistance information | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| N5GC indication                      | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |
| Requested NB-N1 mode DRX parameters  | If present: contents not checked  |  | NON_CLEAR_TEXT_IE |

| Condition        | Explanation   |
|------------------|---|
| INITIAL          | Initial registration  |
| MOBILITY         | Mobility registration updating  |
| PERIODIC         | Periodic registration updating  |
| EMERGENCY        | Emergency registration  |
| NON_CLEARTEXT_IE | An information element that is not allowed to be sent in cleartext and shall only be included in the complete REGISTRATION REQUEST message in the NAS message container IE. |
| CIPHERED_MESSAGE | If any of the IEs marked with the condition NON_CLEARTEXT_IE is present, and the UE has a valid 5G NAS security context, this condition applies.                            |

NOTE: This message is sent integrity protected when a valid security context exists otherwise sent without integrity protection, including only cleartext IEs.

– *Registration accept*

**Table 4.7.1-7: REGISTRATION ACCEPT**

| Derivation Path: 24.501 clause 8.2.7           |                        |  |           |
|--|------------------------|--|-----------|
| Information Element                            | Value/remark           | Comment  | Condition |
| Extended protocol discriminator                | '0111 1110'B           | 5GS mobility management messages   |           |
| Security header type                           | '0000'B                | Plain 5GS NAS message, not security protected  |           |
| Spare half octet                               | '0000'B                |  |           |
| Registration accept message identity           | '0100 0010'B           |  |           |
| 5GS registration result                        |                        |  |           |
| 5GS registration result value                  | '001'B                 | 3GPP access  |           |
| SMS allowed                                    | '0'B                   | SMS over NAS not allowed   |           |
| 5G-GUTI  | See Table 4.4.2-3      | For 5GC NAS test cases see Table 6.3.2.2-1   |           |
| Equivalent PLMNs                               | Not Present            |  |           |
| TAI list                                       |                        |  |           |
| Length of tracking area identity list contents | '0000 0111'B           | 7 octets   |           |
| Partial tracking area identity list 1          |                        |  |           |
| Number of elements                             | '0 0000'B              | 1 element  |           |
| Type of list                                   | '00'B                  | list of TACs belonging to one PLMN, with non-consecutive TAC values  |           |
| MCC  | See Table 4.4.2-3      | For 5GC NAS test cases see Table 6.3.2.2-1   |           |
| MNC  | See Table 4.4.2-3      | For 5GC NAS test cases see Table 6.3.2.2-1   |           |
| TAC 1  | See Table 4.4.2-3      | For 5GC NAS test cases see Table 6.3.2.2-1   |           |
| Allowed NSSAI                                  |                        |  |           |
| S-NSSAI  |                        |  |           |
| Length of S-NSSAI contents                     | '0000 0001'B           | SST  |           |
| SST  | '0000 0001'B           | SST value 1 (eMBB)   |           |
| SST  | '0000 0010'B           | SST value 2 (URLLC)  | SST_URLLC |
| SST  | '0000 0011'B           | SST value 3 (MIoT)   | SST_MIoT  |
| SST  | '0000 0100'B           | SST value 4 (V2X)  | SST_V2X   |
| Rejected NSSAI                                 | Not Present            |  |           |
| Configured NSSAI                               | Not Present            |  |           |
| 5GS network feature support                    | '0000 1101 0000 0000'B | IMS voice over PS session supported over 3GPP access, Emergency services supported in NR connected to 5GCN and E-UTRA connected to 5GCN. All other features set to "not supported" |           |

|  |   |   |              |
|--|---|---|--------------|
|  |   | including the 'Interworking without N26 interface not supported'. |              |
| PDU session status                           | The same value as the PDU session status IE of the most recently received REGISTRATION REQUEST message        |   |              |
| PDU session reactivation result              | Not Present   |   |              |
| PDU session reactivation result error cause  | Not Present   |   |              |
| LADN information                             | Not Present   |   |              |
| MICO indication                              | Not Present   |   |              |
| Network slicing indication                   | Not Present   |   |              |
| Service area list                            | Not Present   |   |              |
| T3512 value                                  |   |   | INITIAL      |
| Timer value                                  | '0 0000'B   |   |              |
| Unit   | '111'B  | value indicates that the timer is deactivated                     |              |
| T3512 value                                  | Not Present   |   |              |
| Non-3GPP de-registration timer value         | Not Present   |   |              |
| T3502 value                                  | Not Present   |   |              |
| Emergency number list                        | Not Present   |   |              |
| Extended emergency number list               | Not Present   |   |              |
| SOR Transparent container                    | Not Present   |   |              |
| EAP message                                  | Not Present   |   |              |
| NSSAI inclusion mode                         | Not Present   |   |              |
| Operator-defined access category definitions | Not Present   |   |              |
| Negotiated DRX parameters                    | Not Present   |   |              |
| Non-3GPP NW policies                         | Not Present   |   |              |
| UE radio capability ID                       | The same value as received in UE radio capability ID; if any of the REGISTRATION REQUEST message              |   | pc_5GC_RA_CS |
| EPS bearer context status                    | The same value as the EPS bearer context status IE of the most recently received REGISTRATION REQUEST message |   |              |
| Negotiated extended DRX parameters           | Not Present   |   |              |
| T3447 value                                  | Not Present   |   |              |
| T3448 value                                  | Not Present   |   |              |
| T3324 value                                  | Not Present   |   |              |
| UE radio capability ID                       | Not Present   |   |              |
| UE radio capability ID deletion indication   | Not Present   |   |              |
| Pending NSSAI                                | Not Present   |   |              |
| Ciphering key data                           | Not Present   |   |              |
| CAG information list                         | Not Present   |   |              |
| Truncated 5G-S-TMSI configuration            | Not Present   |   |              |
| Negotiated WUS assistance information        | Not Present   |   |              |
| Negotiated NB-N1 mode DRX parameters         | Not Present   |   |              |

| Condition | Explanation   |
|-----------|---|
| INITIAL   | Initial registration  |
| SST_URLLC | Slice suitable for the handling of ultra-reliable low latency communications. |
| SST_MIoT  | Slice suitable for the handling of massive IoT                                |
| SST_V2X   | Slice suitable for the handling of V2X services.                              |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

— *Registration complete*

**Table 4.7.1-8: REGISTRATION COMPLETE**

| Derivation Path: 24.501 clause 8.2.8   |                                  |   |           |
|--|----------------------------------|---|-----------|
| Information Element                    | Value/remark                     | Comment                                       | Condition |
| Extended protocol discriminator        | '0111 1110'B                     | 5GS mobility management messages              |           |
| Security header type                   | '0000'B                          | Plain 5GS NAS message, not security protected |           |
| Spare half octet                       | '0000'B                          |   |           |
| Registration complete message identity | '0100 0011'B                     |   |           |
| SOR transparent container              | If present: contents not checked |   |           |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

— *Registration reject*

**Table 4.7.1-9: REGISTRATION REJECT**

| Derivation Path: 24.501 clause 8.2.9 |   |   |           |
|--------------------------------------|---|---|-----------|
| Information Element                  | Value/remark                              | Comment                                       | Condition |
| Extended protocol discriminator      | '0111 1110'B                              | 5GS mobility management messages              |           |
| Security header type                 | '0000'B                                   | Plain 5GS NAS message, not security protected |           |
| Spare half octet                     | '0000'B                                   |   |           |
| Registration reject message identity | '0100 0100'B                              |   |           |
| 5GMM cause                           | Set according to specific message content |   |           |
| T3346 value                          | Not Present                               |   |           |
| T3502 value                          | Not Present                               |   |           |
| EAP message                          | Not Present                               |   |           |
| Rejected NSSAI                       | Not Present                               |   |           |
| CAG information list                 | Not Present                               |   |           |

NOTE: This message is sent without integrity protection before the secure exchange of NAS messages has been established and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after the secure exchange of NAS messages has been established.

– *UL NAS transport***Table 4.7.1-10: UL NAS TRANSPORT**

| Derivation Path: 24.501 clause 8.2.10   |  |   |                     |
|---|--|---|---------------------|
| Information Element   | Value/remark   | Comment                                       | Condition           |
| Extended protocol discriminator   | '0111 1110'B   | 5GS mobility management messages              |                     |
| Security header type  | '0000'B  | Plain 5GS NAS message, not security protected |                     |
| Spare half octet  | '0000'B  |   |                     |
| UL NAS TRANSPORT message identity   | '0110 0111'B   |   |                     |
| Payload container type  | Set according to specific message content  |   |                     |
| Payload container type  | '0001'B  | N1 SM information                             | INITIAL_PDU_REQUEST |
| Spare half octet  | '0000'B  |   |                     |
| Payload container   | Set according to specific message content  |   |                     |
| Payload container   | PDU SESSION ESTABLISHMENT REQUEST message  |   | INITIAL_PDU_REQUEST |
| PDU session ID  | If present: contents not checked   |   |                     |
| PDU session ID  | Same PDU session ID as defined in the PDU SESSION ESTABLISHMENT REQUEST message in the Payload container |   | INITIAL_PDU_REQUEST |
| Old PDU session ID  | If present: contents not checked   |   |                     |
| Request type  | If present: contents not checked   |   |                     |
| Request type  | '001'B   | initial request                               | INITIAL_PDU_REQUEST |
| S-NSSAI   | If present: contents not checked   |   |                     |
| DNN   | If present: contents not checked   | (NOTE 1)                                      |                     |
| Additional information  | If present: contents not checked   |   |                     |
| MA PDU session information  | If present: contents not checked   |   |                     |
| Release assistance indication   | If present: contents not checked   |   |                     |
| NOTE 1: Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account e.g. for the building the content of messages and allowing for specific UE behaviour as specified in Table 4.8.4-1. |  |   |                     |

| Condition           | Explanation   |
|---------------------|---|
| INITIAL_PDU_REQUEST | The UL NAS TRANSPORT message is used to transport a PDU SESSION ESTABLISHMENT REQUEST message to establish a new PDU session. |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *DL NAS transport***Table 4.7.1-11: DL NAS TRANSPORT**

| Derivation Path: 24.501 clause 8.2.11 |   |   |               |
|---------------------------------------|---|---|---------------|
| Information Element                   | Value/remark  | Comment                                       | Condition     |
| Extended protocol discriminator       | '0111 1110'B  | 5GS mobility management messages              |               |
| Security header type                  | '0000'B   | Plain 5GS NAS message, not security protected |               |
| Spare half octet                      | '0000'B   |   |               |
| DL NAS TRANSPORT message identity     | '0110 1000'B  |   |               |
| Payload container type                | Set according to specific message content   |   |               |
| Payload container type                | '0001'B   | N1 SM information                             | 5GSM_MES SAGE |
| Spare half octet                      | '0000'B   |   |               |
| Payload container                     | Set according to specific message content   |   |               |
| Payload container                     | 5GSM message  |   | 5GSM_MES SAGE |
| PDU session ID                        | Not Present   |   |               |
| PDU session ID                        | Set to the same value as the PDU session ID of the 5GSM message in the Payload container. |   | 5GSM_MES SAGE |
| Additional information                | Not Present   |   |               |
| 5GMM cause                            | Not Present   |   |               |
| Back-off timer value                  | Not Present   |   |               |

| Condition    | Explanation  |
|--------------|--|
| 5GSM_MESSAGE | The DL NAS TRANSPORT message is used to transport a 5GSM message |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *De-registration request (UE originating de-registration)***Table 4.7.1-12: DEREGISTRATION REQUEST\_1**

| Derivation Path: 24.501 clause 8.2.12    |                                  |   |            |
|--|----------------------------------|---|------------|
| Information Element                      | Value/remark                     | Comment                                       | Condition  |
| Extended protocol discriminator          | '0111 1110'B                     | 5GS mobility management messages              |            |
| Security header type                     | '0000'B                          | Plain 5GS NAS message, not security protected |            |
| Spare half octet                         | '0000'B                          |   |            |
| De-registration request message identity | '0100 0101'B                     |   |            |
| De-registration type                     |                                  |   |            |
| Switch off                               | '0'B                             |   | NORMAL     |
|  | '1'B                             |   | SWITCH_OFF |
| Re-registration required                 | '0'B                             |   |            |
| Access type                              | '01'B                            | 3GPP access                                   |            |
| ngKSI                                    | Present but contents not checked |   |            |
| 5GS mobile identity                      | Present but contents not checked |   |            |

| Condition  | Explanation            |
|------------|------------------------|
| NORMAL     | Normal de-registration |
| SWITCH_OFF | Switch off             |

NOTE: If this message is sent as an initial NAS message, it is sent with integrity protection but without ciphering. Otherwise it is sent without integrity protection and ciphering before SS has started the ciphering and integrity and ciphered protected after SS has started the ciphering.

- *De-registration accept (UE originating de-registration)*

**Table 4.7.1-13: DEREGISTRATION ACCEPT\_1**

| Derivation Path: 24.501 clause 8.2.13   |              |   |           |
|---|--------------|---|-----------|
| Information Element                     | Value/remark | Comment                                       | Condition |
| Extended protocol discriminator         | '0111 1110'B | 5GS mobility management messages              |           |
| Security header type                    | '0000'B      | Plain 5GS NAS message, not security protected |           |
| Spare half octet                        | '0000'B      |   |           |
| De-registration accept message identity | '0100 0110'B |   |           |

NOTE: This message is sent using the same security protection as in the previous DETACH REQUEST message received from the UE.

- *De-registration request (UE terminated de-registration)*

**Table 4.7.1-14: DEREGISTRATION REQUEST\_2**

| Derivation Path: 24.501 clause 8.2.14    |   |   |           |
|--|---|---|-----------|
| Information Element                      | Value/remark                              | Comment                                       | Condition |
| Extended protocol discriminator          | '0111 1110'B                              | 5GS mobility management messages              |           |
| Security header type                     | '0000'B                                   | Plain 5GS NAS message, not security protected |           |
| Spare half octet                         | '0000'B                                   |   |           |
| De-registration request message identity | '0100 0111'B                              |   |           |
| De-registration type                     | Set according to specific message content |   |           |
| Spare half octet                         | '0000'B                                   |   |           |
| 5GMM cause                               | Not Present                               |   |           |
| T3346 value                              | Not Present                               |   |           |
| Rejected NSSAI                           | Not Present                               |   |           |
| CAG information list                     | Not Present                               |   |           |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

- *De-registration accept (UE terminated de-registration)*

**Table 4.7.1-15: DEREGISTRATION ACCEPT\_2**

| Derivation Path: 24.501 clause 8.2.15   |              |   |           |
|---|--------------|---|-----------|
| Information Element                     | Value/remark | Comment                                       | Condition |
| Extended protocol discriminator         | '0111 1110'B | 5GS mobility management messages              |           |
| Security header type                    | '0000'B      | Plain 5GS NAS message, not security protected |           |
| Spare half octet                        | '0000'B      |   |           |
| De-registration accept message identity | '0100 1000'B |   |           |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

- *Service request*

**Table 4.7.1-16: SERVICE REQUEST**

| Derivation Path: 24.501 clause 8.2.16 |  |   |                   |
|---------------------------------------|--|---|-------------------|
| Information Element                   | Value/remark   | Comment   | Condition         |
| Extended protocol discriminator       | '0111 1110'B   | 5GS mobility management messages                  |                   |
| Security header type                  | '0000'B  | Plain 5GS NAS message, not security protected     |                   |
| Spare half octet                      | '0000'B  |   |                   |
| Service request message identity      | '0100 1100'B   |   |                   |
| ngKSI                                 |  |   |                   |
| NAS key set identifier                | The valid NAS key set identifier of the UE                                     |   |                   |
| TSC                                   | '0'B   | native security context (for KSI <sub>AMF</sub> ) |                   |
| Service type                          | '0010'B  | mobile terminated services                        |                   |
| 5G-S-TMSI                             | The valid 5G-S-TMSI of the UE  |   |                   |
| Uplink data status                    | If present: contents not checked   |   | NON_CLEA RTEXT_IE |
| PDU session status                    | If present: contents not checked   |   | NON_CLEA RTEXT_IE |
| Allowed PDU session status            | If present: contents not checked   |   | NON_CLEA RTEXT_IE |
| NAS message container                 | If present, the complete, ciphered, SERVICE REQUEST message including all IEs. |   | CIPHERED_MESSAGE  |

| Condition        | Explanation   |
|------------------|---|
| NON_CLEARTEXT_IE | An information element that is not allowed to be sent in cleartext and shall only be included in the complete SERVICE REQUEST message in the NAS message container IE.<br>NOTE: This condition is only applicable if the SERVICE REQUEST message is sent as an initial NAS message. |
| CIPHERED_MESSAGE | If any of the IEs marked with the condition NON_CLEARTEXT_IE is present, this condition applies.<br>NOTE: This condition is only applicable if the SERVICE REQUEST message is sent as an initial NAS message.   |

NOTE: This message is sent without integrity protection, including only cleartext IEs, before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

— *Service accept*

**Table 4.7.1-17: SERVICE ACCEPT**

| Derivation Path: 24.501 clause 8.2.17       |              |   |           |
|---|--------------|---|-----------|
| Information Element                         | Value/remark | Comment                                       | Condition |
| Extended protocol discriminator             | '0111 1110'B | 5GS mobility management messages              |           |
| Security header type                        | '0000'B      | Plain 5GS NAS message, not security protected |           |
| Spare half octet                            | '0000'B      |   |           |
| Service accept message identity             | '0100 1110'B |   |           |
| PDU session status                          | Not Present  |   |           |
| PDU session reactivation result             | Not Present  |   |           |
| PDU session reactivation result error cause | Not Present  |   |           |
| EAP message                                 | Not Present  |   |           |
| T3448 value                                 | Not Present  |   |           |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

— *Service reject*

**Table 4.7.1-18: SERVICE REJECT**

| Derivation Path: 24.501 clause 8.2.18 |  |   |           |
|---------------------------------------|--|---|-----------|
| Information Element                   | Value/remark   | Comment                                       | Condition |
| Extended protocol discriminator       | '0111 1110'B   | 5GS mobility management messages              |           |
| Security header type                  | '0000'B  | Plain 5GS NAS message, not security protected |           |
| Spare half octet                      | '0000'B  |   |           |
| Service reject message identity       | '0100 1101'B   |   |           |
| 5GMM cause                            | The value is set according to specific message content |   |           |
| PDU session status                    | Not Present  |   |           |
| T3346 value                           | Not Present  |   |           |
| EAP message                           | Not Present  |   |           |
| T3448 value                           | Not Present  |   |           |
| CAG information list                  | Not Present  |   |           |

NOTE: This message is sent without integrity protection before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

– *Configuration update command*

**Table 4.7.1-19: CONFIGURATION UPDATE COMMAND**

| Derivation Path: 24.501 clause 8.2.19         |              |   |           |
|---|--------------|---|-----------|
| Information Element                           | Value/remark | Comment                                       | Condition |
| Extended protocol discriminator               | '0111 1110'B | 5GS mobility management messages              |           |
| Security header type                          | '0000'B      | Plain 5GS NAS message, not security protected |           |
| Spare half octet                              | '0000'B      |   |           |
| Configuration update command message identity | '0101 0100'B |   |           |
| Configuration update indication               | Not Present  |   |           |
| 5G-GUTI                                       | Not Present  |   |           |
| TAI list                                      | Not Present  |   |           |
| Allowed NSSAI                                 | Not Present  |   |           |
| Service area list                             | Not Present  |   |           |
| Full name for network                         | Not Present  |   |           |
| Short name for network                        | Not Present  |   |           |
| Local time zone                               | Not Present  |   |           |
| Universal time and local time zone            | Not Present  |   |           |
| Network daylight saving time                  | Not Present  |   |           |
| LADN information                              | Not Present  |   |           |
| MICO indication                               | Not Present  |   |           |
| Network slicing indication                    | Not Present  |   |           |
| Configured NSSAI                              | Not Present  |   |           |
| Rejected NSSAI                                | Not Present  |   |           |
| Operator-defined access category definitions  | Not Present  |   |           |
| SMS indication                                | Not Present  |   |           |
| T3447 value                                   | Not Present  |   |           |
| CAG information list                          | Not Present  |   |           |
| UE radio capability ID                        | Not Present  |   |           |
| UE radio capability ID deletion indication    | Not Present  |   |           |
| 5GS registration result                       | Not Present  |   |           |
| Truncated 5G-S-TMSI configuration             | Not Present  |   |           |
| Additional configuration indication           | Not Present  |   |           |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Configuration update complete*

**Table 4.7.1-20: CONFIGURATION UPDATE COMPLETE**

| Derivation Path: 24.501 clause 8.2.20          |              |   |           |
|--|--------------|---|-----------|
| Information Element                            | Value/remark | Comment                                       | Condition |
| Extended protocol discriminator                | '0111 1110'B | 5GS mobility management messages              |           |
| Security header type                           | '0000'B      | Plain 5GS NAS message, not security protected |           |
| Spare half octet                               | '0000'B      |   |           |
| Configuration update complete message identity | '0101 0101'B |   |           |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

— *Identity request*

**Table 4.7.1-21: IDENTITY REQUEST**

| Derivation Path: 24.501 clause 8.2.21 |  |   |           |
|---------------------------------------|--|---|-----------|
| Information Element                   | Value/remark                               | Comment                                       | Condition |
| Extended protocol discriminator       | '0111 1110'B                               | 5GS mobility management messages              |           |
| Security header type                  | '0000'B                                    | Plain 5GS NAS message, not security protected |           |
| Spare half octet                      | '0000'B                                    |   |           |
| Identity request message identity     | '0101 1011'B                               |   |           |
| Identity type                         | Set according to specific message contents |   |           |
| Spare half octet                      | '0000'B                                    |   |           |

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

— *Identity response*

**Table 4.7.1-22: IDENTITY RESPONSE**

| Derivation Path: 24.501 clause 8.2.22 |                                  |   |           |
|---------------------------------------|----------------------------------|---|-----------|
| Information Element                   | Value/remark                     | Comment                                       | Condition |
| Extended protocol discriminator       | '0111 1110'B                     | 5GS mobility management messages              |           |
| Security header type                  | '0000'B                          | Plain 5GS NAS message, not security protected |           |
| Spare half octet                      | '0000'B                          |   |           |
| Identity response message identity    | 0101 1100'B                      |   |           |
| Mobile identity                       | Present but contents not checked |   |           |

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

— *Notification*

**Table 4.7.1-23: NOTIFICATION**

| Derivation Path: 24.501 clause 8.2.23 |              |   |           |
|---------------------------------------|--------------|---|-----------|
| Information Element                   | Value/remark | Comment                                       | Condition |
| Extended protocol discriminator       | '0111 1110'B | 5GS mobility management messages              |           |
| Security header type                  | '0000'B      | Plain 5GS NAS message, not security protected |           |
| Spare half octet                      | '0000'B      |   |           |
| Notification message identity         | '0110 0101'B |   |           |
| Access type                           | '01'B        | 3GPP access                                   |           |
| Spare half octet                      | '0000'B      |   |           |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

— *Notification response*

**Table 4.7.1-24: NOTIFICATION RESPONSE**

| Derivation Path: 24.501 clause 8.2.24  |                                  |   |           |
|--|----------------------------------|---|-----------|
| Information Element                    | Value/remark                     | Comment                                       | Condition |
| Extended protocol discriminator        | '0111 1110'B                     | 5GS mobility management messages              |           |
| Security header type                   | '0000'B                          | Plain 5GS NAS message, not security protected |           |
| Spare half octet                       | '0000'B                          |   |           |
| Notification response message identity | '0110 0110'B                     |   |           |
| PDU session status                     | If present: contents not checked |   |           |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

– *Security mode command***Table 4.7.1-25: SECURITY MODE COMMAND**

| Derivation Path: 24.501 clause 8.2.25  |   |  |                                |
|--|---|--|--------------------------------|
| Information Element                    | Value/remark  | Comment  | Condition                      |
| Extended protocol discriminator        | '0111 1110'B  | 5GS mobility management messages                                   |                                |
| Security header type                   | '0000'B   | Plain 5GS NAS message, not security protected                      |                                |
| Spare half octet                       | '0000'B   |  |                                |
| Security mode command message identity | '0101 1101'B  |  |                                |
| Selected NAS security algorithms       |   |  |                                |
| Type of ciphering algorithm            | Set according to PIXIT px_NAS_5GC_CipheringAlgorithm for default ciphering algorithm                |  |                                |
| Type of ciphering algorithm            | '0000'B   | 5G encryption algorithm 5G EA0 (null ciphering algorithm)          | For RF                         |
| Type of integrity protection algorithm | Set according to PIXIT px_NAS_5GC_IntegrityProtAlgorithm for default integrity protection algorithm | This value should not be equal to the null integrity algorithm.    |                                |
| ngKSI                                  |   |  |                                |
| NAS key set identifier                 | The valid NAS key set identifier  |  |                                |
| TSC                                    | '0'B  | native security context (for KSI <sub>AMF</sub> )                  |                                |
| Spare half octet                       | '0000'B   |  |                                |
| Replayed UE security capabilities      | Set according to the received UE security capabilities  |  |                                |
| IMEISV request                         | Not Present   |  |                                |
| Selected EPS NAS security algorithms   | Not Present   |  |                                |
| Selected EPS NAS security algorithms   |   |  | UE_S1_SU PPORTED               |
| Type of ciphering algorithm            | Set according to PIXIT px_NAS_CipheringAlgorithm for default ciphering algorithm                    | The px_NAS_Cipherin gAlgorithm PIXIT is defined in TS 36.523-3 [x] |                                |
| Type of integrity protection algorithm | Set according to PIXIT px_NAS_IntegrityProtAlg orithm for default integrity protection algorithm    | The px_NAS_Integrity ProtAlgorithm is defined in TS 36.523-3 [x]   |                                |
| Additional 5G security information     | Not Present   |  |                                |
| Additional 5G security information     |   |  | NO_VALID_SS_SECU RITY_CONTE XT |
| RINMR                                  | '1'B  | Retransmission of the initial NAS message requested                |                                |
| HDP                                    | '0'B  | K <sub>AMF</sub> derivation is not required                        |                                |
| EAP message                            | Not Present   |  |                                |
| EAP message                            | EAP-Success   | See Table 4.7.3.2-03   | EAP-AKA                        |
| ABBA                                   | '0000 0000 0000 0000'B  |  | EAP-AKA                        |

|                                      |   |  |                  |
|--------------------------------------|---|--|------------------|
| Replayed S1 UE security capabilities | Not Present   |  |                  |
| Replayed S1 UE security capabilities | Set according to the received UE security capabilities in the last REGISTRATION REQUEST message |  | UE_S1_SU PPORTED |

| Condition                    | Explanation   |
|------------------------------|---|
| NO_VALID_SS_SECURITY_CONTEXT | If the SS doesn't have a valid security context                         |
| EAP_AKA                      | EAP based primary authentication and key agreement procedure            |
| For RF                       | Used for RF/RRM test cases  |
| UE_S1_SUPPORTED              | The UE indicated support of S1 in the last REGISTRATION REQUEST message |

NOTE: This message is always sent integrity protected with new 5GS NAS security context.

– *Security mode complete*

**Table 4.7.1-26: SECURITY MODE COMPLETE**

| Derivation Path: 24.501 clause 8.2.26   |              |   |                  |
|---|--------------|---|------------------|
| Information Element                     | Value/remark | Comment                                       | Condition        |
| Extended protocol discriminator         | '0111 1110'B | 5GS mobility management messages              |                  |
| Security header type                    | '0000'B      | Plain 5GS NAS message, not security protected |                  |
| Spare half octet                        | '0000'B      |   |                  |
| Security mode complete message identity | '0101 1110'B |   |                  |
| IMEISV                                  | Not present  |   |                  |
| NAS message container                   | Not present  | Complete initial NAS message                  | RINMR_IND ICATED |
| non-IMEISV PEI                          | Not present  |   |                  |

| Condition       | Explanation  |
|-----------------|--|
| RINMR_INDICATED | The SS requested retransmission of the initial NAS message in the last SECURITY MODE COMMAND |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message with new 5GS NAS security context.

– *Security mode reject*

**Table 4.7.1-27: SECURITY MODE REJECT**

| Derivation Path: 24.501 clause 8.2.27 |  |   |           |
|---------------------------------------|--|---|-----------|
| Information Element                   | Value/remark   | Comment                                       | Condition |
| Extended protocol discriminator       | '0111 1110'B   | 5GS mobility management messages              |           |
| Security header type                  | '0000'B  | Plain 5GS NAS message, not security protected |           |
| Spare half octet                      | '0000'B  |   |           |
| Security mode reject message identity | '0101 1111'B   |   |           |
| 5GMM cause                            | The value is set according to specific message content |   |           |

NOTE: This message is sent without integrity protection before 5GS NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after 5GS NAS security mode control procedure has been successfully completed.

— ***Security protected 5GS NAS message***

**Table 4.7.1-28: SECURITY PROTECTED 5GS NAS MESSAGE**

| Derivation Path: 24.501 clause 8.2.28 |  |  |                |
|---------------------------------------|--|--|----------------|
| Information Element                   | Value/remark   | Comment  | Condition      |
| Extended protocol discriminator       | 5GMM   |  |                |
| Security header type                  | '0001'B  | Integrity protected  | UNCIPHERED     |
|                                       | '0010'B  | Integrity protected and ciphered   | CIPHERED       |
|                                       | '0011'B  | Integrity protected with new 5G NAS security context                     | UNCIPHERED-NEW |
|                                       | '0100'B  | Integrity protected and ciphered with new 5G NAS security context        | CIPHERED-NEW   |
| Spare half octet                      | '0000'B  |  |                |
| Message authentication code           | The calculated value of MAC-I for this message.      | The value of MAC-I is calculated by SS using Sequence number sent by UE. | SENT-BY-SS     |
|                                       | The same value as the XMAC-I value calculated by SS. |  | SENT-BY-UE     |
| Sequence number                       | The internal counter of the SS                       |  | SENT-BY-SS     |
|                                       | Any allowed value                                    |  | SENT-BY-UE     |
| Plain 5GS NAS message                 | Set according to specific message content            |  |                |

| Condition      | Explanation  |
|----------------|--|
| UNCIPHERED     | This condition applies to unciphered NAS message exchange                                  |
| CIPHERED       | This condition applies to ciphered NAS message exchange                                    |
| UNCIPHERED-NEW | This condition applies to unciphered NAS message exchange with new 5G NAS security context |
| CIPHERED-NEW   | This condition applies to ciphered NAS message exchange with new 5G NAS security context   |
| SENT-BY-SS     | Use for the message sent from SS to UE   |
| SENT-BY-UE     | Use for the message sent from UE to SS   |

— *5GMM status***Table 4.7.1-29: 5GMM STATUS**

| Derivation Path: 24.501 clause 8.2.29 |                                  |   |            |
|---------------------------------------|----------------------------------|---|------------|
| Information Element                   | Value/remark                     | Comment                                       | Condition  |
| Extended protocol discriminator       | 5GMM                             |   |            |
| Security header type                  | '0000'B                          | Plain 5GS NAS message, not security protected |            |
| Spare half octet                      | '0000'B                          |   |            |
| 5GMM STATUS message identity          | '0110 0100'B                     |   |            |
| 5GMM cause                            | '0110 1111'B                     | Protocol error, unspecified                   | SENT-BY-SS |
|                                       | Present but contents not checked |   | SENT-BY-UE |

| Condition  | Explanation                            |
|------------|--|
| SENT-BY-SS | Use for the message sent from SS to UE |
| SENT-BY-UE | Use for the message sent from UE to SS |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

— *Control plane service request*

**Table 4.7.1-30: CONTROL PLANE SERVICE REQUEST**

| Derivation Path: 24.501 clause 8.2.30          |  |   |                   |
|--|--|---|-------------------|
| Information Element                            | Value/remark                               | Comment   | Condition         |
| Extended protocol discriminator                | '0111 1110'B                               | 5GS mobility management messages                  |                   |
| Security header type                           | '0000'B                                    | Plain 5GS NAS message, not security protected     |                   |
| Spare half octet                               | '0000'B                                    |   |                   |
| Control plane service request message identity | '0100 1111'B                               |   |                   |
| Control plane service type                     | '001'B                                     | mobile terminated request                         |                   |
| ngKSI  |  |   |                   |
| NAS key set identifier                         | The valid NAS key set identifier of the UE |   |                   |
| TSC  | '0'B                                       | native security context (for KSI <sub>AMF</sub> ) |                   |
| CIoT small data container                      | If present: contents not checked           |   | NON_CLEA RTEXT_IE |
| Payload container type                         | If present: contents not checked           |   | NON_CLEA RTEXT_IE |
| Payload container                              | If present: contents not checked           |   | NON_CLEA RTEXT_IE |
| PDU session ID                                 | If present: contents not checked           |   | NON_CLEA RTEXT_IE |
| PDU session status                             | If present: contents not checked           |   | NON_CLEA RTEXT_IE |
| Release assistance indication                  | If present: contents not checked           |   | NON_CLEA RTEXT_IE |
| Uplink data status                             | If present: contents not checked           |   | NON_CLEA RTEXT_IE |
| NAS message container                          | If present: contents not checked           |   | CIPHERED_MESSAGE  |
| Additional information                         | If present: contents not checked           |   | NON_CLEA RTEXT_IE |

| Condition        | Explanation   |
|------------------|---|
| NON_CLEARTEXT_IE | An information element that is not allowed to be sent in cleartext and shall only be included in the complete CONTROL PLANE SERVICE REQUEST message in the NAS message container IE.<br>NOTE: This condition is only applicable if the CONTROL PLANE SERVICE REQUEST message is sent as an initial NAS message. |
| CIPHERED_MESSAGE | If any of the IEs marked with the condition NON_CLEARTEXT_IE is present, this condition applies.<br>NOTE: This condition is only applicable if the CONTROL PLANE SERVICE REQUEST message is sent as an initial NAS message.   |

NOTE: This message is sent without integrity protection, including only cleartext IEs, before NAS security mode control procedure has been successfully completed and sent within SECURITY PROTECTED 5GS NAS MESSAGE message after NAS security mode control procedure has been successfully completed

- *Network slice-specific authentication command*

**Table 4.7.1-31: NETWORK SLICE-SPECIFIC AUTHENTICATION COMMAND**

| Derivation Path: 24.501 clause 8.2.31                          |   |   |           |
|--|---|---|-----------|
| Information Element  | Value/remark                              | Comment                                       | Condition |
| Extended protocol discriminator                                | '0111 1110'B                              | 5GS mobility management messages              |           |
| Security header type   | '0000'B                                   | Plain 5GS NAS message, not security protected |           |
| Spare half octet   | '0000'B                                   |   |           |
| NETWORK SLICE-SPECIFIC AUTHENTICATION COMMAND message identity | '0101 0000'B                              |   |           |
| S-NSSAI  | Set according to specific message content |   |           |
| EAP message  | FFS                                       |   |           |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

- *Network slice-specific authentication complete*

**Table 4.7.1-32: NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE**

| Derivation Path: 24.501 clause 8.2.32                           |   |   |           |
|---|---|---|-----------|
| Information Element   | Value/remark                              | Comment                                       | Condition |
| Extended protocol discriminator                                 | '0111 1110'B                              | 5GS mobility management messages              |           |
| Security header type  | '0000'B                                   | Plain 5GS NAS message, not security protected |           |
| Spare half octet  | '0000'B                                   |   |           |
| NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE message identity | '0101 0001'B                              |   |           |
| S-NSSAI   | Set according to specific message content |   |           |
| EAP message   | FFS                                       |   |           |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

- *Network slice-specific authentication result*

**Table 4.7.1-33: NETWORK SLICE-SPECIFIC AUTHENTICATION RESULT**

| Derivation Path: 24.501 clause 8.2.33                           |   |   |           |
|---|---|---|-----------|
| Information Element   | Value/remark                              | Comment                                       | Condition |
| Extended protocol discriminator                                 | '0111 1110'B                              | 5GS mobility management messages              |           |
| Security header type  | '0000'B                                   | Plain 5GS NAS message, not security protected |           |
| Spare half octet  | '0000'B                                   |   |           |
| NETWORK SLICE-SPECIFIC AUTHENTICATION COMPLETE message identity | '0101 0010'B                              |   |           |
| S-NSSAI   | Set according to specific message content |   |           |
| EAP message   | FFS                                       |   |           |

NOTE: This message is always sent within SECURITY PROTECTED 5GS NAS MESSAGE message.

## 4.7.2 Contents of 5GSM messages

- *PDU session establishment request*

**Table 4.7.2-1: PDU SESSION ESTABLISHMENT REQUEST**

| Derivation Path: 24.501 clause 8.3.1               |   |   |           |
|--|---|---|-----------|
| Information Element                                | Value/remark  | Comment   | Condition |
| Extended protocol discriminator                    | '0010 1110'B  | 5GS session management messages   |           |
| PDU session ID                                     | Any value according to TS 24.501 [25] subclause 9.4 |   |           |
| PTI  | Any value from 1 to 254                             |   |           |
| PDU SESSION ESTABLISHMENT REQUEST message identity | '1100 0001'B  |   |           |
| Integrity protection maximum data rate             | Present but contents not checked                    |   |           |
| PDU session type                                   | Any value between '001'B, '010'B and '011'B         | The allowed values are respectively IPv4, IPv6 and IPv4v6   |           |
| SSC mode   | If present: contents not checked                    |   |           |
| 5GSM capability                                    | If present: contents not checked                    |   |           |
| Maximum number of supported packet filters         | If present: contents not checked                    |   |           |
| Always-on PDU session requested                    | If present: contents not checked                    |   |           |
| SM PDU DN request container                        | If present: contents not checked                    |   |           |
| Extended protocol configuration options            | If present: contents not checked                    | The SS shall remember if this IE is present and its contents because this affects subsequent SS behaviour, e.g. coding of PDU SESSION ESTABLISHMENT ACCEPT. |           |
| IP header compression configuration                | If present: contents not checked                    |   |           |
| DS-TT Ethernet port MAC address                    | If present: contents not checked                    |   |           |
| UE-DS-TT residence time                            | If present: contents not checked                    |   |           |
| Port management information container              | If present: contents not checked                    |   |           |
| Ethernet header compression configuration          | If present: contents not checked                    |   |           |
| Suggested interface identifier                     | If present: contents not checked                    |   |           |

— *PDU session establishment accept*

**Table 4.7.2-2: PDU SESSION ESTABLISHMENT ACCEPT**

| Derivation Path: 24.501 clause 8.3.2              |   |   |                        |
|---|---|---|------------------------|
| Information Element                               | Value/remark  | Comment   | Condition              |
| Extended protocol discriminator                   | '0010 1110'B  | 5GS session management messages                   |                        |
| PDU session ID                                    | The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message  |   |                        |
| PTI   | The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message  |   |                        |
| PDU SESSION ESTABLISHMENT ACCEPT message identity | '1100 0010'B  |   |                        |
| Selected PDU session type                         | '001'B<br>'010'B<br>'011'B  |   | IPv4<br>IPv6<br>IPv4v6 |
| Selected SSC mode                                 | '001'B  | SSC mode 1  |                        |
| Authorized QoS rules                              | 5GC QoS rule of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc_APN_Default_Configuration if the DNN IE was not present |   |                        |
| Session AMBR                                      |   |   |                        |
| Unit for Session-AMBR for downlink                | '000 00101'   | Value is incremented in multiples of 256 Kbps     |                        |
| Session-AMBR for downlink                         | '0000 0000 0000 0100'B  | 1024 Kbps   |                        |
| Unit for Session-AMBR for uplink                  | '000 00101'   | Value is incremented in multiples of 256 Kbps     |                        |
| Session-AMBR for uplink                           | '0000 0000 0000 0100'B  | 1024 Kbps   |                        |
| 5GSM cause  | Not Present   |   |                        |
| PDU address                                       |   |   | IPv4                   |
| Length of PDU address contents                    | 5 octets  |   |                        |
| PDU type value                                    | '001'B  | IPv4  |                        |
| PDU address information                           | IPv4 address  | The SS provides a valid IPv4 address              | NOT IPv4-DHCP          |
|   | 0.0.0.0   | DHCPv4 is to be used to allocate the IPv4 address | IPv4-DHCP              |
| PDU address                                       |   |   | IPv6                   |
| Length of PDU address contents                    | 9 octets  |   |                        |
| PDU type value                                    | '010'B  | IPv6  |                        |
| PDU address information                           | IPv6 interface identifier   | The SS provides a valid IPv6 interface identifier |                        |
| PDU address                                       |   |   | IPv4v6                 |
| Length of PDU address contents                    | 13 octets   |   |                        |

|   |   |   |                            |
|---|---|---|----------------------------|
| PDU type value                            | '011'B  | IPv4v6  |                            |
| PDU address information (Octets 4 to 11)  | IPv6 interface identifier   | The SS provides a valid IPv6 interface identifier |                            |
| PDU address information (Octets 12 to 15) | IPv4 address  | The SS provides a valid IPv4 address              | NOT IPv4-DHCP              |
|   | 0.0.0.0   | DHCPv4 is to be used to allocate the IPv4 address | IPv4-DHCP                  |
| RQ timer value                            | Not Present   |   |                            |
| S-NSSAI                                   |   |   |                            |
| Length of S-NSSAI contents                | '0000 0001'B  | SST   |                            |
| SST                                       | '0000 0001'B  | SST value 1 (eMBB)                                |                            |
| SST                                       | '0000 0010'B  | SST value 2 (URLLC)                               | SST_URLLC                  |
| SST                                       | '0000 0011'B  | SST value 3 (MIoT)                                | SST_MIoT                   |
| SST                                       | '0000 0100'B  | SST value 4 (V2X)                                 | SST_V2X                    |
| Always-on PDU session indication          | Not Present   |   |                            |
| Always-on PDU session indication          |   |   |                            |
| APSI                                      | '0'B  | Always-on PDU session not allowed                 | Always_On_Requested        |
| Mapped EPS bearer contexts                | Not Present   |   |                            |
| Mapped EPS bearer contexts                |   |   | Interworking_with_EPS      |
| Mapped EPS bearer context                 |   |   |                            |
| EPS bearer identity                       | The same value as the one specified in the Reference QoS flow referred to from the Reference QoS rule indicated in the IE Authorized QoS rules  |   |                            |
| Operation code                            | '001'B  | Create new EPS bearer                             |                            |
| E bit                                     | '1'B  | Parameters list is included                       |                            |
| Number of EPS parameters                  | '0001'B   | 1 parameter                                       |                            |
| Mapped EPS QoS parameters                 | EPC default bearer context of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc_APN_Default_Configuration if the DNN IE was not present |   |                            |
| EAP message                               | Not Present   |   |                            |
| Authorized QoS flow descriptions          | The QoS flow referred to in the relevant Authorized QoS rules IE  |   |                            |
| Extended protocol configuration options   | Not Present   |   |                            |
| Extended protocol configuration options   |   |   | P-CSCF_IPv6 OR P-CSCF_IPv4 |
| Container ID 1                            | '0001'H   |   | P-CSCF_IPv6                |
| Length of container ID 1 contents         |   | Length value                                      |                            |

|   |   |  |             |
|---|---|--|-------------|
|   |   | determined by test implementation              |             |
| Container ID 1 contents                   | IPv6 address  | P-CSCF IPv6 Address                            |             |
| Container ID 2                            | '000C'H   |  | P-CSCF_IPv4 |
| Length of container ID 2 contents         |   | Length value determined by test implementation |             |
| Container ID 2 contents                   | IPv4 address  | P-CSCF IPv4 Address                            |             |
| DNN                                       | The DNN/APN ID of the entry in Table 4.8.4-1 which has been determined by the DNN IE in the UL NAS TRANSPORT message which carried the corresponding PDU SESSION ESTABLISHMENT REQUEST or by pc_APN_Default_Configuration if the DNN IE was not present |  |             |
| 5GSM network feature support              | Not Present   |  |             |
| Serving PLMN rate control                 | Not Present   |  |             |
| ATSSS container                           | Not Present   |  |             |
| Control plane only indication             | Not Present   |  |             |
| IP header compression configuration       | Not Present   |  |             |
| Ethernet header compression configuration | Not Present   |  |             |

| Condition             | Explanation   |
|-----------------------|---|
| IPv4                  | If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '001'B  |
| IPv6                  | If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '010'B  |
| IPv4v6                | If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the PDU session type = '011'B  |
| IPv4-DHCP             | If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message, the IE Extended protocol configuration options contains a configuration protocol option = '000BH' ("IPv4 address allocation via DHCPv4", length of contents = 0).<br><br>Note: This condition is used in conjunction with IPv4 or IPv4v6 as indicated in the "PDU address information" just above. |
| Always_On_Requested   | If the last PDU SESSION ESTABLISHMENT REQUEST message included the Always-on PDU session requested IE   |
| P-CSCF_IPv6           | If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message the IE Extended protocol configuration options contains a configuration protocol option = '0001H' ("P-CSCF IPv6 Address Request", length of contents = 0)   |
| P-CSCF_IPv4           | If in the last PDU SESSION ESTABLISHMENT REQUEST sent prior to this message the IE Extended protocol configuration options contains a configuration protocol option = '000CH' ("P-CSCF IPv4 Address Request", length of contents = 0)   |
| Interworking_with_EPS | If the UE has indicated support of S1, then the SS shall include this IE to provide details for the interworking with EPS being supported for a PDU session. This requirement is set up for the purpose of facilitating the test description. It is not mandatory for the Network to support Mapped EPS bearer contexts.  |
| SST_URLLC             | Slice suitable for the handling of ultra-reliable low latency communications.   |
| SST_MIoT              | Slice suitable for the handling of massive IoT  |
| SST_V2X               | Slice suitable for the handling of V2X services.  |

– *PDU session establishment reject*

**Table 4.7.2-3: PDU SESSION ESTABLISHMENT REJECT**

| Derivation Path: 24.501 clause 8.3.3              |  |                                 |           |
|---|--|---------------------------------|-----------|
| Information Element                               | Value/remark   | Comment                         | Condition |
| Extended protocol discriminator                   | '0010 1110'B   | 5GS session management messages |           |
| PDU session ID                                    | The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message |                                 |           |
| PTI   | The same value as the value set in PDU SESSION ESTABLISHMENT REQUEST message |                                 |           |
| PDU SESSION ESTABLISHMENT REJECT message identity | '1100 0011'B   |                                 |           |
| 5GSM cause  | The value is set according to specific message content                       |                                 |           |
| Back-off timer value                              | Not Present  |                                 |           |
| Allowed SSC mode                                  | Not Present  |                                 |           |
| EAP message                                       | Not Present  |                                 |           |
| Extended protocol configuration options           | Not Present  |                                 |           |
| Re-attempt indicator                              | Not Present  |                                 |           |
| 5GSM congestion re-attempt indicator              | Not Present  |                                 |           |

— *PDU session authentication command*

**Table 4.7.2-4: PDU SESSION AUTHENTICATION COMMAND**

| Derivation Path: 24.501 clause 8.3.4                |   |  |           |
|---|---|--|-----------|
| Information Element                                 | Value/remark                              | Comment                                    | Condition |
| Extended protocol discriminator                     | '0010 1110'B                              | 5GS session management messages            |           |
| PDU session ID                                      | Set according to specific message content |  |           |
| PTI   | '0000 0000'B                              | No procedure transaction identity assigned |           |
| PDU SESSION AUTHENTICATION COMMAND message identity | '1100 0101'B                              |  |           |
| EAP message   | FFS                                       | See TS 24.501 [25] subclause 9.11.2.2      |           |
| Extended protocol configuration options             | Not Present                               |  |           |

— *PDU session authentication complete*

**Table 4.7.2-5: PDU SESSION AUTHENTICATION COMPLETE**

| Derivation Path: 24.501 clause 8.3.5                 |   |  |           |
|--|---|--|-----------|
| Information Element                                  | Value/remark  | Comment                                    | Condition |
| Extended protocol discriminator                      | '0010 1110'B  | 5GS session management messages            |           |
| PDU session ID                                       | The value indicated in PDU SESSION AUTHENTICATION COMMAND message |  |           |
| PTI  | '0000 0000'B  | No procedure transaction identity assigned |           |
| PDU SESSION AUTHENTICATION COMPLETE message identity | '1100 0110'B  |  |           |
| EAP message  | FFS   | See TS 24.501 [25] subclause 9.11.2.2      |           |
| Extended protocol configuration options              | If present: contents not checked                                  |  |           |

— *PDU session authentication result*

**Table 4.7.2-6: PDU SESSION AUTHENTICATION RESULT**

| Derivation Path: 24.501 clause 8.3.6               |   |  |           |
|--|---|--|-----------|
| Information Element                                | Value/remark  | Comment                                    | Condition |
| Extended protocol discriminator                    | '0010 1110'B  | 5GS session management messages            |           |
| PDU session ID                                     | The value indicated in PDU SESSION AUTHENTICATION COMMAND message |  |           |
| PTI  | '0000 0000'B  | No procedure transaction identity assigned |           |
| PDU SESSION AUTHENTICATION RESULT message identity | '1100 0111'B  |  |           |
| EAP message  | FFS   | See TS 24.501 [25] subclause 9.11.2.2      |           |
| Extended protocol configuration options            | Not Present   |  |           |

— *PDU session modification request*

**Table 4.7.2-7: PDU SESSION MODIFICATION REQUEST**

| Derivation Path: 24.501 clause 8.3.7              |  |                                 |           |
|---|--|---------------------------------|-----------|
| Information Element                               | Value/remark   | Comment                         | Condition |
| Extended protocol discriminator                   | '0010 1110'B   | 5GS session management messages |           |
| PDU session ID                                    | The value indicated in PDU SESSION ESTABLISHMENT REQUEST message |                                 |           |
| PTI   | Any value from 1 to 254  |                                 |           |
| PDU SESSION MODIFICATION REQUEST message identity | '1100 1001'B   |                                 |           |
| 5GSM capability                                   | If present: contents not checked                                 |                                 |           |
| 5GSM cause  | If present: contents not checked                                 |                                 |           |
| Maximum number of supported packet filters        | If present: contents not checked                                 |                                 |           |
| Always-on PDU session requested                   | If present: contents not checked                                 |                                 |           |
| Integrity protection maximum data rate            | If present: contents not checked                                 |                                 |           |
| Requested QoS rules                               | If present: contents not checked                                 |                                 |           |
| Requested QoS flow descriptions                   | If present: contents not checked                                 |                                 |           |
| Mapped EPS bearer contexts                        | If present: contents not checked                                 |                                 |           |
| Extended protocol configuration options           | If present: contents not checked                                 |                                 |           |
| Port management information container             | If present: contents not checked                                 |                                 |           |
| IP header compression configuration               | If present: contents not checked                                 |                                 |           |
| Ethernet header compression configuration         | If present: contents not checked                                 |                                 |           |

— *PDU session modification reject*

**Table 4.7.2-8: PDU SESSION MODIFICATION REJECT**

| Derivation Path: 24.501 clause 8.3.8             |  |                                 |           |
|--|--|---------------------------------|-----------|
| Information Element                              | Value/remark   | Comment                         | Condition |
| Extended protocol discriminator                  | '0010 1110'B   | 5GS session management messages |           |
| PDU session ID                                   | The value indicated in PDU SESSION MODIFICATION REQUEST message. |                                 |           |
| PTI  | The value indicated in PDU SESSION MODIFICATION REQUEST message. |                                 |           |
| PDU SESSION MODIFICATION REJECT message identity | '1100 1010'B   |                                 |           |
| 5GSM cause                                       | Set according to specific message content.                       |                                 |           |
| Back-off timer value                             | Not Present  |                                 |           |
| Extended protocol configuration options          | Not Present  |                                 |           |
| Re-attempt indicator                             | Not Present  |                                 |           |
| 5GSM congestion re-attempt indicator             | Not Present  |                                 |           |

— *PDU session modification command*

**Table 4.7.2-9: PDU SESSION MODIFICATION COMMAND**

| Derivation Path: 24.501 clause 8.3.9              |  |  |                           |
|---|--|--|---------------------------|
| Information Element                               | Value/remark   | Comment                                    | Condition                 |
| Extended protocol discriminator                   | '0010 1110'B   | 5GS session management messages            |                           |
| PDU session ID                                    | Set according to specific message content.                       |  |                           |
| PDU session ID                                    | The value indicated in PDU SESSION MODIFICATION REQUEST message. |  | UE_Initiated_Modification |
| PTI   | '0000 0000'B   | No procedure transaction identity assigned |                           |
| PTI   | The value indicated in PDU SESSION MODIFICATION REQUEST message. |  | UE_Initiated_Modification |
| PDU SESSION MODIFICATION COMMAND message identity | '1100 1011'B   |  |                           |
| 5GSM cause  | Not Present  |  |                           |
| Session AMBR                                      | Not Present  |  |                           |
| RQ timer value                                    | Not Present  |  |                           |
| Always-on PDU session indication                  | Not Present  |  |                           |
| Always-on PDU session indication                  |  |  |                           |
| APSI  | '0'B   | Always-on PDU session not allowed          | Always_On_Requested       |
| Authorized QoS rules                              | Not Present  |  |                           |
| Mapped EPS bearer contexts                        | Not Present  |  |                           |
| Authorized QoS flow descriptions                  | Not Present  |  |                           |
| Extended protocol configuration options           | Not Present  |  |                           |
| ATSSS container                                   | Not Present  |  |                           |
| IP header compression configuration               | Not Present  |  |                           |
| Port management information container             | Not Present  |  |                           |
| Serving PLMN rate control                         | Not Present  |  |                           |
| Ethernet header compression configuration         | Not Present  |  |                           |

| Condition                 | Explanation  |
|---------------------------|--|
| Always_On_Requested       | If the last PDU SESSION MODIFICATION REQUEST message included the Always-on PDU session requested IE |
| UE_Initiated_Modification | If this message was triggered by a PDU SESSION MODIFICATION REQUEST message sent by the UE           |

– *PDU session modification complete*

**Table 4.7.2-10: PDU SESSION MODIFICATION COMPLETE**

| Derivation Path: 24.501 clause 8.3.10              |  |  |                           |
|--|--|--|---------------------------|
| Information Element                                | Value/remark   | Comment                                    | Condition                 |
| Extended protocol discriminator                    | '0010 1110'B   | 5GS session management messages            |                           |
| PDU session ID                                     | The value indicated in PDU SESSION MODIFICATION COMMAND message  |  |                           |
| PTI  | '0000 0000'B   | No procedure transaction identity assigned |                           |
| PTI  | The value indicated in PDU SESSION MODIFICATION REQUEST message. |  | UE_Initiated_Modification |
| PDU SESSION MODIFICATION COMPLETE message identity | '1100 1100'B   |  |                           |
| Extended protocol configuration options            | If present: contents not checked                                 |  |                           |
| Port management information container              | If present: contents not checked                                 |  |                           |

| Condition                 | Explanation  |
|---------------------------|--|
| UE_Initiated_Modification | If this message was triggered by a PDU SESSION MODIFICATION REQUEST message sent by the UE |

– *PDU session modification command reject*

**Table 4.7.2-11: PDU SESSION MODIFICATION COMMAND REJECT**

| Derivation Path: 24.501 clause 8.3.11                    |   |  |           |
|--|---|--|-----------|
| Information Element                                      | Value/remark  | Comment                                    | Condition |
| Extended protocol discriminator                          | '0010 1110'B  | 5GS session management messages            |           |
| PDU session ID   | The value indicated in PDU SESSION MODIFICATION COMMAND message |  |           |
| PTI  | '0000 0000'B  | No procedure transaction identity assigned |           |
| PDU SESSION MODIFICATION COMMAND REJECT message identity | '1100 1101'B  |  |           |
| 5GSM cause   | If present: contents not checked                                |  |           |
| Extended protocol configuration options                  | If present: contents not checked                                |  |           |

— *PDU session release request*

**Table 4.7.2-12: PDU SESSION RELEASE REQUEST**

| Derivation Path: 24.501 clause 8.3.12        |  |                                 |           |
|--|--|---------------------------------|-----------|
| Information Element                          | Value/remark   | Comment                         | Condition |
| Extended protocol discriminator              | '0010 1110'B   | 5GS session management messages |           |
| PDU session ID                               | The value indicated in PDU SESSION ESTABLISHMENT REQUEST message |                                 |           |
| PTI  | Any value from 1 to 254  |                                 |           |
| PDU SESSION RELEASE REQUEST message identity | '1101 0001'B   |                                 |           |
| 5GSM cause                                   | If present: contents not checked                                 |                                 |           |
| Extended protocol configuration options      | If present: contents not checked                                 |                                 |           |

— *PDU session release reject*

**Table 4.7.2-13: PDU SESSION RELEASE REJECT**

| Derivation Path: 24.501 clause 8.3.13       |   |                                 |           |
|---|---|---------------------------------|-----------|
| Information Element                         | Value/remark  | Comment                         | Condition |
| Extended protocol discriminator             | '0010 1110'B  | 5GS session management messages |           |
| PDU session ID                              | The value indicated in PDU SESSION RELEASE REQUEST message. |                                 |           |
| PTI   | The value indicated in PDU SESSION RELEASE REQUEST message. |                                 |           |
| PDU SESSION RELEASE REJECT message identity | '1101 0010'B  |                                 |           |
| 5GSM cause                                  | Set according to specific message content.                  |                                 |           |
| Extended protocol configuration options     | Not Present   |                                 |           |

— *PDU session release command*

**Table 4.7.2-14: PDU SESSION RELEASE COMMAND**

| Derivation Path: 24.501 clause 8.3.14        |  |  |           |
|--|--|--|-----------|
| Information Element                          | Value/remark                               | Comment                                    | Condition |
| Extended protocol discriminator              | '0010 1110'B                               | 5GS session management messages            |           |
| PDU session ID                               | Set according to specific message content. |  |           |
| PTI  | '0000 0000'B                               | No procedure transaction identity assigned |           |
| PDU SESSION RELEASE COMMAND message identity | '1101 0011'B                               |  |           |
| 5GSM cause                                   | '0001 1010'B                               | Insufficient resources                     |           |
| Back-off timer value                         | Not Present                                |  |           |
| EAP message                                  | Not Present                                |  |           |
| 5GSM congestion re-attempt indicator         | Not Present                                |  |           |
| Extended protocol configuration options      | Not Present                                |  |           |
| Access type                                  | Not Present                                |  |           |

— *PDU session release complete*

**Table 4.7.2-15: PDU SESSION RELEASE COMPLETE**

| Derivation Path: 24.501 clause 8.3.15         |   |  |           |
|---|---|--|-----------|
| Information Element                           | Value/remark  | Comment                                    | Condition |
| Extended protocol discriminator               | '0010 1110'B  | 5GS session management messages            |           |
| PDU session ID                                | The value indicated in PDU SESSION RELEASE COMMAND message. |  |           |
| PTI   | '0000 0000'B  | No procedure transaction identity assigned |           |
| PDU SESSION RELEASE COMPLETE message identity | '1101 0100'B  |  |           |
| 5GSM cause                                    | If present: contents not checked                            |  |           |
| Extended protocol configuration options       | If present: contents not checked                            |  |           |

— **5GSM status**

**Table 4.7.2-16: 5GSM STATUS**

| Derivation Path: 24.501 clause 8.3.16 |  |                                 |           |
|---------------------------------------|--|---------------------------------|-----------|
| Information Element                   | Value/remark                               | Comment                         | Condition |
| Extended protocol discriminator       | '0010 1110'B                               | 5GS session management messages |           |
| PDU session ID                        | Set according to specific message content. |                                 |           |
| PTI                                   | Set according to specific message content. |                                 |           |
| 5GSM STATUS message identity          | '1101 0110'B                               |                                 |           |
| 5GSM cause                            | Set according to specific message content. |                                 |           |

### 4.7.3 Contents of EAP-AKA' messages

For all the message definitions below, the acceptable order and syntax of attributes and fields within these attributes must be according to IETF RFCs where those attributes have been defined. Typically the order of attributes is not significant, but there could be well defined exceptions where the order is important.

The contents of the messages described in the present Annex is not complete - only the attributes required to be checked or generated by SS are listed here. The messages sent by the UE may contain additional attributes which are not checked and must thus be ignored by SS.

#### 4.7.3.1 EAP-AKA' message attributes

**Table 4.7.3.1-1: AT\_RAND\_Def**

| Derivation Path: IETF RFC 4187 [30] clause 10.6 |  |         |           |
|---|--|---------|-----------|
| Information Element                             | Value/remark                           | Comment | Condition |
| AT_RAND   | '0000 0001'B                           | 1       |           |
| Length  | '0000 0101'B                           | 5       |           |
| Reserved  | '0000 0000 0000 0000'B                 |         |           |
| RAND  | An arbitrarily selected 128 bits value |         |           |

**Table 4.7.3.1-2: AT\_AUTN\_Def**

| Derivation Path: IETF RFC 4187 [30] clause 10.7 |  |         |           |
|---|--|---------|-----------|
| Information Element                             | Value/remark   | Comment | Condition |
| AT_AUTN   | '0000 0010'B   | 2       |           |
| Length  | '0000 0101'B   | 5       |           |
| Reserved  | '0000 0000 0000 0000'B   |         |           |
| AUTN  | 128 bits value generated according to TS 24.501 [28] subclause 9.11.3.15 |         |           |

**Table 4.7.3.1-3: AT\_KDF\_Def**

| Derivation Path: IETF RFC 5448 [31] clause 3.3 |                       |             |           |
|--|-----------------------|-------------|-----------|
| Information Element                            | Value/remark          | Comment     | Condition |
| AT_KDF   | '0001 1000'B          | 24          |           |
| Length   | '0000 0001'B          | 1           |           |
| KDF  | '0000 0000 0000 0001' | 1: EAP_AKA' |           |

**Table 4.7.3.1-4: AT\_KDF\_INPUT\_Def**

| Derivation Path: IETF RFC 5448 [31] clause 3.2 |   |         |           |
|--|---|---------|-----------|
| Information Element                            | Value/remark  | Comment | Condition |
| AT_KDF_INPUT                                   | '0001 0111'B  | 23      |           |
| Length   | Set to the Length of attribute AT_KDF_INPUT in 4 bytes  |         |           |
| Actual Network Name Length                     | Set to the actual length of 'Network Name' in bytes excluding any appended all zero bytes at end  |         |           |
| Network Name                                   | Value generated according to TS 24.501 [28] clause 9.12.1 and shall be a multiple of 4 bytes (appended with 1,2 or 3 bytes of all zero bits when necessary) |         |           |

**Table 4.7.3.1-5: AT\_MAC\_Def**

| Derivation Path: IETF RFC 4187 [30] clause 10.15 |   |         |           |
|--|---|---------|-----------|
| Information Element                              | Value/remark  | Comment | Condition |
| AT_MAC   | '0000 1011'B  | 11      |           |
| Length   | '0000 0101'B  | 5       |           |
| Reserved   | '0000 0000 0000 0000'B  |         |           |
| MAC  | 128 bits value generated according to RFC 4187 [30] subclause 10.15 |         |           |

**Table 4.7.3.1-6: AT\_RES\_Def**

| Derivation Path: IETF RFC 4187 [30] clause 10.08 |  |         |           |
|--|--|---------|-----------|
| Information Element                              | Value/remark   | Comment | Condition |
| AT_RES   | '0000 0011'B   | 3       |           |
| Length   | Set to Length of AT_RES attribute in 4 bytes.  | 1 byte  |           |
| RES_LENGTH                                       | Set to the actual length of 'RES' in bytes excluding any appended all zero bytes at end  |         |           |
| RES  | RES* value calculated according to TS 24.501 [28] clause 9.11.3.17, possibly appended with 1,2 or 3 bytes of all zero bits to make lenght multiple of 4 bytes. |         |           |

**Table 4.7.3.1-7: AT\_AUTS\_Def**

| Derivation Path: IETF RFC 4187 [30] clause 10.08 |                                  |         |           |
|--|----------------------------------|---------|-----------|
| Information Element                              | Value/remark                     | Comment | Condition |
| AT_AUTS  | '0000 0100'B                     | 4       |           |
| Length   | '0000 0100'B                     | 4       |           |
| AUTS   | 14 octets RES* value not checked |         |           |

**Table 4.7.3.1-8: AT\_PERMANENT\_ID\_Def**

| Derivation Path: IETF RFC 4187 [30] clause 10.2 |                        |         |           |
|---|------------------------|---------|-----------|
| Information Element                             | Value/remark           | Comment | Condition |
| AT_PERMANENT_ID_REQ                             | '0000 1010'B           | 10      |           |
| Length  | '0000 0001'B           | 1       |           |
| Reserved  | '0000 0000 0000 0000'B |         |           |

**Table 4.7.3.1-9: AT\_ANY\_ID\_REQ\_Def**

| Derivation Path: IETF RFC 4187 [30] clause 10.3 |                        |         |           |
|---|------------------------|---------|-----------|
| Information Element                             | Value/remark           | Comment | Condition |
| AT_ANY_ID_REQ                                   | '0000 1101'B           | 13      |           |
| Length  | '0000 0001'B           | 1       |           |
| Reserved  | '0000 0000 0000 0000'B |         |           |

**Table 4.7.3.1-10: AT\_FULLAUTH\_ID\_Def**

| Derivation Path: IETF RFC 4187 [30] clause 10.4 |                        |         |           |
|---|------------------------|---------|-----------|
| Information Element                             | Value/remark           | Comment | Condition |
| AT_FULLAUTH_ID_REQ                              | '0001 0001'B           | 17      |           |
| Length  | '0000 0001'B           | 1       |           |
| Reserved  | '0000 0000 0000 0000'B |         |           |

**Table 4.7.3.1-11: AT\_IDENTITY\_Def**

| Derivation Path: IETF RFC 4187 [30] clause 10.5 |   |         |           |
|---|---|---------|-----------|
| Information Element                             | Value/remark  | Comment | Condition |
| AT_IDENTITY                                     | '0000 1110'B  | 14      |           |
| Length  | Set to the Length of AT_IDENTITY attribute in 4 bytes   |         |           |
| Actual Identity Length                          | Set to the actual length of 'identity' in bytes excluding any appended all zero bytes at end  |         |           |
| Identity  | Value generated according to TS 24.501 [28] clause 9.11.3.4 and shall be a multiple of 4 bytes (appended with 1,2 or 3 bytes of all zero bits when necessary) |         |           |

**Table 4.7.3.1-12: AT\_NOTIFICATION\_Def**

| Derivation Path: IETF RFC 4187 [30] clause 10.19 |   |         |           |
|--|---|---------|-----------|
| Information Element                              | Value/remark  | Comment | Condition |
| AT_NOTIFICATION                                  | '0000 1100'B  | 12      |           |
| Length   | '0000 0001'B  | 1       |           |
| Notification Code                                | 16 bits value generated according to RFC 4187 [30] subclause 10.19. |         |           |

#### 4.7.3.2 EAP-AKA' messages

**Table 4.7.3.2-1: EAP-Request/AKA'-Challenge**

| Derivation Path: IETF RFC 4187 [30] clause 9.3, RFC 3748 [32] clause 4 |                             |         |           |
|--|-----------------------------|---------|-----------|
| Information Element  | Value/remark                | Comment | Condition |
| Code   | 1                           | Request |           |
| Length   | Set to length of EAP packet |         |           |
| Data   |                             |         |           |
| AT_RAND  | AT_RAND_Def                 |         |           |
| AT_AUTN  | AT_AUTN_Def                 |         |           |
| AT_KDF   | AT_KDF_Def                  |         |           |
| AT_KDF_INPUT   | AT_KDF_INPUT_Def            |         |           |
| AT_MAC   | AT_MAC_Def                  |         |           |

**Table 4.7.3.2-2: EAP-Response/AKA'-Challenge**

| Derivation Path: IETF RFC 4187 [30] clause 9.4, RFC 3748 [32] clause 4 |                             |          |           |
|--|-----------------------------|----------|-----------|
| Information Element  | Value/remark                | Comment  | Condition |
| Code   | 2                           | Response |           |
| Length   | Set to length of EAP packet |          |           |
| Data   |                             |          |           |
| AT_Res   | AT_Res_Def                  |          |           |
| AT_MAC   | AT_MAC_Def                  |          |           |

**Table 4.7.3.2-3: EAP-Succes**

| Derivation Path: IETF RFC 4187 [30] clause 6.3.4, RFC 3748 [32] clause 4 |                             |                                 |           |
|--|-----------------------------|---------------------------------|-----------|
| Information Element  | Value/remark                | Comment                         | Condition |
| Code   | 3                           | Success                         |           |
| Length   | Set to length of EAP packet |                                 |           |
| Data   | Not present                 | Specific attributes not present |           |

**Table 4.7.3.2-4: EAP-Response/AKA-Authentication-Reject**

| Derivation Path: IETF RFC 4187 [30] clause 9.5, RFC 3748 [32] clause 4 |                             |         |           |
|--|-----------------------------|---------|-----------|
| Information Element  | Value/remark                | Comment | Condition |
| Code   | 4                           | Failure |           |
| Length   | Set to length of EAP packet |         |           |
| Data   | Not checked                 |         |           |

**Table 4.7.3.2-5: EAP-Response/AKA-Synchronization-Failure**

| Derivation Path: IETF RFC 4187 [30] clause 9.6, RFC 3748 [32] clause 4 |                             |         |           |
|--|-----------------------------|---------|-----------|
| Information Element  | Value/remark                | Comment | Condition |
| Code   | 4                           | Failure |           |
| Length   | Set to length of EAP packet |         |           |
| Data   |                             |         |           |
| AT_AUTS  | AT_AUTS_Def                 |         |           |

**Table 4.7.3.2-6: EAP-Failure**

| Derivation Path: IETF RFC 4187 [30] clause 6.3.3, RFC 3748 [32] clause 4 |                             |                                 |           |
|--|-----------------------------|---------------------------------|-----------|
| Information Element  | Value/remark                | Comment                         | Condition |
| Code   | 4                           | Failure                         |           |
| Length   | Set to length of EAP packet |                                 |           |
| Data   | Not present                 | Specific attributes not present |           |

**Table 4.7.3.2-7: EAP-Request/AKA-Identity**

| Derivation Path: IETF RFC 4187 [30] clause 9.1, RFC 3748 [32] clause 4 |                             |         |   |
|--|-----------------------------|---------|---|
| Information Element  | Value/remark                | Comment | Condition   |
| Code   | 1                           | Request |   |
| Length   | Set to length of EAP packet |         |   |
| Data   |                             |         |   |
| AT_PERMANENT_ID_REQ  | AT_PERMANENT_ID_REQ_Def     |         | SS requests that the UE send its permanent identity.                |
| AT_ANY_ID_REQ  | AT_ANY_ID_REQ_Def           |         | SS does not specify which kind of an identity the UE should return. |
| AT_FULLAUTH_ID_REQ   | AT_FULLAUTH_ID_REQ_Def      |         | SS requests either the permanent identity or a pseudonym identity.  |

**Table 4.7.3.2-8: EAP-Response/AKA-Identity**

| Derivation Path: IETF RFC 4187 [30] clause 9.2, RFC 3748 [32] clause 4 |                             |          |           |
|--|-----------------------------|----------|-----------|
| Information Element  | Value/remark                | Comment  | Condition |
| Code   | 2                           | Response |           |
| Length   | Set to length of EAP packet |          |           |
| Data   |                             |          |           |
| AT_IDENTITY  | AT_IDENTITY_Def             |          |           |

**Table 4.7.3.2-9: EAP-Request/AKA-Notification**

| Derivation Path: IETF RFC 4187 [30] clause 9.10, RFC 3748 [32] clause 4 |                             |         |           |
|---|-----------------------------|---------|-----------|
| Information Element   | Value/remark                | Comment | Condition |
| Code  | 1                           | Request |           |
| Length  | Set to length of EAP packet |         |           |
| Data  |                             |         |           |
| AT_NOTIFICATION   | AT_NOTIFICATION_Def         |         |           |

**Table 4.7.3.2-10: EAP-Response/AKA-Notification**

| Derivation Path: IETF RFC 4187 [30] clause 9.11, RFC 3748 [32] clause 4 |                             |                                 |           |
|---|-----------------------------|---------------------------------|-----------|
| Information Element   | Value/remark                | Comment                         | Condition |
| Code  | 2                           | Response                        |           |
| Length  | Set to length of EAP packet |                                 |           |
| Data  | Not present                 | Specific attributes not present |           |

#### 4.7.4 Contents of V2X messages

- **MANAGE UE POLICY COMMAND**

**Table 4.7.4-1: MANAGE UE POLICY COMMAND**

| Derivation Path: TS 24.501 Table D.5.1.1.1 |                         |                                  |           |
|--|-------------------------|----------------------------------|-----------|
| Information Element                        | Value/remark            | Comment                          | Condition |
| PTI  | Any value from 1 to 254 |                                  |           |
| MANAGE UE POLICY COMMAND message identity  | '0000 0001'B            | MANAGE UE POLICY COMMAND message |           |
| UE policy section management list          | FFS                     |                                  |           |

- **MANAGE UE POLICY COMPLETE**

**Table 4.7.4-2: MANAGE UE POLICY COMPLETE**

| Derivation Path: TS 24.501 Table D.5.2.1.1 |  |                                   |           |
|--|--|-----------------------------------|-----------|
| Information Element                        | Value/remark   | Comment                           | Condition |
| PTI  | The same value as the value set in MANAGE UE POLICY COMMAND message. |                                   |           |
| MANAGE UE POLICY COMPLETE message identity | '0000 0010'B   | MANAGE UE POLICY COMPLETE message |           |

- **MANAGE UE POLICY COMMAND REJECT**

**Table 4.7.4-3: MANAGE UE POLICY COMMAND REJECT**

| Derivation Path: TS 24.501 Table D.5.3.1.1       |  |   |           |
|--|--|---|-----------|
| Information Element                              | Value/remark   | Comment                                 | Condition |
| PTI  | The same value as the value set in MANAGE UE POLICY COMMAND message. |   |           |
| MANAGE UE POLICY COMMAND REJECT message identity | '0000 0011'B   | MANAGE UE POLICY COMMAND REJECT message |           |
| UE policy section management result              | FFS  |   |           |

– *UE STATE INDICATION*

**Table 4.7.4-4: UE STATE INDICATION**

| Derivation Path: TS 24.501 Table D.5.4.1.1 |                         |         |           |
|--|-------------------------|---------|-----------|
| Information Element                        | Value/remark            | Comment | Condition |
| PTI  | Any value from 1 to 254 |         |           |
| UE STATE INDICATION message identity       | '0000 0100'B            |         |           |
| UPSI list                                  | FFS                     |         |           |
| UE policy classmark                        | FFS                     |         |           |
| UE OS Id                                   | FFS                     |         |           |

– *UE POLICY PROVISIONING REQUEST*

**Table 4.7.4-5: UE POLICY PROVISIONING REQUEST**

| Derivation Path: TS 24.587 Table 7.2.1.1.1      |                         |         |           |
|---|-------------------------|---------|-----------|
| Information Element                             | Value/remark            | Comment | Condition |
| PTI   | Any value from 1 to 254 |         |           |
| UE POLICY PROVISIONING REQUEST message identity | '0000 0101'B            |         |           |
| Requested UE policies                           | FFS                     |         |           |

– *UE POLICY PROVISIONING REJECT*

**Table 4.7.4-6: UE POLICY PROVISIONING REJECT**

| Derivation Path: TS 24.587 Table 7.2.2.1.1     |  |         |           |
|--|--|---------|-----------|
| Information Element                            | Value/remark   | Comment | Condition |
| PTI  | The same value as the value set in UE POLICY PROVISIONING REQUEST message. |         |           |
| UE POLICY PROVISIONING REJECT message identity | '0000 0110'B   |         |           |
| UPDS cause                                     | FFS  |         |           |

– *DIRECT LINK ESTABLISHMENT REQUEST*

**Table 4.7.4-7: DIRECT LINK ESTABLISHMENT REQUEST**

| Derivation Path: TS 24.587 Table 7.3.1.1.1         |              |         |           |
|--|--------------|---------|-----------|
| Information Element                                | Value/remark | Comment | Condition |
| DIRECT LINK ESTABLISHMENT REQUEST message identity | FFS          |         |           |
| Sequence number                                    | FFS          |         |           |
| V2X service identifiers                            | FFS          |         |           |
| Source user info                                   | FFS          |         |           |
| UE security capabilities                           | FFS          |         |           |
| UE PC5 unicast signalling security policy          | FFS          |         |           |
| Key establishment information container            | FFS          |         |           |
| Nonce_1  | FFS          |         |           |
| MSBs of K <sub>NRP-sess</sub> ID                   | FFS          |         |           |
| Target user info                                   | FFS          |         |           |
| K <sub>NRP</sub> ID                                | FFS          |         |           |

– **DIRECT LINK ESTABLISHMENT ACCEPT**

**Table 4.7.4-8: DIRECT LINK ESTABLISHMENT ACCEPT**

| Derivation Path: TS 24.587 Table 7.3.2.1.1                     |              |         |           |
|--|--------------|---------|-----------|
| Information Element  | Value/remark | Comment | Condition |
| DIRECT LINK ESTABLISHMENT ACCEPT message identity              | FFS          |         |           |
| Sequence number  | FFS          |         |           |
| Source user info   | FFS          |         |           |
| QoS flow descriptions  | FFS          |         |           |
| Configuration of UE PC5 unicast user plane security protection | FFS          |         |           |
| IP address configuration                                       | FFS          |         |           |
| Link local IPv6 address  | FFS          |         |           |

– **DIRECT LINK MODIFICATION REQUEST**

**Table 4.7.4-9: DIRECT LINK MODIFICATION REQUEST**

| Derivation Path: TS 24.587 Table 7.3.4.1.1 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                        | Value/remark | Comment | Condition |
| FFS  |              |         |           |

– **DIRECT LINK MODIFICATION ACCEPT**

**Table 4.7.4-10: DIRECT LINK MODIFICATION ACCEPT**

| Derivation Path: TS 24.587 Table 7.3.5.1.1 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                        | Value/remark | Comment | Condition |
| FFS  |              |         |           |

– **DIRECT LINK RELEASE REQUEST**

**Table 4.7.4-11: DIRECT LINK RELEASE REQUEST**

| Derivation Path: TS 24.587 Table 7.3.6.1.1 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                        | Value/remark | Comment | Condition |
| FFS  |              |         |           |

– **DIRECT LINK RELEASE ACCEPT**

**Table 4.7.4-12: DIRECT LINK RELEASE ACCEPT**

| Derivation Path: TS 24.587 Table 7.3.7.1.1 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                        | Value/remark | Comment | Condition |
| FFS  |              |         |           |

– **DIRECT LINK KEEPALIVE REQUEST**

**Table 4.7.4-13: DIRECT LINK KEEPALIVE REQUEST**

| Derivation Path: TS 24.587 Table 7.3.8.1.1 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                        | Value/remark | Comment | Condition |
| FFS  |              |         |           |

– *DIRECT LINK KEEPALIVE RESPONSE*

**Table 4.7.4-14: DIRECT LINK KEEPALIVE RESPONSE**

| Derivation Path: TS 24.587 Table 7.3.9.1.1 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                        | Value/remark | Comment | Condition |
| FFS  |              |         |           |

– *DIRECT LINK AUTHENTICATION REQUEST*

**Table 4.7.4-15: DIRECT LINK AUTHENTICATION REQUEST**

| Derivation Path: TS 24.587 Table 7.3.10.1.1 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| FFS   |              |         |           |

– *DIRECT LINK AUTHENTICATION RESPONSE*

**Table 4.7.4-16: DIRECT LINK AUTHENTICATION RESPONSE**

| Derivation Path: TS 24.587 Table 7.3.11.1.1 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| FFS   |              |         |           |

– *DIRECT LINK AUTHENTICATION REJECT*

**Table 4.7.4-17: DIRECT LINK AUTHENTICATION REJECT**

| Derivation Path: TS 24.587 Table 7.3.12.1.1 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| FFS   |              |         |           |

– *DIRECT LINK SECURITY MODE COMMAND*

**Table 4.7.4-18: DIRECT LINK SECURITY MODE COMMAND**

| Derivation Path: TS 24.587 Table 7.3.13.1.1 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| FFS   |              |         |           |

– *DIRECT LINK SECURITY MODE COMPLETE*

**Table 4.7.4-19: DIRECT LINK SECURITY MODE COMPLETE**

| Derivation Path: TS 24.587 Table 7.3.14.1.1 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| FFS   |              |         |           |

– *DIRECT LINK SECURITY MODE REJECT*

**Table 4.7.4-20: DIRECT LINK SECURITY MODE REJECT**

| Derivation Path: TS 24.587 Table 7.3.15.1.1 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| FFS   |              |         |           |

– *DIRECT LINK REKEYING REQUEST*

**Table 4.7.4-21: DIRECT LINK REKEYING REQUEST**

| Derivation Path: TS 24.587 Table 7.3.16.1.1 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| FFS   |              |         |           |

– *DIRECT LINK REKEYING RESPONSE*

**Table 4.7.4-22: DIRECT LINK REKEYING RESPONSE**

| Derivation Path: TS 24.587 Table 7.3.17.1.1 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| FFS   |              |         |           |

– *DIRECT LINK IDENTIFIER UPDATE REQUEST*

**Table 4.7.4-23: DIRECT LINK IDENTIFIER UPDATE REQUEST**

| Derivation Path: TS 24.587 Table 7.3.18.1.1 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| FFS   |              |         |           |

– *DIRECT LINK IDENTIFIER UPDATE ACCEPT*

**Table 4.7.4-24: DIRECT LINK IDENTIFIER UPDATE ACCEPT**

| Derivation Path: TS 24.587 Table 7.3.19.1.1 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| FFS   |              |         |           |

– *DIRECT LINK IDENTIFIER UPDATE ACK*

**Table 4.7.4-25: DIRECT LINK IDENTIFIER UPDATE ACK**

| Derivation Path: TS 24.587 Table 7.3.20.1.1 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| FFS   |              |         |           |

– **DIRECT LINK IDENTIFIER UPDATE REJECT**

**Table 4.7.4-26: DIRECT LINK IDENTIFIER UPDATE REJECT**

| Derivation Path: TS 24.587 Table 7.3.21.1.1 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| FFS   |              |         |           |

– **DIRECT LINK MODIFICATION REJECT**

**Table 4.7.4-27: DIRECT LINK MODIFICATION REJECT**

| Derivation Path: TS 24.587 Table 7.3.22.1.1 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| FFS   |              |         |           |

– **DIRECT LINK ESTABLISHMENT REJECT**

**Table 4.7.4-28: DIRECT LINK ESTABLISHMENT REJECT**

| Derivation Path: TS 24.587 Table 7.3.23.1.1 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| FFS   |              |         |           |

## 4.7A Default TC message and information element contents

This clause contains the default values of common TC (Test Control, see [11]) messages and information elements, which apply to all test cases unless otherwise specified. All the messages and information elements are listed in alphabetical order.

### 4.7A.1 Test mode messages

- **ACTIVATE TEST MODE** with the following exception:
  - The supported test modes for 5GS are limited to those specified in subclause 38.509 [11] 5.3.4.

Same as TS 36.508 [2], Table 4.7A-1.

- **ACTIVATE TEST MODE COMPLETE**

Same as TS 36.508 [2], Table 4.7A-2.

- **DEACTIVATE TEST MODE**

Same as TS 36.508 [2], Table 4.7A-5.

- **DEACTIVATE TEST MODE COMPLETE**

Same as TS 36.508 [2], Table 4.7A-6.

### 4.7A.2 Test loop messages

- **CLOSE UE TEST LOOP**

Same as TS 36.508 [2], Table 4.7A-3 with the following exception:

- The supported test modes for 5GS are limited to those specified in subclause 38.509 [11] 5.3.4.

***CLOSE UE TEST LOOP COMPLETE***

Same as TS 36.508 [2], Table 4.7A-4.

***OPEN UE TEST LOOP***

Same as TS 36.508 [2], Table 4.7A-7.

***OPEN UE TEST LOOP COMPLETE***

Same as TS 36.508 [2], Table 4.7A-8.

### 4.7A.3 Beamlock messages

***ACTIVATE BEAMLOCK***

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

**Table 4.7A.3-1: ACTIVATE BEAMLOCK**

| Derivation Path: 38.509 clause 6.4.1 |               |         |           |           |
|--------------------------------------|---------------|---------|-----------|-----------|
| Information Element                  | Value/remark  | Comment | Condition |           |
| Protocol discriminator               | 1 1 1 1       |         |           |           |
| Skip indicator                       | 0 0 0 0       |         |           |           |
| Message type                         | 1 0 1 0 0 0 0 |         |           |           |
| UE Beamlock test Function            | 0 0 0 0 0 0 1 |         |           | Tx Only   |
| UE Beamlock test Function            | 0 0 0 0 0 1 0 |         |           | Rx Only   |
| UE Beamlock test Function            | 0 0 0 0 0 1 1 |         |           | Tx and Rx |

| Condition | Explanation  |
|-----------|--|
| Tx Only   | Activation UE beamlock function for Tx only        |
| Rx Only   | Activation UE beamlock function for Rx only        |
| Tx and Rx | Activation UE beamlock function for both Tx and Rx |

***ACTIVATE BEAMLOCK COMPLETE***

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

**Table 4.7A.3-2: ACTIVATE BEAMLOCK COMPLETE**

| Derivation Path: 38.509 clause 6.4.2 |               |         |           |  |
|--------------------------------------|---------------|---------|-----------|--|
| Information Element                  | Value/remark  | Comment | Condition |  |
| Protocol discriminator               | 1 1 1 1       |         |           |  |
| Skip indicator                       | 0 0 0 0       |         |           |  |
| Message type                         | 1 0 1 0 0 0 1 |         |           |  |

- ***DEACTIVATE BEAMLOCK***

This message is only sent in the direction SS to UE, embedded in a RRC *DLInformationTransfer* message.

**Table 4.7A.3-3: DEACTIVATE BEAMLOCK**

| Derivation Path: 38.509 clause 6.4.3 |                 |         |           |
|--------------------------------------|-----------------|---------|-----------|
| Information Element                  | Value/remark    | Comment | Condition |
| Protocol discriminator               | 1 1 1 1         |         |           |
| Skip indicator                       | 0 0 0 0         |         |           |
| Message type                         | 1 0 1 0 0 0 1 0 |         |           |

- ***DEACTIVATE BEAMLOCK COMPLETE***

This message is only sent in the direction UE to SS, embedded in a RRC *ULInformationTransfer* message.

**Table 4.7A.3-4: DEACTIVATE BEAMLOCK COMPLETE**

| Derivation Path: 38.509 clause 6.4.4 |                 |         |           |
|--------------------------------------|-----------------|---------|-----------|
| Information Element                  | Value/remark    | Comment | Condition |
| Protocol discriminator               | 1 1 1 1         |         |           |
| Skip indicator                       | 0 0 0 0         |         |           |
| Message type                         | 1 0 1 0 0 0 1 1 |         |           |

#### 4.7A.4 UE SS-RSRP per receiver branch reporting messages

- ***SS-RSRPB REPORT REQUEST***

FFS

- ***SS-RSRPB REPORT RESPONSE***

FFS

#### 4.7A.5 UE Positioning messages

- ***RESET UE POSITIONING STORED INFORMATION***

FFS

- ***UPDATE UE LOCATION INFORMATION***

FFS

## 4.7A.6 NSSAI delete messages

- **NSSAI DELETE REQUEST**

This message is only sent in the direction SS to UE, embedded in a RRC *DlInformationTransfer* message.

**Table 4.7A.6-1: NSSAI DELETE REQUEST**

| Derivation Path: 38.509 clause 6.7.1 |  |         |           |
|--------------------------------------|--|---------|-----------|
| Information Element                  | Value/remark                               | Comment | Condition |
| Protocol discriminator               | 1 1 1 1                                    |         |           |
| Skip indicator                       | 0 0 0 0                                    |         |           |
| Message type                         | 1 0 0 0 0 1 1 0                            |         |           |
| Delete NSSAI type                    | Set according to specific message contents |         |           |
| Configured NSSAI                     | Set according to specific message contents |         |           |
| Allowed NSSAI                        | Set according to specific message contents |         |           |

- **NSSAI DELETE RESPONSE**

This message is only sent in the direction UE to SS, embedded in a RRC *UlInformationTransfer* message.

**Table 4.7A.6-2: NSSAI DELETE RESPONSE**

| Derivation Path: 38.509 clause 6.7.2 |                 |         |           |
|--------------------------------------|-----------------|---------|-----------|
| Information Element                  | Value/remark    | Comment | Condition |
| Protocol discriminator               | 1 1 1 1         |         |           |
| Skip indicator                       | 0 0 0 0         |         |           |
| Message type                         | 1 0 1 0 0 1 1 1 |         |           |

## 4.8 Reference configurations

### 4.8.1 Radio configurations

- **RRCReconfiguration-DRB(n, m)**

**Table 4.8.1-1: RRCReconfiguration-DRB (n, m)**

| Derivation Path: Table 4.6.1-13.  |                            |         |           |
|-----------------------------------|----------------------------|---------|-----------|
| Information Element               | Value/remark               | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE { |                            |         |           |
| criticalExtensions CHOICE {       |                            |         |           |
| c1 CHOICE {                       |                            |         |           |
| rrcReconfiguration SEQUENCE {     |                            |         |           |
| radioBearerConfig                 | RadioBearerConfig-DRB(n,m) |         |           |
| secondaryCellGroup                | CellGroupConfig-DRB(n.m)   |         |           |
| }                                 |                            |         |           |
| }                                 |                            |         |           |
| }                                 |                            |         |           |

– *RRCReconfiguration-HO*

**Table 4.8.1-1A: RRCReconfiguration-HO**

| Derivation Path: Table 4.6.1-13.  |  |   |                   |
|-----------------------------------|--|---|-------------------|
| Information Element               | Value/remark   | Comment                                   | Condition         |
| RRCReconfiguration ::= SEQUENCE { |  |   |                   |
| criticalExtensions CHOICE {       |  |   |                   |
| rrcReconfiguration SEQUENCE {     |  |   |                   |
| radioBearerConfig                 | RadioBearerConfig with conditions SRB_NR_PDCP and DRBn and Re-establish_PDCP |   | RBCfg_KeyChange   |
|                                   | RadioBearerConfig with conditions DRBn and Recover_PDCP                      |   | RBCfg_NoKeyChange |
| secondaryCellGroup                | Not present  |   |                   |
| nonCriticalExtension SEQUENCE {   |  |   |                   |
| masterCellGroup                   | CellGroupConfig with conditions PCell_change                                 | OCTET STRING (CONTAINING CellGroupConfig) |                   |
| masterKeyUpdate                   | Not present  |   |                   |
| masterKeyUpdate SEQUENCE {        |  |   | RBCfg_KeyChange   |
| keySetChangeIndicator             | false  | Horizontal key derivation                 |                   |
| nextHopChainingCount              | NextHopChainingCount   |   |                   |
| nas-Container                     | Not present  |   |                   |
| }                                 |  |   |                   |
| }                                 |  |   |                   |
| }                                 |  |   |                   |
| }                                 |  |   |                   |
|                                   |  |   |                   |

| Condition         | Explanation  |
|-------------------|--|
| RBCfg_KeyChange   | RadioBearerConfig to perform Intra-NR handover with security key change    |
| RBCfg_NoKeyChange | RadioBearerConfig to perform Intra-NR handover without security key change |

– *RRCReconfiguration-SRB2-DRB(n, m)*

**Table 4.8.1-1B: RRCReconfiguration-SRB2-DRB(n, m)**

| Derivation Path: Table 4.6.1-13 with condition NR. |                                 |   |           |
|--|---------------------------------|---|-----------|
| Information Element                                | Value/remark                    | Comment                                   | Condition |
| RRCReconfiguration ::= SEQUENCE {                  |                                 |   |           |
| criticalExtensions CHOICE {                        |                                 |   |           |
| c1 CHOICE {  |                                 |   |           |
| rrcReconfiguration SEQUENCE {                      |                                 |   |           |
| radioBearerConfig                                  | RadioBearerConfig-SRB2-DRB(n,m) |   |           |
| }  |                                 |   |           |
| nonCriticalExtension SEQUENCE {                    |                                 |   |           |
| masterCellGroup                                    | CellGroupConfig-SRB2-DRB(n, m)  | OCTET STRING (CONTAINING CellGroupConfig) |           |
| }  |                                 |   |           |
| }  |                                 |   |           |
| }  |                                 |   |           |
| }  |                                 |   |           |
|  |                                 |   |           |

— *RRCReconfiguration-NR-DC-DRB*

**Table 4.8.1-1CA: RRCReconfiguration-NR-DC-DRB**

| Derivation Path: Table 4.6.1-13 with condition NR-DC. |  |   |                  |
|---|--|---|------------------|
| Information Element                                   | Value/remark   | Comment   | Condition        |
| RRCReconfiguration ::= SEQUENCE {                     |  |   |                  |
| criticalExtensions CHOICE {                           |  |   |                  |
| c1 CHOICE {   |  |   |                  |
| rrcReconfiguration SEQUENCE {                         |  |   |                  |
| radioBearerConfig                                     | Not present  |   |                  |
| }   |  |   |                  |
| nonCriticalExtension SEQUENCE {                       |  |   |                  |
| masterCellGroup                                       | Not present  |   |                  |
| nonCriticalExtension SEQUENCE {                       |  |   |                  |
| nonCriticalExtension SEQUENCE {                       |  |   |                  |
| radioBearerConfig2                                    | RadioBearerConfig with condition DRB(n+m+1) and SecondaryKeys            | OCTET STRING (CONTAINING RadioBearerConfig)<br>DRB(n,m) already configured on MCG | MCG(s) and SCG   |
|   | RadioBearerConfig with condition DRB(n+m +1) and Split and SecondaryKeys | OCTET STRING (CONTAINING RadioBearerConfig)<br>DRB(n,m) already configured on MCG | MCG(s) and split |
| }   |  |   |                  |
| }   |  |   |                  |
| }   |  |   |                  |
| }   |  |   |                  |
| }   |  |   |                  |
| }   |  |   |                  |

— *RRCReconfiguration-Speech*

**Table 4.8.1-1C: RRCReconfiguration-Speech**

| Derivation Path: Table 4.6.1-13 with condition NR. |                            |   |           |
|--|----------------------------|---|-----------|
| Information Element                                | Value/remark               | Comment                                   | Condition |
| RRCReconfiguration ::= SEQUENCE {                  |                            |   |           |
| criticalExtensions CHOICE {                        |                            |   |           |
| c1 CHOICE {  |                            |   |           |
| rrcReconfiguration SEQUENCE {                      |                            |   |           |
| radioBearerConfig                                  | RadioBearerConfig-DRB(0,1) |   |           |
| }  |                            |   |           |
| nonCriticalExtension SEQUENCE {                    |                            |   |           |
| masterCellGroup                                    | CellGroupConfig-DRB(0,1)   | OCTET STRING (CONTAINING CellGroupConfig) |           |
| }  |                            |   |           |
| }  |                            |   |           |
| }  |                            |   |           |
| }  |                            |   |           |

– *CellGroupConfig-DRB(n, m)*

**Table 4.8.1-2: CellGroupConfig-DRB(n, m)**

| Derivation Path: Table 4.6.3-19: CellGroupConfig<br>(the same conditions are applicable as for table 4.6.3-19).             |   |  |           |
|---|---|--|-----------|
| Information Element   | Value/remark  | Comment  | Condition |
| CellGroupConfig ::= SEQUENCE {<br>rlc-BearerToAddModList SEQUENCE<br>(SIZE(1..maxLCH)) OF RLC-BearerConfig {<br>}<br>}<br>} | n+m entries   | BID is the total number of established DRBs in the UE, before applying the contents of this IE |           |
| RLC-BearerConfig[k, k=1..n]   | RLC-BearerConfig with conditions AM and DRBj (with j=BID+k) | entry (1..n+1)   | n>0       |
| RLC-BearerConfig[k, k=n+1..n+m]   | RLC-BearerConfig with conditions UM and DRBj (with j=BID+k) | entry (n+1..n+m)   | m>0       |
| }   |   |  |           |
| }   |   |  |           |

| Condition | Explanation            |
|-----------|------------------------|
| n>0       | n is greater than zero |
| m>0       | m is greater than zero |

– *CellGroupConfig-SRB3*

**Table 4.8.1-2A: CellGroupConfig-SRB3**

| Derivation Path: Table 4.6.3-19: CellGroupConfig with condition EN-DC.  |  |         |           |
|---|--|---------|-----------|
| Information Element   | Value/remark                                 | Comment | Condition |
| CellGroupConfig ::= SEQUENCE {<br>rlc-BearerToAddModList SEQUENCE<br>(SIZE(1..maxLCH)) OF RLC-BearerConfig {<br>}<br>}<br>} | 2 entries                                    |         |           |
| RLC-BearerConfig[1]   | RLC-BearerConfig with conditions AM and DRB2 | entry 1 |           |
| RLC-BearerConfig[2]   | RLC-BearerConfig with condition SRB3         | entry 2 |           |
| }   |  |         |           |
| }   |  |         |           |

– *CellGroupConfig-SRB2-DRB(n, m)*

**Table 4.8.1-2B: CellGroupConfig-SRB2-DRB(n, m)**

| Derivation Path: Table 4.6.3-19: CellGroupConfig                        |  |   |           |
|---|--|---|-----------|
| Information Element   | Value/remark                                 | Comment   | Condition |
| CellGroupConfig ::= SEQUENCE {  |  |   |           |
| rlc-BearerToAddModList SEQUENCE (SIZE(1..maxLCH)) OF RLC-BearerConfig { | 1+n+m entries                                |   |           |
| RLC-BearerConfig[1]   | RLC-BearerConfig with condition SRB2         | entry 1   |           |
| RLC-BearerConfig[k, k=2..n+1]   | RLC-BearerConfig with conditions AM and DRBj | entry (2..n+1)<br>j is allocated according to internal TTCN mapping     | n>0       |
| ...   |  | ...   |           |
| RLC-BearerConfig[k, k=n+2..n+m+1]                                       | RLC-BearerConfig with conditions UM and DRBj | entry (n+2..n+m+1)<br>j is allocated according to internal TTCN mapping | m>0       |
| }   |  |   |           |
| mac-CellGroupConfig   | Not present                                  |   |           |
| physicalCellGroupConfig   | Not present                                  |   |           |
| spCellConfig  | Not present                                  |   |           |
| }   |  |   |           |

– *RadioBearerConfig-DRB (n, m)*

**Table 4.8.1-3: RadioBearerConfig-DRB (n, m)**

| Derivation Path: Table 4.6.3-132 and condition EN-DC.          |                               |  |           |
|--|-------------------------------|--|-----------|
| Information Element  | Value/remark                  | Comment  | Condition |
| RadioBearerConfig ::= SEQUENCE {                               |                               |  |           |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB)) OF DRB-ToAddMod { | n+m entries                   | BID is the total number of established DRBs in the UE, before applying the contents of this IE |           |
| DRB-ToAddMod[k=1..n+m] SEQUENCE {                              |                               | entry (1..n+m)   |           |
| cnAssociation CHOICE {   |                               |  |           |
| eps-BearerIdentity   | I, I=BID+5..BID+4+n+m         |  |           |
| }  |                               |  |           |
| drb-Identity   | I, I=BID+1..BID+n+m           |  |           |
| reestablishPDCP  | Not present                   |  |           |
| recoverPDCP  | Not present                   |  |           |
| pdcP-Config  | PDCP-Config                   |  | k <= n    |
|  | PDCP-Config with condition UM |  | k > n     |
| }  |                               |  |           |
| }  |                               |  |           |
| }  |                               |  |           |
| }  |                               |  |           |

– *RadioBearerConfig-SRB2-DRB (n, m)*

**Table 4.8.1-4: RadioBearerConfig-SRB2-DRB (n, m)**

| Derivation Path: Table 4.6.3-132 and condition SRB2. |                                     |  |   |
|--|-------------------------------------|--|---|
| Information Element                                  | Value/remark                        | Comment  | Condition                                   |
| RadioBearerConfig ::= SEQUENCE {                     |                                     |  |   |
| drb-ToAddModList SEQUENCE (SIZE (1..maxDRB))         | n+m entries                         |  |   |
| OF DRB-ToAddMod {                                    |                                     |  |   |
| DRB-ToAddMod[k=1..n+m] := SEQUENCE {                 |                                     | entry (1..n+m)   |   |
| cnAssociation CHOICE {                               |                                     |  |   |
| sdap-Config  | SDAP-Config                         | SDAP-Config is configured according to internal TTCN mapping |   |
| }  |                                     |  |   |
| drb-Identity   | j                                   | j is allocated according to internal TTCN mapping            |   |
| reestablishPDCP                                      | Not present                         |  |   |
| recoverPDCP  | Not present                         |  |   |
| pdcp-Config  | PDCP-Config                         |  | (1< k <= n)<br>OR (k=1<br>AND NOT NR_split) |
|  | PDCP-Config with condition UM       |  | k > n                                       |
|  | PDCP-Config with condition NR_split |  | k=1 AND NR_split                            |
| }  |                                     |  |   |
| }  |                                     |  |   |
| }  |                                     |  |   |
| }  |                                     |  |   |

## 4.8.2 5GC configurations

### 4.8.2.1 Reference QoS rules

**Table 4.8.2.1-1: Reference QoS rule #1**

| Derivation Path: TS 24.501, table 9.11.4.13 |                     |   |           |
|---|---------------------|---|-----------|
| Information Element                         | Value/remark        | Comment   | Condition |
| QoS rules                                   |                     |   |           |
| QoS rule                                    |                     |   |           |
| QoS rule identifier                         | '0000 0001'B        | 1 (unique per PDU session)  |           |
| Rule operation code                         | '001'B              | Create new QoS rule   |           |
| DQR bit                                     | '1'B                | The QoS rule is the default QoS rule.   |           |
| Number of packet filters                    | '0001'B             | 1 packet filters  |           |
| Packet filter list                          | See table 4.8.2.2-1 | Packet filter list #1   |           |
| QoS rule precedence                         | '1111 1111'B        | 255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.) |           |
| Spare bit                                   | '0'B                |   |           |
| Segregation                                 | '0'B                | Spare   |           |
| QoS flow identifier (QFI)                   | '00 0001'B          | QFI 1 (Table 4.8.2.3-1)   |           |

**Table 4.8.2.1-2: Reference QoS rule #2**

| Derivation Path: TS 24.501, table 9.11.4.13 |                     |   |           |
|---|---------------------|---|-----------|
| Information Element                         | Value/remark        | Comment   | Condition |
| QoS rules                                   |                     |   |           |
| QoS rule                                    |                     |   |           |
| QoS rule identifier                         | '0000 0010'B        | 2 (unique per PDU session)  |           |
| Rule operation code                         | '001'B              | Create new QoS rule   |           |
| DQR bit                                     | '1'B                | The QoS rule is the default QoS rule.   |           |
| Number of packet filters                    | '0001'B             | 1 packet filter   |           |
| Packet filter list                          | See table 4.8.2.2-1 | Packet filter list #1   |           |
| QoS rule precedence                         | '1111 1111'B        | 255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.) |           |
| Spare bit                                   | '0'B                |   |           |
| Segregation                                 | '0'B                | Spare   |           |
| QoS flow identifier (QFI)                   | '00 0010'B          | QFI 2 (Table 4.8.2.3-2)   |           |

**Table 4.8.2.1-3: Reference QoS rule #3**

| Derivation Path: TS 24.501, table 9.11.4.13 |                     |   |           |
|---|---------------------|---|-----------|
| Information Element                         | Value/remark        | Comment                                   | Condition |
| QoS rules                                   |                     |   |           |
| QoS rule                                    |                     |   |           |
| QoS rule identifier                         | '0000 0011'B        | 3 (unique per PDU session)                |           |
| Rule operation code                         | '001'B              | Create new QoS rule                       |           |
| DQR bit                                     | '0'B                | The QoS rule is the non-default QoS rule. |           |
| Number of packet filters                    | '0001'B             | 1 packet filter                           |           |
| Packet filter list                          | See table 4.8.2.2-2 | Packet filter list #2                     |           |
| QoS rule precedence                         | '0000 0011'B        | 3 (unique per PDU session)                |           |
| Spare bit                                   | '0'B                |   |           |
| Segregation                                 | '0'B                | Spare                                     |           |
| QoS flow identifier (QFI)                   | '00 0001'B          | QFI 1 (Table 4.8.2.3-1)                   |           |

**Table 4.8.2.1-4: Reference QoS rule #4**

| Derivation Path: TS 24.501, table 9.11.4.13 |                     |                                       |           |
|---|---------------------|---------------------------------------|-----------|
| Information Element                         | Value/remark        | Comment                               | Condition |
| QoS rules                                   |                     |                                       |           |
| QoS rule                                    |                     |                                       |           |
| QoS rule identifier                         | '0000 0100'B        | 4 (unique per PDU session)            |           |
| Rule operation code                         | '001'B              | Create new QoS rule                   |           |
| DQR bit                                     | '1'B                | The QoS rule is the default QoS rule. |           |
| Number of packet filters                    | '0001'B             | 1 packet filter                       |           |
| Packet filter list                          | See table 4.8.2.2-3 | Packet filter list #3                 |           |
| QoS rule precedence                         | '0000 00100'B       | 4 (unique per PDU session)            |           |
| Spare bit                                   | '0'B                |                                       |           |
| Segregation                                 | '0'B                | Spare                                 |           |
| QoS flow identifier (QFI)                   | '00 0010'B          | QFI 2 (Table 4.8.2.3-2)               |           |

**Table 4.8.2.1-4a: Reference QoS rule #4a**

| Derivation Path: TS 24.501, table 9.11.4.13 |                      |   |           |
|---|----------------------|---|-----------|
| Information Element                         | Value/remark         | Comment                                   | Condition |
| QoS rules                                   |                      |   |           |
| QoS rule                                    |                      |   |           |
| QoS rule identifier                         | '0000 1111'B         | 15 (unique per PDU session)               |           |
| Rule operation code                         | '001'B               | Create new QoS rule                       |           |
| DQR bit                                     | '0'B                 | The QoS rule is the non-default QoS rule. |           |
| Number of packet filters                    | '0001'B              | 1 packet filter                           |           |
| Packet filter list                          | See table 4.8.2.2-3a | Packet filter list #3a                    |           |
| QoS rule precedence                         | '0000 1111'B         | 15 (unique per PDU session)               |           |
| Spare bit                                   | '0'B                 |   |           |
| Segregation                                 | '0'B                 | Spare                                     |           |
| QoS flow identifier (QFI)                   | '00 0100'B           | QFI 4 (Table 4.8.2.3-2a)                  |           |

**Table 4.8.2.1-5: Reference QoS rule #5**

| Derivation Path: TS 24.501, table 9.11.4.13 |                     |   |           |
|---|---------------------|---|-----------|
| Information Element                         | Value/remark        | Comment                                   | Condition |
| QoS rules                                   |                     |   |           |
| QoS rule                                    |                     |   |           |
| QoS rule identifier                         | '0000 0101'B        | 5 (unique per PDU session)                |           |
| Rule operation code                         | '001'B              | Create new QoS rule                       |           |
| DQR bit                                     | '0'B                | The QoS rule is the non-default QoS rule. |           |
| Number of packet filters                    | '0001'B             | 1 packet filter                           |           |
| Packet filter list                          | See table 4.8.2.2-4 | Packet filter list #4                     |           |
| QoS rule precedence                         | '0000 0101'B        | 5 (unique per PDU session)                |           |
| Spare bit                                   | '0'B                |   |           |
| Segregation                                 | '0'B                | Spare                                     |           |
| QoS flow identifier (QFI)                   | '00 0101'B          | QFI 5 (Table 4.8.2.3-3)                   |           |

**Table 4.8.2.1-6: Reference QoS rule #6**

| Derivation Path: TS 24.501, table 9.11.4.13 |                     |   |           |
|---|---------------------|---|-----------|
| Information Element                         | Value/remark        | Comment                                   | Condition |
| QoS rules                                   |                     |   |           |
| QoS rule                                    |                     |   |           |
| QoS rule identifier                         | '0000 0110'B        | 6 (unique per PDU session)                |           |
| Rule operation code                         | '001'B              | Create new QoS rule                       |           |
| DQR bit                                     | '0'B                | The QoS rule is the non-default QoS rule. |           |
| Number of packet filters                    | '0001'B             | 1 packet filter                           |           |
| Packet filter list                          | See table 4.8.2.2-5 | Packet filter list #5                     |           |
| QoS rule precedence                         | '0000 0110'B        | 6 (unique per PDU session)                |           |
| Spare bit                                   | '0'B                |   |           |
| Segregation                                 | '0'B                | Spare                                     |           |
| QoS flow identifier (QFI)                   | '00 0110'B          | QFI 6 (Table 4.8.2.3-4)                   |           |

**Table 4.8.2.1-7: Reference QoS rule #7**

| Derivation Path: TS 24.501, table 9.11.4.13 |                     |   |           |
|---|---------------------|---|-----------|
| Information Element                         | Value/remark        | Comment   | Condition |
| QoS rules                                   |                     |   |           |
| QoS rule                                    |                     |   |           |
| QoS rule identifier                         | '0000 0001'B        | 1 (unique per PDU session)  |           |
| Rule operation code                         | '001'B              | Create new QoS rule   |           |
| DQR bit                                     | '1'B                | The QoS rule is the default QoS rule.   |           |
| Number of packet filters                    | '0001'B             | 1 packet filter   |           |
| Packet filter list                          | See table 4.8.2.2-1 | Packet filter list #1   |           |
| QoS rule precedence                         | '1111 1111'B        | 255 (unique per PDU session; If the default QoS rule contains a match-all packet filter, then the highest precedence value shall be used for the default QoS rule.) |           |
| Spare bit                                   | '0'B                |   |           |
| Segregation                                 | '0'B                | Spare   |           |
| QoS flow identifier (QFI)                   | '00 0010'B          | QFI 2 (Table 4.8.2.3-2)   |           |
| QoS rule                                    |                     |   | IMS_VOICE |
| QoS rule identifier                         | '0000 0010'B        | 2 (unique per PDU session)  |           |
| Rule operation code                         | '001'B              | Create new QoS rule   |           |
| DQR bit                                     | '0'B                | The QoS rule a non-default QoS rule.  |           |
| Number of packet filters                    | '0001'B             | 1 packet filter   |           |
| Packet filter list                          | See table 4.8.2.2-6 | Packet filter list #6   |           |
| QoS rule precedence                         | '0000 0001'B        | 1 (unique per PDU session)  |           |
| Spare bit                                   | '0'B                |   |           |
| Segregation                                 | '0'B                | Spare   |           |
| QoS flow identifier (QFI)                   | '00 0101'B          | QFI 7 (Table 4.8.2.3-5)   |           |
| QoS rule                                    |                     |   | IMS_VIDEO |
| QoS rule identifier                         | '0000 0011'B        | 3 (unique per PDU session)  |           |
| Rule operation code                         | '001'B              | Create new QoS rule   |           |
| DQR bit                                     | '0'B                | The QoS rule a non-default QoS rule.  |           |
| Number of packet filters                    | '0001'B             | 1 packet filter   |           |
| Packet filter list                          | See table 4.8.2.2-7 | Packet filter list #7   |           |
| QoS rule precedence                         | '0000 001'B         | 2 (unique per PDU session)  |           |
| Spare bit                                   | '0'B                |   |           |
| Segregation                                 | '0'B                | Spare   |           |
| QoS flow identifier (QFI)                   | '00 0110'B          | QFI 8 (Table 4.8.2.3-6)   |           |

| Condition | Explanation  |
|-----------|--|
| IMS_VOICE | If this QoS rule is used to setup an IMS voice session |
| IMS_VIDEO | If this QoS rule is used to setup an IMS video session |

#### 4.8.2.2 Reference packet filters

**Table 4.8.2.2-1: Packet filter list #1**

| Derivation Path: TS 24.501, table 9.11.4.13 |              |                |           |
|---|--------------|----------------|-----------|
| Information Element                         | Value/remark | Comment        | Condition |
| Packet filter list                          |              |                |           |
| Packet filter direction                     | '11'B        | bidirectional  |           |
| Packet filter identifier                    | '0000'B      | Id_0           |           |
| Component type 1 ID                         | '0000 0001'B | Match-all type |           |

**Table 4.8.2.2-2: Packet filter list #2**

| Derivation Path: TS 24.501, table 9.11.4.13   |   |   |            |
|---|---|---|------------|
| Information Element   | Value/remark                                      | Comment                                     | Condition  |
| Packet filter list  |   |   |            |
| Packet filter direction   | '11'B   | bidirectional                               |            |
| Packet filter identifier  | '0010'B   | Id_2  |            |
| Component type 1 ID   | 0 0 0 1 0 0 0 0                                   | IPv4 remote address type                    | remotelPv4 |
|   | 0 0 1 0 0 0 0 1                                   | IPv6 remote address type/prefix lenght type | remotelPv6 |
| Component type 1 Value  | 10.10.10.2<br>255.255.255.255                     | See Note 1                                  | remotelPv4 |
|   | C0C0:C0C0:C0C0:C002<br>C0C0:C0C0:C0C0:C0C0/<br>64 | See Note 1                                  | remotelPv6 |
| Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE.<br>remotelPv4 applies if the UE has acquired an IPv4 address only, remotelPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address. |   |   |            |

**Table 4.8.2.2-3: Packet filter list #3**

| Derivation Path: TS 24.501, table 9.11.4.13   |   |   |            |
|---|---|---|------------|
| Information Element   | Value/remark                                      | Comment                                     | Condition  |
| Packet filter list  |   |   |            |
| Packet filter direction   | '11'B   | bidirectional                               |            |
| Packet filter identifier  | '0011'B   | Id_3  |            |
| Component type 1 ID   | 0 0 0 1 0 0 0 0                                   | IPv4 remote address type                    | remotelPv4 |
|   | 0 0 1 0 0 0 0 1                                   | IPv6 remote address type/prefix lenght type | remotelPv6 |
| Component type 1 Value  | 10.10.10.3<br>255.255.255.255                     | See Note 1                                  | remotelPv4 |
|   | C0C0:C0C0:C0C0:C003<br>C0C0:C0C0:C0C0:C0C0/<br>64 | See Note 1                                  | remotelPv6 |
| Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE.<br>remotelPv4 applies if the UE has acquired an IPv4 address only, remotelPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address. |   |   |            |

**Table 4.8.2.2-3a: Packet filter list #3a**

| Derivation Path: TS 24.501, table 9.11.4.13   |   |   |            |
|---|---|---|------------|
| Information Element   | Value/remark                                      | Comment                                     | Condition  |
| Packet filter list  |   |   |            |
| Packet filter direction   | '11'B   | bidirectional                               |            |
| Packet filter identifier  | '1111'B   | Id 15                                       |            |
| Component type 1 ID   | 0 0 0 1 0 0 0 0                                   | IPv4 remote address type                    | remotelPv4 |
|   | 0 0 1 0 0 0 0 1                                   | IPv6 remote address type/prefix lenght type | remotelPv6 |
| Component type 1 Value  | 10.10.10.30<br>255.255.255.255                    | See Note 1                                  | remotelPv4 |
|   | C0C0:C0C0:C0C0:C030<br>C0C0:C0C0:C0C0:C0C0/<br>64 | See Note 1                                  | remotelPv6 |
| Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE.<br>remotelPv4 applies if the UE has acquired an IPv4 address only, remotelPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address. |   |   |            |

**Table 4.8.2.2-4: Packet filter list #4**

| Derivation Path: TS 24.501, table 9.11.4.13   |   |   |            |
|---|---|---|------------|
| Information Element   | Value/remark                                      | Comment                                     | Condition  |
| Packet filter list  |   |   |            |
| Packet filter direction   | '11'B   | bidirectional                               |            |
| Packet filter identifier  | '0100'B   | Id 4  |            |
| Component type 1 ID   | 0 0 0 1 0 0 0 0                                   | IPv4 remote address type                    | remotelPv4 |
|   | 0 0 1 0 0 0 0 1                                   | IPv6 remote address type/prefix lenght type | remotelPv6 |
| Component type 1 Value  | 10.10.10.4<br>255.255.255.255                     | See Note 1                                  | remotelPv4 |
|   | C0C0:C0C0:C0C0:C004<br>C0C0:C0C0:C0C0:C0C0/<br>64 | See Note 1                                  | remotelPv6 |
| Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE.<br>remotelPv4 applies if the UE has acquired an IPv4 address only, remotelPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address. |   |   |            |

**Table 4.8.2.2-5: Packet filter list #5**

| Derivation Path: TS 24.501, table 9.11.4.13   |   |   |             |
|---|---|---|-------------|
| Information Element   | Value/remark                                      | Comment                                     | Condition   |
| Packet filter list  |   |   |             |
| Packet filter direction   | '11'B   | bidirectional                               |             |
| Packet filter identifier  | '0101'B   | Id 5  |             |
| Component type 1 ID   | 0 0 0 1 0 0 0 0                                   | IPv4 remote address type                    | remotelIPv4 |
|   | 0 0 1 0 0 0 0 1                                   | IPv6 remote address type/prefix length type | remotelIPv6 |
| Component type 1 Value  | 10.10.10.5<br>255.255.255.255                     | See Note 1                                  | remotelIPv4 |
|   | C0C0:C0C0:C0C0:C005<br>C0C0:C0C0:C0C0:C0C0/<br>64 | See Note 1                                  | remotelIPv6 |
| Note 1: This IP address is also the address of an IP server able to send a flow of downlink IP packets to the UE.<br>remotelIPv4 applies if the UE has acquired an IPv4 address only, remotelIPv6 applies if the UE has acquired an IPv6 address only, or both an IPv6 and an IPv4 address. |   |   |             |

**Table 4.8.2.2-6: Packet filter list #6**

| Derivation Path: TS 24.501, table 9.11.4.13   |                 |   |           |
|---|-----------------|---|-----------|
| Information Element   | Value/remark    | Comment   | Condition |
| Packet filter list  |                 |   |           |
| Packet filter direction   | '11'B           | bidirectional   |           |
| Packet filter identifier  | 0110'B          | Id 6  |           |
| Component type 1 ID   | 0 1 0 1 0 0 0 1 | Remote port range type  |           |
| Component type 1 Value  | media port      | SS speech media port as used in the SDP negotiation (RTP remote port); see Note 1 |           |
|   | media port + 1  | RTCP remote port; see Note 1  |           |
| Component type 2 ID   | 0 0 1 1 0 0 0 0 | Protocol identifier/Next header type  |           |
| Component type 2 Value  | 17              | UDP   |           |
| Note 1: According to TS 26.114 [45] and RFC 4566 [46] a "media port" can be understood as the transport port to which a media stream is sent. |                 |   |           |

**Table 4.8.2.2-7: Packet filter list #7**

| Derivation Path: TS 24.501, table 9.11.4.13   |                 |  |           |
|---|-----------------|--|-----------|
| Information Element   | Value/remark    | Comment  | Condition |
| Packet filter list  |                 |  |           |
| Packet filter direction   | '11'B           | bidirectional  |           |
| Packet filter identifier  | 0111'B          | Id 7   |           |
| Component type 1 ID   | 0 1 0 1 0 0 0 1 | Remote port range type   |           |
| Component type 1 Value  | media port      | SS video media port as used in the SDP negotiation (RTP remote port); see Note 1 |           |
|   | media port + 1  | RTCP remote port; see Note 1   |           |
| Component type 2 ID   | 0 0 1 1 0 0 0 0 | Protocol identifier/Next header type   |           |
| Component type 2 Value  | 17              | UDP  |           |
| Note 1: According to TS 26.114 [45] and RFC 4566 [46] a "media port" can be understood as the transport port to which a media stream is sent. |                 |  |           |

#### 4.8.2.3 Reference QoS flow descriptions

**Table 4.8.2.3-1: Reference QoS flow #1**

| Derivation Path: TS 24.501, table 9.11.4.12 |   |                                 |                       |
|---|---|---------------------------------|-----------------------|
| Information Element                         | Value/remark                                | Comment                         | Condition             |
| QoS flow descriptions                       |   |                                 |                       |
| QoS flow description                        |   |                                 |                       |
| QFI   | '00 0001'B                                  | QFI 1                           |                       |
| Operation code                              | '001'B                                      | Create new QoS flow description |                       |
| E bit                                       | '1'B  | Parameters list is included     |                       |
| Number of parameters                        | '00 0001'B                                  | 1 parameter                     |                       |
| Number of parameters                        | '00 0010'B                                  | 2 parameters                    | Interworking_with_EPS |
| 5QI   | '0000 1001'B                                | 5QI 9                           |                       |
| EPS bearer identity                         | Any not yet assigned value different to '5' |                                 | Interworking_with_EPS |

| Condition             | Explanation  |
|-----------------------|--|
| Interworking_with_EPS | If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message also including the Mapped EPS bearer context IE. |

**Table 4.8.2.3-2: Reference QoS flow #2**

| Derivation Path: TS 24.501, table 9.11.4.12 |              |                                 |                       |
|---|--------------|---------------------------------|-----------------------|
| Information Element                         | Value/remark | Comment                         | Condition             |
| QoS flow descriptions                       |              |                                 |                       |
| QoS flow description                        |              |                                 |                       |
| QFI   | '00 0010'B   | QFI 2                           |                       |
| Operation code                              | '001'B       | Create new QoS flow description |                       |
| E bit                                       | '1'B         | Parameters list is included     |                       |
| Number of parameters                        | '00 0001'B   | 1 parameter                     |                       |
| Number of parameters                        | '00 0010'B   | 2 parameters                    | Interworking_with_EPS |
| 5QI   | '0000 0101'B | 5QI 5                           |                       |
| EPS bearer identity                         | 5            | EBI 5                           | Interworking_with_EPS |

| Condition             | Explanation  |
|-----------------------|--|
| Interworking_with_EPS | If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message also including the Mapped EPS bearer context IE. |

**Table 4.8.2.3-2a: Reference QoS flow #2a**

| Derivation Path: TS 24.501, table 9.11.4.12 |              |                                 |           |
|---|--------------|---------------------------------|-----------|
| Information Element                         | Value/remark | Comment                         | Condition |
| QoS flow descriptions                       |              |                                 |           |
| QoS flow description                        |              |                                 |           |
| QFI   | '00 0100'B   | QFI 4                           |           |
| Operation code                              | '001'B       | Create new QoS flow description |           |
| E bit                                       | '1'B         | Parameters list is included     |           |
| Number of parameters                        | '00 0001'B   | 1 parameter                     |           |
| 5QI   | '0000 0101'B | 5QI 5                           |           |

**Table 4.8.2.3-3: Reference QoS flow #3**

| Derivation Path: TS 24.501, table 9.11.4.12 |              |                                 |           |
|---|--------------|---------------------------------|-----------|
| Information Element                         | Value/remark | Comment                         | Condition |
| QoS flow descriptions                       |              |                                 |           |
| QoS flow description                        |              |                                 |           |
| QFI   | '00 0101'B   | QFI 5                           |           |
| Operation code                              | '001'B       | Create new QoS flow description |           |
| E bit                                       | '1'B         | Parameters list is included     |           |
| Number of parameters                        | '00 0001'B   | 1 parameter                     |           |
| 5QI   | '0000 0101'B | 5QI 5                           |           |

**Table 4.8.2.3-4: Reference QoS flow #4**

| Derivation Path: TS 24.501, table 9.11.4.12 |              |                                 |           |
|---|--------------|---------------------------------|-----------|
| Information Element                         | Value/remark | Comment                         | Condition |
| QoS flow descriptions                       |              |                                 |           |
| QoS flow description                        |              |                                 |           |
| QFI   | '00 0110'B   | QFI 6                           |           |
| Operation code                              | '001'B       | Create new QoS flow description |           |
| E bit                                       | '1'B         | Parameters list is included     |           |
| Number of parameters                        | '00 0001'B   | 1 parameter                     |           |
| 5QI   | '0000 0101'B | 5QI 5                           |           |

**Table 4.8.2.3-5: Reference QoS flow #5**

| Derivation Path: TS 24.501, table 9.11.4.12 |               |                                 |                       |
|---|---------------|---------------------------------|-----------------------|
| Information Element                         | Value/remark  | Comment                         | Condition             |
| QoS flow descriptions                       |               |                                 |                       |
| QoS flow description                        |               |                                 |                       |
| QFI   | '00 0111'B    | QFI 7                           |                       |
| Operation code                              | '001'B        | Create new QoS flow description |                       |
| E bit                                       | '1'B          | Parameters list is included     |                       |
| Number of parameters                        | '00 0001'B    | 1 parameter                     |                       |
| Number of parameters                        | '00 0010'B    | 2 parameters                    | Interworking_with_EPS |
| 5QI   | 5QI 1         | 5QI 1                           |                       |
| EPS bearer identity                         | '0000 0111 'B | EBI 6                           | Interworking_with_EPS |

| Condition             | Explanation  |
|-----------------------|--|
| Interworking_with_EPS | If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message also including the Mapped EPS bearer context IE. |

**Table 4.8.2.3-6: Reference QoS flow #6**

| Derivation Path: TS 24.501, table 9.11.4.12 |               |                                 |                       |
|---|---------------|---------------------------------|-----------------------|
| Information Element                         | Value/remark  | Comment                         | Condition             |
| QoS flow descriptions                       |               |                                 |                       |
| QoS flow description                        |               |                                 |                       |
| QFI   | '00 1000'B    | QFI 8                           |                       |
| Operation code                              | '001'B        | Create new QoS flow description |                       |
| E bit                                       | '1'B          | Parameters list is included     |                       |
| Number of parameters                        | '00 0001'B    | 1 parameter                     |                       |
| Number of parameters                        | '00 0010'B    | 2 parameters                    | Interworking_with_EPS |
| 5QI   | '0000 0010'B  | 5QI 2                           |                       |
| EPS bearer identity                         | '0000 0111 'B | EBI 7                           | Interworking_with_EPS |

| Condition             | Explanation  |
|-----------------------|--|
| Interworking_with_EPS | If this flow is used in the Authorized QoS flow descriptions IE of a PDU SESSION ESTABLISHMENT ACCEPT message also including the Mapped EPS bearer context IE. |

### 4.8.3 Common test UICC and USIM parameters

This clause defines default parameters for programming the elementary files of the test UICC when running conformance test cases defined in 3GPP TS 38.523-1[12].

#### 4.8.3.1 General

See clause 4.9.1 in 3GPP TS 36.508 [2] for the definition of test algorithm for

- authentication via EPC;
- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure.
- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure, further the Derivation of MSK, EMSK and other keys shall be as derived as clause 3.3 of IETF RFC 5448 [31], using Key derivation function HMAC-SHA-256 algorithm.

#### 4.8.3.2 Default parameters for the test USIM and ISIM

Same as clause 4.9.2 in 3GPP TS 36.508 [2] for

- authentication via EPC;
- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure.
- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure.

#### 4.8.3.3 Default settings for the Elementary Files (EFs)

Same as clause 4.9.3 in 3GPP TS 36.508 [2] for

- authentication via EPC;
- authentication via 5GC using 5G AKA based primary authentication and key agreement procedure
- authentication via 5GC using EAP-AKA' based primary authentication and key agreement procedure.

##### 4.8.3.3.1 Modified contents of the USIM Elementary Files

**Table 4.8.3.3.1-1: EF<sub>UST</sub> (USIM Service Table)**

| Services                                  |   | Activated | Version | Condition |
|---|---|-----------|---------|-----------|
| Service n°122                             | 5GS Mobility Management Information         | Optional  |         | 5GC       |
| Service n°123                             | 5GS Security Parameters                     | Optional  |         | 5GC       |
| Service n°124                             | Subscription identifier privacy support     | Optional  |         | 5GC       |
| Service n°125                             | SUCI calculation by the USIM                | Optional  |         | 5GC       |
| Service n°126                             | UAC Access Identities Configuration         | Optional  |         | 5GC       |
| Service n°127                             | Control plane-based steering of UE in VPLMN | Optional  |         | 5GC       |
| Service n°128                             | Call control on PDU Session by USIM         | Optional  |         |           |
| Service n°129                             | 5GS Operator PLMN List                      | Optional  |         |           |
| Note: Only 5GS related services indicated |   |           |         |           |

| Condition | Explanation            |
|-----------|------------------------|
| 5GC       | Authentication via 5GC |

##### 4.8.3.3.2 Contents of Elementary Files at the DF<sub>5GS</sub> level

This clause defines the default contents of Elementary Files (EF) that are specific for 5GS and which are grouped in Data File (DF) structure 5GS.

EF<sub>5GS3GPPLOCI</sub> (5GS 3GPP location information)

File size: 20 Bytes

Default values: Bytes 1 to 13 (HEX): FF (5G-GUTI)

Bytes 14 to 19 (HEX): 42 F6 18 FF FF FE (Last visited registered TAI in 5GS for 3GPP access)

Byte 20 (BIN): 00000001 (5GS update status for 3GPP access = "5U2 not updated")

Bytes 14 to 19: TAI-MCC = 246 (bytes 14 to 15) and TAI-MNC = 81 (byte 16) are frequently used. The TAC (bytes 17 to 19) is set to "FF FF FE" since this, in conjunction with byte 20 setting of "01", is used to ensure that the UE performs registration at the beginning of a test.

Bytes in this file (e.g. GUTI in bytes 1 to 13) may be updated as a result of a registration attempt by the UE.

#### **EF<sub>5GSN3GPPLOCI</sub> (5GS non-3GPP location information)**

File size: 20 Bytes

Default values: Bytes 1 to 13 (HEX): FF (5G-GUTI)

Bytes 14 to 19 (HEX): 42 F6 18 FF FF FE (Last visited registered TAI in 5GS for non-3GPP access)

Byte 20 (BIN): 00000001 (5GS update status for non-3GPP access = "5U2 not updated")

Bytes 14 to 19: TAI-MCC = 246 (bytes 14 to 15) and TAI-MNC = 81 (byte 16) are frequently used. The TAC (bytes 17 to 19) is set to "FF FF FE" since this, in conjunction with byte 20 setting of "01", is used to ensure that the UE performs registration at the beginning of a test.

Bytes in this file (e.g. GUTI in bytes 1 to 13) may be updated as a result of a registration attempt by the UE.

#### **EF<sub>5GS3GPPNSC</sub> (5GS 3GPP Access NAS Security Context)**

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

#### **EF<sub>5GSN3GPPNSC</sub> (5GS non-3GPP Access NAS Security Context)**

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

#### **EF<sub>5GAUTHKEYS</sub> (5G authentication keys)**

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

#### **EF<sub>UAC\_AIC</sub> (UAC Access Identities Configuration)**

The programming of this EF is a test house option.

#### **EF<sub>SUCI\_Calc\_Info</sub> (Subscription Concealed Identifier Calculation Information EF)**

The programming of this EF is a test house option.

#### **EF<sub>OPL5G</sub> (5GS Operator PLMN List)**

The programming of this EF follows default parameter written in 3GPP TS 31.102 [33], annex E.

### **4.8.3.3.3 Default settings of UICC and USIM for V2X**

#### **EF<sub>UST</sub> (USIM Service Table):**

Same as clause 4.9.3.4 of TS 36.508 [2].

**EF<sub>VST</sub> (V2X Service Table)**

If service n°119 is "available" in the USIM Service Table, this file shall be present. This EF indicates the coding of the V2X management objects and which V2X services are available.

File size: 2 Bytes

Default values: Bytes 1 to 2 (HEX): 01 02

Coding of the V2X management objects is according to 3GPP TS 24.588 [113].

Service n°2 V2X policy configuration data over PC5 is supported.

**NOTE:** The default value for NR support of V2X services is different from that for LTE V2X in clause 4.9.3.4 of TS 36.508 [2].

**EF<sub>V2XP\_PC5</sub> (V2X data policy over PC5)**

If service n°2 is "available" in EF<sub>VST</sub>, this file shall be present. This EF contains V2X in 5GS UE policies over PC5. The format of the V2X in 5GS UE policies over PC5 are specified in 3GPP TS 24.588 [113].

The V2X in 5GS UE policies over PC5 contents:

| Description   | Value  | M/O | Length (bytes) |
|---|--------|-----|----------------|
| V2X data policy over PC5 Tag                                    | 'A0'   | M   | 1              |
| Length  | Note 1 | M   | Note 2         |
| Validity timer  | FFS    | M   | X1             |
| Indicator bits  | FFS    | M   | 1              |
| Served by E-UTRA or served by NR Tag                            | '80'   | M   | 1              |
| Length  | X2     | M   | Note 2         |
| Served by E-UTRA or served by NR information                    | FFS    | M   | X2             |
| Not served by E-UTRA and not served by NR Tag                   | '81'   | O   | 1              |
| Length  | X3     | O   | Note 2         |
| Not served by E-UTRA and not served by NR information           | FFS    | O   | X3             |
| V2X service identifier to Tx profiles mapping rules Tag         | '82'   | O   | 1              |
| Length  | X4     | O   | Note 2         |
| V2X service identifier to Tx profiles mapping rules information | FFS    |     | X4             |
| Privacy config Tag  | '83'   | O   | 1              |
| Length  | X5     | O   | Note 2         |
| Privacy config information                                      | FFS    |     | X5             |
| V2X communication over PC5 in E-UTRA Tag                        | '84'   | O   | 1              |
| Length  | X6     | O   | Note 2         |
| V2X communication over PC5 in E-UTRA information                | FFS    | O   | X6             |
| V2X communication over PC5 in NR Tag                            | '85    | O   | 1              |
| Length  | X7     | O   | Note 2         |
| V2X communication over PC5 in NR Information                    | FFS    | O   | X7             |
| Note 1: This is the total size of the constructed TLV object.   |        |     |                |
| Note 2: The length is coded according to ISO/IEC 8825-1 [35].   |        |     |                |

#### 4.8.4 DNN/APN configurations

The present subclause provides DNN/APN configurations required for flexible PDU/PDN handling. Table 4.8.4-1 provides configurations for the types on DNN/APN handled in the present version of the test specification. If in the future new PDU types need to be handled then new DNN/APN configuration(s) may be added.

**Table 4.8.4-1: DNN/APN configurations**

| <b>Configurations</b>   | <b>Config #1</b>   | <b>Config #2</b>   |
|---|--|--|
| DNN/APN type  | internet   | ims  |
| DNN/APN ID  | pc_APN_ID_Internet   | pc_APN_ID_IMS  |
| 5GC QoS rule  | Reference QoS rule #1 as specified in subclause 4.8.2.1.                                 | Reference QoS rule #2 as specified in subclause 4.8.2.1.                                 |
| EPC default bearer context  | Reference default EPS bearer context #1 as specified in TS 36.508 [10], Table 6.6.1-1.   | Reference default EPS bearer context #2 as specified in TS 36.508 [10], Table 6.6.1-1.   |
| EPC dedicated bearer context  | Reference dedicated EPS bearer context #1 as specified in TS 36.508 [10], Table 6.6.2-1. | Reference dedicated EPS bearer context #4 as specified in TS 36.508 [10], Table 6.6.2-1. |
| IP address allocation   | Yes  | Yes  |
| IMS registration  | No   | Yes<br>NOTE 1  |
| NOTE 1: For PDN establishment the Procedure for IMS signalling according to TS 36.508 [2], subclause 4.5A.3 applies; for PDU establishment the Procedure for IMS signalling according to TS 34.229-5 [47], Annex A.2 applies. |  |  |

## 4.9 Test procedures

### 4.9.1 Test procedure to check user plane connectivity on DRB#n

This procedure aims at checking whether the UE User Plane Access Stratum is capable of exchanging data on DRB#n (#n is the DRB Id specified in the test case when the present procedure is called). In case the UE supports IP, it is also checked that the UE IP stack is connected to the UE User Plane Access Stratum.

Table 4.9.1-1: Test procedure sequence

| St  | Procedure  | Message Sequence |                              | TP | Verdict |
|-----|--|------------------|------------------------------|----|---------|
|     |  | U - S            | Message/PDU/SDU              |    |         |
| -   | EXCEPTION: Steps 1a1 to 1c2 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place depending on the UE implementation. | -                | -                            | -  | -       |
| 1a1 | IF (pc_IP_Ping = TRUE AND pc_IPv4 = TRUE) THEN, the SS sends an ICMP Echo request to the IPv4 address assigned to the UE on DRB#n.   | <--              | ICMP ECHO REQUEST (NOTE 3)   | -  | -       |
| 1a2 | Check: Does the UE send an ICMP Echo reply on DRB#n?   | -->              | ICMP ECHO REPLY              | -  | P       |
| 1b1 | ELSE IF (pc_IP_Ping = TRUE AND (pc_IPv4 = FALSE AND pc_IPv6 = TRUE)) THEN, the SS sends an ICMPv6 Echo request to the IPv6 address assigned to the UE on DRB#n.                              | <--              | ICMPv6 ECHO REQUEST (NOTE 3) | -  | -       |
| 1b2 | Check: Does the UE send an ICMPv6 Echo reply on DRB#n?   | -->              | ICMPv6 ECHO REPLY            | -  | P       |
| 1c1 | ELSE, the SS transmits one IP Packet to verify data path on DRB#n.<br>See NOTE 1, 2.   | -                | -                            | -  | -       |
| 1c2 | Check: Does UE send the IP Packet on DRB#n in the uplink?  | -                | -                            | -  | P       |

NOTE 1: A Test Loop is assumed to already have been closed.

NOTE 2: When DRB#n is a dedicated bearer, the IP Packet shall match the packet filters as configured for DRB#n. When DRB#n is a default bearer, the IP Packet shall match none of the dedicated bearers associated to DRB#n (if any). (NOTE 4)

NOTE 3: When DRB#n is a dedicated bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be the same as the remote address of the DL/UL packet filters. When DRB#n is a default bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be different than the remote address of the DL/UL packet filters for an associated dedicated bearer (if any). (NOTE 4)

NOTE 4: For 5GC QoS rules and the associated packet filters are specified in clause 4.8.2. For EPC the TFTs and associated packet filters are specified in clause 6.6.2 of TS 36.508 [2] and the IP packet shall be as according to clause 7.14.2 of TS 36.523-3 [41].

**Table 4.9.1-1A: Test procedure sequence for Data path check for CA tests**

| St  | Procedure  | Message Sequence |  | TP | Verdict |
|---|--|------------------|--|----|---------|
|   |  | U - S            | Message/PDU/SDU                          |    |         |
| -   | EXCEPTION: Step 1 is only performed if SCell is not yet activated.   | -                | -  | -  | -       |
| 1   | The SS transmits an Activation MAC control element to activate Scell.  | <--              | MAC PDU (Activation (C <sub>1</sub> =1)) |    |         |
| -   | EXCEPTION: Steps 2a1 to 2c2 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place depending on the UE implementation. | -                | -  | -  | -       |
| 2a1   | IF (pc_IP_Ping = TRUE AND pc_IPv4 = TRUE) THEN, the SS sends an ICMP Echo request to the IPv4 address assigned to the UE on DRB#n on the SCell.  | <--              | ICMP ECHO REQUEST (NOTE 3)               | -  | -       |
| 2a2   | Check: Does the UE send an ICMP Echo reply on DRB#n on the SpCell?   | -->              | ICMP ECHO REPLY                          | -  | P       |
| 2b1   | ELSE IF (pc_IP_Ping = TRUE AND (pc_IPv4 = FALSE AND pc_IPv6 = TRUE)) THEN, the SS sends an ICMPv6 Echo request to the IPv6 address assigned to the UE on DRB#n on the SCell.                 | <--              | ICMPv6 ECHO REQUEST (NOTE 3)             | -  | -       |
| 2b2   | Check: Does the UE send an ICMPv6 Echo reply on DRB#n on the SpCell?   | -->              | ICMPv6 ECHO REPLY                        | -  | P       |
| 2c1   | ELSE, the SS transmits one IP Packet to verify data path on DRB#n on the SCell.<br>See NOTE 1, 2.  | -                | -  | -  | -       |
| 2c2   | Check: Does UE send the IP Packet on DRB#n in the uplink on the SpCell?  | -                | -  | -  | P       |
| <p>NOTE 1: A Test Loop is assumed to already have been closed.</p> <p>NOTE 2: When DRB#n is a dedicated bearer, the IP Packet shall match the packet filters as configured for DRB#n. When DRB#n is a default bearer, the IP Packet shall match none of the dedicated bearers associated to DRB#n (if any). (NOTE 4)</p> <p>NOTE 3: When DRB#n is a dedicated bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be the same as the remote address of the DL/UL packet filters. When DRB#n is a default bearer, the source address of the ICMP/ICMPv6 ECHO REQUEST shall be different than the remote address of the DL/UL packet filters for an associated dedicated bearer (if any). (NOTE 4)</p> <p>NOTE 4: For 5GC QoS rules and the associated packet filters are specified in clause 4.8.2. For EPC the TFTs and associated packet filters are specified in clause 6.6.2 of TS 36.508 [2] and the IP packet shall be as according to clause 7.14.2 of TS 36.523-3 [41].</p> |  |                  |  |    |         |

## 4.9.2 Test procedure to activate UE Beamlock Test Function (UBF)

### 4.9.2.1 Initiation

UE is operating in FR2 in RRC\_CONNECTED state.

### 4.9.2.2 Procedure

**Table 4.9.2.2-1: Test procedure Sequence**

| St | Procedure  | Message Sequence |                            | TP | Verdict |
|----|--|------------------|----------------------------|----|---------|
|    |  | U - S            | Message/PDU/SDU            |    |         |
| 1  | SS request UE to activate UE beamlock function.    | <--              | ACTIVATE BEAMLOCK          | -  | -       |
| 2  | UE confirms that UE beamlock function is activated | -->              | ACTIVATE BEAMLOCK COMPLETE | -  | -       |

## 4.9.2.3 Specific Message contents

**Table 4.9.2.3-1: ACTIVATE BEAMLOCK**

| Derivation Path: 38.509 clause 6.4.1 |               |         |           |  |
|--------------------------------------|---------------|---------|-----------|--|
| Information Element                  | Value/remark  | Comment | Condition |  |
| Protocol discriminator               | 1 1 1 1       |         |           |  |
| Skip indicator                       | 0 0 0 0       |         |           |  |
| Message type                         | 1 0 1 0 0 0 0 |         |           |  |
| UE Beamlock test Function            | 0 0 0 0 0 0 1 |         | Tx Only   |  |
| UE Beamlock test Function            | 0 0 0 0 0 1 0 |         | Rx Only   |  |
| UE Beamlock test Function            | 0 0 0 0 0 1 1 |         | Tx and Rx |  |

| Condition | Explanation  |
|-----------|--|
| Tx Only   | Activation UE beamlock function for Tx only        |
| Rx Only   | Activation UE beamlock function for Rx only        |
| Tx and Rx | Activation UE beamlock function for both Tx and Rx |

**Table 4.9.2.3-2: ACTIVATE BEAMLOCK COMPLETE**

| Derivation Path: 38.509 clause 6.4.2 |               |         |           |  |
|--------------------------------------|---------------|---------|-----------|--|
| Information Element                  | Value/remark  | Comment | Condition |  |
| Protocol discriminator               | 1 1 1 1       |         |           |  |
| Skip indicator                       | 0 0 0 0       |         |           |  |
| Message type                         | 1 0 1 0 0 0 1 |         |           |  |

## 4.9.3 Test procedure to deactivate UE Beamlock Test Function (UBF)

## 4.9.3.1 Initiation

UE is operating in FR2 in RRC\_CONNECTED state with UE beamlock test function activated.

## 4.9.3.2 Procedure

**Table 4.9.3.2-1: Test procedure Sequence**

| St | Procedure  | Message Sequence |                              | TP | Verdict |
|----|--|------------------|------------------------------|----|---------|
|    |  | U - S            | Message/PDU/SDU              |    |         |
| 1  | SS request UE to deactivate UE beamlock function.  | <--              | DEACTIVATE BEAMLOCK          | -  | -       |
| 2  | UE confirms that UE beamlock function is activated | -->              | DEACTIVATE BEAMLOCK COMPLETE | -  | -       |

## 4.9.3.3 Specific Message contents

**Table 4.9.3.3-1: DEACTIVATE BEAMLOCK**

| Derivation Path: 38.509 clause 6.4.3 |                 |         |           |  |
|--------------------------------------|-----------------|---------|-----------|--|
| Information Element                  | Value/remark    | Comment | Condition |  |
| Protocol discriminator               | 1 1 1 1         |         |           |  |
| Skip indicator                       | 0 0 0 0         |         |           |  |
| Message type                         | 1 0 1 0 0 0 1 0 |         |           |  |

**Table 4.9.3.3-2: DEACTIVATE BEAMLOCK COMPLETE**

| Derivation Path: 38.509 clause 6.4.4 |                 |         |           |  |
|--------------------------------------|-----------------|---------|-----------|--|
| Information Element                  | Value/remark    | Comment | Condition |  |
| Protocol discriminator               | 1 1 1 1         |         |           |  |
| Skip indicator                       | 0 0 0 0         |         |           |  |
| Message type                         | 1 0 1 0 0 0 1 1 |         |           |  |

#### 4.9.4 Test procedure to check that UE is in state 5GC RRC\_IDLE on a certain NR/NGC cell

##### 4.9.4.1 Scope

This procedure aims at checking whether the UE is in state 5GC RRC\_IDLE on a certain cell (as specified in the test case).

##### 4.9.4.2 Procedure description

##### 4.9.4.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

##### 4.9.4.2.2 Procedure

**Table 4.9.4.2.2-1: Test procedure sequence**

| St  | Procedure   | Message Sequence |                                | TP | Verdict |
|-----|---|------------------|--------------------------------|----|---------|
|     |   | U - S            | Message/PDU/SDU                |    |         |
| 1   | Step 1 of Generic procedure for bringing the UE in RRC_CONNECTED state with connectivity NR as specified in Table 4.5.4.2-3 is performed.   | -                | -                              | -  | -       |
| 2   | Check: Does the UE transmit an <i>RRCSetupRequest</i> message on the cell specified in the test case?   | -->              | NR RRC: <i>RRCSetupRequest</i> | -  | P       |
| 3-8 | Steps 3-8 of Generic procedure for bringing the UE in RRC_CONNECTED state with connectivity NR as specified in Table 4.5.4.2-3 are performed.   | -                | -                              | -  | -       |
| -   | EXCEPTION: Step 9a1 describes a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value | -                | -                              | -  | -       |
| 9a1 | IF 'connected without release' is not present THEN the SS transmits an <i>RRCRelease</i> message to release RRC connection and move the UE to RRC_IDLE.   | <->              | NR RRC: <i>RRCRelease</i>      | -  | -       |

##### 4.9.4.2.3 Specific Message content

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

### 4.9.5 Test procedure to check that UE is camped on a new NR/NGC cell belonging to a new TA

#### 4.9.5.1 Scope

This procedure aims at checking whether the UE performs a mobility registration updating (Tracking Area (TA) update) procedure when it camps on a new cell (as specified in the test case) belonging to a new TA.

#### 4.9.5.2 Procedure description

##### 4.9.5.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

##### 4.9.5.2.2 Procedure sequence

**Table 4.9.5.2.2-1: Test procedure sequence mobility registration updating (TA update)**

| St  | Procedure   | Message Sequence |   | TP | Verdict |
|---|---|------------------|---|----|---------|
|   |   | U - S            | Message/PDU/SDU   |    |         |
| -   | EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.   | -                | -   | -  | -       |
| 1   | The UE transmits an <i>RRCSetupRequest</i> message.   | -->              | NR RRC: <i>RRCSetupRequest</i>                                      | -  | -       |
| 2   | SS transmit an <i>RRCSetup</i> message.   | <--              | NR RRC: <i>RRCSetup</i>   | -  | -       |
| 3   | The UE transmits an <i>RRCSetupComplete</i> message to confirm the successful completion of the connection establishment and a REGISTRATION REQUEST message indicating "mobility registration updating" is sent to update the registration of the actual tracking area. | -->              | NR RRC: <i>RRCSetupComplete</i><br>5GMM: REGISTRATION REQUEST       | -  | -       |
| 4   | SS sends a REGISTRATION ACCEPT message containing a 5G-GUTI.<br>(NOTE 1, NOTE 2)  | <--              | NR RRC: <i>DLInformationTransfer</i><br>5GMM: REGISTRATION ACCEPT   | -  | -       |
| 5   | Check: Does the UE send a REGISTRATION COMPLETE?  | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: REGISTRATION COMPLETE | -  | P       |
| -   | EXCEPTION: Step 6a1 describes a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value   | -                | -   | -  | -       |
| 6a1   | IF 'connected without release' is not present<br>THEN the SS transmits an <i>RRCRelease</i> message to release RRC connection and move the UE to RRC_IDLE.  | <--              | NR RRC: <i>RRCRelease</i>   | -  | -       |
| NOTE 1: If a PDU session status IE was included in the REGISTRATION REQUEST message then the SS includes a PDU session status IE in the REGISTRATION ACCEPT message indicating that all the PDU sessions are active.<br>NOTE 2: If the UE has indicated S1 mode supported then the SS shall indicate in the 5GS network feature support IE in the REGISTRATION ACCEPT message the IWK N26 bit set to "interworking without N26 not supported". The setting of the "interworking without N26 not supported" has been chosen to ensure that the UE is operating in the single-registration mode allowing for a clearly pre-determined UE behaviour. |   |                  |   |    |         |

#### 4.9.5.2.3 Specific Message content

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

## 4.9.6 Test procedures for Switch off / Power off UE

### 4.9.6.1 Switch off / Power off procedure in RRC\_IDLE

**Table 4.9.6.1-1: Switch off procedure in RRC\_IDLE**

| Step    | Procedure  | Message Sequence |  |
|---------|--|------------------|--|
|         |  | U - S            | Message  |
| -       | EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] pc_SwitchOnOff or [37] pc_USIM_Removal is supported | -                | -  |
| 1a1     | IF pc_SwitchOnOff THEN switch off UE, IF pc_USIM_Removal THEN remove the USIM (Note 1)   | -                | -  |
| 1a2     | UE transmits an <i>RRCSetupRequest</i> message.  | -->              | RRC: <i>RRCSetupRequest</i>                                  |
| 1a3     | SS transmit an <i>RRCSetup</i> message.  | <--              | RRC: <i>RRCSetup</i>   |
| -       | EXCEPTION: Steps 1a4Aa1 to 1a4Aa6 specify optional behaviour if the UE has previously performed IMS registration   | -                | -  |
| 1a4Aa 1 | The UE transmits an <i>RRCSetupComplete</i> message to confirm the successful completion of the connection establishment and to initiate the IMS signalling procedure by including the SERVICE REQUEST message.  | -->              | RRC: <i>RRCSetupComplete</i><br>5GMM: SERVICE REQUEST        |
| 1a4Aa 2 | The SS transmits a <i>SecurityModeCommand</i> message to activate AS security.   | <--              | RRC: <i>SecurityModeCommand</i>                              |
| 1a4Aa 3 | The UE transmits a <i>SecurityModeComplete</i> message and establishes the initial security configuration.   | -->              | RRC: <i>SecurityModeComplete</i>                             |
| 1a4Aa 4 | The SS transmits an <i>RRCCoreConfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB.  | <--              | RRC: <i>RRCCoreConfiguration</i><br>5GMM: SERVICE ACCEPT     |
| -       | EXCEPTION: In parallel to the event described in step 1a4Aa5 below, the generic test procedure in TS 34.229-5 [47] Annex A.11 may be performed.  | -                | -  |
| 1a4Aa 5 | The UE transmits an <i>RRCCoreConfigurationComplete</i> message.   | -->              | RRC: <i>RRCCoreConfigurationComplete</i>                     |
| 1a4Aa 6 | The UE transmits a Deregistration REQUEST message  | -                | 5GMM: Deregistration REQUEST                                 |
| -       | EXCEPTION: Step 1a4Ab1 below specifies the behaviour if the UE has not previously performed IMS registration   | -                | -  |
| 1a4Ab 1 | The UE transmits an <i>RRCSetupComplete</i> message including the Deregistration REQUEST message.  | -->              | RRC: <i>RRCSetupComplete</i><br>5GMM: Deregistration REQUEST |
| 1a4     | Void   | -                | -  |
| 1a5     | The SS transmits an <i>RRCCoreRelease</i> message  | <--              | RRC: <i>RRCCoreRelease</i>                                   |
| 1b1     | ELSE power off UE (Note 2)   | -                | -  |

Note 1: USIM removal is a feasible alternative to switch off UE.

Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.

#### 4.9.6.2 Switch off / Power off procedure in RRC\_INACTIVE

##### 4.9.6.2.1 Procedure

**Table 4.9.6.2.1-1: Switch off procedure in RRC\_INACTIVE**

| Step    | Procedure  | Message Sequence |  |
|---------|--|------------------|--|
|         |  | U - S            | Message  |
| -       | EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] pc_SwitchOnOff or [37] pc_USIM_Removal is supported | -                | -  |
| 1a1     | IF pc_SwitchOnOff THEN switch off UE, IF pc_USIM_Removal THEN remove the USIM (Note 1)   | -                | -  |
| 1a2     | UE transmits an <i>RRCResumeRequest</i> message.   | -->              | NR RRC: <i>RRCResumeRequest</i>                        |
| 1a3     | SS transmit an <i>RRCResume</i> message.   | <--              | NR RRC: <i>RRCResume</i>                               |
| -       | EXCEPTION: Steps 1a4Aa1 to 1a4Aa6 specify optional behaviour if the UE has previously performed IMS registration   | -                | -  |
| 1a4Aa 1 | The UE transmits an <i>RRCResumeComplete</i> message to confirm the successful completion of the connection establishment and to initiate the IMS signalling procedure by including the SERVICE REQUEST message. | -->              | RRC: <i>RRCResumeComplete</i><br>5GMM: SERVICE REQUEST |
| 1a4Aa 2 | The SS transmits a <i>SecurityModeCommand</i> message to activate AS security.   | <--              | RRC: <i>SecurityModeCommand</i>                        |
| 1a4Aa 3 | The UE transmits a <i>SecurityModeComplete</i> message and establishes the initial security configuration.   | -->              | RRC: <i>SecurityModeComplete</i>                       |
| 1a4Aa 4 | The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB.  | <--              | RRC: <i>RRCReconfiguration</i><br>5GMM: SERVICE ACCEPT |
| -       | EXCEPTION: In parallel to the event described in step 1a4Aa5 below, the generic test procedure in TS 34.229-5 [47] Annex A.11 may be performed.  | -                | -  |
| 1a4Aa 5 | The UE transmits an <i>RRCReconfigurationComplete</i> message.   | -->              | RRC: <i>RRCReconfigurationComplete</i>                 |
| 1a4Aa 6 | The UE transmits a Deregistration REQUEST message  | -                | 5GMM: Deregistration REQUEST                           |
| -       | EXCEPTION: Step 1a4Ab1 below specifies the behaviour if the UE has not previously performed IMS registration   | -                | -  |
| 1a4     | Void   | -                | -  |
| 1a5     | The SS transmits an <i>RRCRelease</i> message  | <--              | NR RRC: <i>RRCRelease</i>                              |
| 1b1     | ELSE power off UE (Note 2)   | -                | -  |

Note 1: USIM removal is a feasible alternative to switch off UE.

Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected.

## 4.9.6.2.2 Specific Message contents

**Table 4.9.6.2.1-1: RRCResumeRequest**

| Derivation Path: TS 38.331 [6], clause 6.2.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RRCResumeRequest ::= SEQUENCE {              |              |         |           |
| rrcResumeRequest SEQUENCE {                  |              |         |           |
| resumelDentity                               | Not checked  |         |           |
| resumeMAC-I                                  | Not checked  |         |           |
| resumeCause                                  | Not checked  |         |           |
| spare  | Not checked  |         |           |
| }  |              |         |           |
| }  |              |         |           |

## 4.9.6.3 Switch off / Power off procedure in RRC\_CONNECTED

**Table 4.9.6.3-1: Switch off procedure in RRC\_CONNECTED**

| Step   | Procedure  | Message Sequence |                              |
|--|--|------------------|------------------------------|
|  |  | U - S            | Message                      |
| 1a1-<br>1a3  | Void   | -                | -                            |
| 2-4  | Void   | -                | -                            |
| -  | EXCEPTION: Steps 5a1 to 5b1 describe behaviour that depends on the UE implementation; the "lower case letter" identifies a step sequence that take place if a particular implementation is under test. | -                | -                            |
| 5a1  | IF pc_SwitchOnOff THEN switch off UE, IF pc_USIM_Removal THEN remove the USIM (Note 1)   |                  |                              |
| -  | EXCEPTION : Step 5a1Aa1 to 5a1Aa2 below specifies optional behaviour if the UE has previously performed IMS registration   | -                | -                            |
| 5a1Aa<br>1   | The UE may perform the generic test procedure described in TS 34.229-5 [47] Annex A.11   | -                | -                            |
| 5a2  | The UE transmits a DEREGISTRATION REQUEST message.   | -->              | 5GMM: DEREGISTRATION REQUEST |
| 5a3  | The SS transmits an RRCRelease message.  | <--              | NR RRC: RRCRelease           |
| 5b1  | ELSE power off UE (Note 2)   | -                | -                            |
| Note 1: USIM removal is a feasible alternative to switch off UE.   |  |                  |                              |
| Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected. |  |                  |                              |

## 4.9.6.3A Switch off / Power off procedure in RRC\_CONNECTED with T3540 started

**Table 4.9.6.3A-1: Switch off procedure in RRC\_CONNECTED with T3540 started**

| Step | Procedure  | Message Sequence |         |
|------|--|------------------|---------|
|      |  | U - S            | Message |
| 1    | SS starts timer1 = T3540 (10 sec).   | -                | -       |
| 2    | The SS locally releases the RRC connection.  | -                | -       |
| 3    | SS waits for Timer1 expires.<br>NOTE: On expiry of T3540 UE shall locally release the established N1 NAS signalling connection | -                | -       |
| 4    | The generic procedure as described in Table 4.9.6.1-1: Switch off procedure in RRC_IDLE take place.                            | -                | -       |

#### 4.9.6.4 Switch off / Power off procedure in State DREGISTERED

**Table 4.9.6.4-1: Switch off procedure in State DREGISTERED**

| Step  | Procedure  | Message Sequence |         |
|---|--|------------------|---------|
|   |  | U - S            | Message |
| -   | EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [36] pc_SwitchOnOff or [37] pc_USIM_Removal is supported | -                | -       |
| 1a1   | IF pc_SwitchOnOff THEN switch off UE (Note 1)  | -                | -       |
| 1b1   | ELSE power off UE (Note 2)   | -                | -       |
| Note 1: USIM removal is a feasible alternative to switch off UE.            |  |                  |         |
| Note 2: Power off is used when UE don't support switch off or USIM removal. |  |                  |         |

#### 4.9.6.5 Switch off / Power off procedure in WLAN Ipsec\_SA\_Established

**Table 4.9.6.5-1: Switch off procedure in Ipsec\_SA\_Established**

| Step   | Procedure  | Message Sequence |                              |
|--|--|------------------|------------------------------|
|  |  | U - S            | Message                      |
| -  | EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on the UE capability; the "lower case letter" identifies a step sequence that take place if [30] pc_SwitchOnOff or [31] pc_USIM_Removal is supported | -                | -                            |
| 1a1  | IF pc_SwitchOnOff THEN switch off UE (Note 1)  | -                | -                            |
| 1a2  | The UE transmits a DEREGISTRATION REQUEST message.   | -->              | 5GMM: DEREGISTRATION REQUEST |
| 1a3  | The generic procedure for SS-requested IPsec Secure tunnel disconnection, specified in subclause 4.5A.5, takes place performing disconnection of security association  | -                | -                            |
| 1b1  | ELSE power off UE (Note 2)   | -                | -                            |
| Note 1: USIM removal is a feasible alternative to switch off UE.   |  |                  |                              |
| Note 2: Power off is used when UE don't support switch off or USIM removal, in which case no UE originated deregistration procedure is expected. |  |                  |                              |

#### 4.9.7 Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode

##### 4.9.7.1 Scope

This procedure aims at verifying that the UE performs a Tracking Area Update (TAU) procedure when it performs inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE.

The procedure provides different security context handling options based on the condition parameters defined in Table 4.9.7.1-1.

**Table 4.9.7.1-1: Condition parameters**

| <b>Condition</b>   | <b>Explanation</b>   |
|--|--|
| new security context   | When this parameter is present the SS will establish and take into account a new security context.   |
| existing EPS security context  | When this parameter is present the SS will take into account an existing EPS security context. A prerequisite for using this condition is the existence of an EPS security context |
| NOTE 1: If none of the defined condition parameters is present when the procedure is referred to then the SS will apply mapped 5G security context. A prerequisite for using this condition is the existence of 5G security context. |  |

4.9.7.2                  Procedure description

4.9.7.2.1                  Initial conditions

System Simulator:

- 1 E-UTRA cell connected to EPC, default parameters, system information combination 31 as defined in TS 36.508 [2], subclause 4.4.3.1.1.

NOTE: Details about the NGC cell from which the UE will move to the E-UTRA cell are to be specified in the test.

User Equipment:

- The Test UICC shall be inserted. It shall provide relevant details on the EPC and 5GC.

All details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

## 4.9.7.2.2 Procedure sequence

**Table 4.9.7.2.2-1: Test procedure sequence UE Tracking area updating / inter-system change from N1 mode to S1 mode in EMM-IDLE mode**

| St  | Procedure  | Message Sequence |   | TP | Verdict |
|-----|--|------------------|---|----|---------|
|     |  | U - S            | Message/PDU/SDU   |    |         |
| -   | EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.  | -                | -   | -  | -       |
| 1   | The UE transmits an <i>RRConnectionRequest</i> message on the cell specified in the test case.   | -->              | RRC: <i>RRConnectionRequest</i>   | -  | -       |
| 2   | SS transmits an <i>RRConnectionSetup</i> message.  | <--              | RRC: <i>RRConnectionSetup</i>   | -  | -       |
| 3   | The UE transmits an <i>RRConnectionSetupComplete</i> message to confirm the successful completion of the connection establishment and a TRACKING AREA UPDATE REQUEST message is sent to update the registration of the actual tracking area.<br>For some consequences related to the content of the TRACKING AREA UPDATE REQUEST message see the Notes in Table 4.9.7.2.3-1. | -->              | RRC:<br><i>RRConnectionSetupComplete</i><br>NAS: TRACKING AREA UPDATE REQUEST | -  | -       |
| -   | EXCEPTION: Steps 4a1-4b2 describe a step sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value  | -                | -   | -  | -       |
| 4a1 | IF 'new security context' THEN the SS transmits an AUTHENTICATION REQUEST message to initiate the EPS authentication and AKA procedure.  | <--              | RRC: <i>DLInformationTransfer</i><br>NAS: AUTHENTICATION REQUEST              | -  | -       |
| 4a2 | The UE transmits an AUTHENTICATION RESPONSE message and establishes mutual authentication.   | -->              | RRC: <i>ULInformationTransfer</i><br>NAS: AUTHENTICATION RESPONSE             | -  | -       |
| 4a3 | The SS transmits a NAS SECURITY MODE COMMAND message to activate NAS security.   | <--              | RRC: <i>DLInformationTransfer</i><br>NAS: SECURITY MODE COMMAND               | -  | -       |
| 4a4 | The UE transmits a NAS SECURITY MODE COMPLETE message and establishes the initial security configuration.  | -->              | RRC: <i>ULInformationTransfer</i><br>NAS: SECURITY MODE COMPLETE              | -  | -       |
| 4b1 | IF 'existing EPS security context' THEN the SS transmits a NAS SECURITY MODE COMMAND message to activate NAS security.   | <--              | RRC: <i>DLInformationTransfer</i><br>NAS: SECURITY MODE COMMAND               | -  | -       |
| 4b2 | The UE transmits a NAS SECURITY MODE COMPLETE message and establishes the initial security configuration.  | -->              | RRC: <i>ULInformationTransfer</i><br>NAS: SECURITY MODE COMPLETE              | -  | -       |
| -   | EXCEPTION: If none of the branches 4a or 4b takes place then the SS shall apply mapped 5G security context, otherwise the SS shall apply the security context depending on the branch.   | -                | -   | -  | -       |
| 5   | SS responds with TRACKING AREA UPDATE ACCEPT message.  | <--              | RRC: <i>DLInformationTransfer</i><br>NAS: TRACKING AREA UPDATE ACCEPT         | -  | -       |
| 6   | Check: Does the UE transmit TRACKING AREA UPDATE COMPLETE?   | -->              | RRC: <i>ULInformationTransfer</i><br>NAS: TRACKING AREA UPDATE COMPLETE       | -  | P       |
| 7a1 | Void   | -                | -   | -  | -       |
| -   | EXCEPTION: Steps 8a1 to 8b2a8 describe a step sequence depending on test case scenario; the left-most "lower case letter" identifies a step sequence that take place if the test procedure is called in a particular scenario.<br>(NOTE 1)   | -                | -   | -  | -       |

|        |   |     |                                  |   |   |
|--------|---|-----|----------------------------------|---|---|
| 8a1    | IF <i>Interworking without N26 interface supported</i> THEN<br><br>The generic procedure for UE-requested PDN connection establishment, specified in subclause 4.5A.2B, takes place performing establishment of UE-requested PDN connection(s) with ExpectedNumberOfNewPDNConnections = pc_noOf_PDNsSameConnection.   | -   | -                                | - | - |
| -      | EXCEPTION: Steps 8a2a1 to 8a2b1 describe a step sequence depending on test case scenario; the right-most "lower case letter" identifies a step sequence that take place if the UE performs a specific action.   | -   | -                                | - | - |
| 8a2a 1 | IF pc_noOf_PDNsNewConnection>0 THEN the SS transmits an <i>RRCConnectionRelease</i> message to release RRC connection and moves the UE to RRC_IDLE.   | <-- | RRC: <i>RRCConnectionRelease</i> | - | - |
| 8a2a 2 | The procedure E-UTRA RRC_IDLE Unrestricted nr PDN Extension as specified in Table 4.5.2.2-6 takes place.  | -   | -                                | - | - |
| 8a2b 1 | ELSE IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCConnectionRelease</i> message to release RRC connection and move to E-UTRA RRC_IDLE (State 2).  | <-- | RRC: <i>RRCConnectionRelease</i> | - | - |
| 8b1    | ELSE (i.e. 'Interworking without N26 interface not supported')<br><br>The generic procedure for UE-requested PDN connection establishment, specified in subclause 4.5A.2B, takes place performing establishment of UE-requested PDN connection(s) with ExpectedNumberOfNewPDNConnections = pc_noOf_PDNsSameConnection with the exception that IF step 2b1, Table 4.5A.2B.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional connection establishment to take place (NOTE 2). | -   | -                                | - | - |
| -      | EXCEPTION: Steps 8b2a1 to 8b2b1 describe a step sequence depending on test case scenario; the right-most "lower case letter" identifies a step sequence that take place if the UE performs a specific action.   | -   | -                                | - | - |
| 8b2a 1 | IF pc_noOf_PDNsNewConnection>0 THEN the SS transmits an <i>RRCConnectionRelease</i> message to release RRC connection and moves the UE to RRC_IDLE.   | <-- | RRC: <i>RRCConnectionRelease</i> | - | - |
| 8b2a 2 | The procedure E-UTRA RRC_IDLE Unrestricted nr PDN Extension as specified in table 4.5.2.2-6 takes place.<br><br>For the referred in step 7, Table 4.5.2.2-6, generic procedure for UE-requested PDN connection establishment, specified in subclause 4.5A.2B, IF step 2b1, Table 4.5A.2B.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional connection establishment to take place (NOTE 2).   | -   | -                                | - | - |
| 8b2b 1 | ELSE IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCConnectionRelease</i> message to release  | <-- | RRC: <i>RRCConnectionRelease</i> | - | - |

|   |  |  |  |  |
|---|--|--|--|--|
|   | RRC connection and move to E-UTRA<br>RRC_IDLE (State 2). |  |  |  |
| <p>NOTE 1: The NWK will indicate whether Interworking without N26 interface is supported in the REGISTRATION ACCEPT message, IE '5GS network feature support', IWK N26 bit. Consequently which branch would the procedure sequence go through will depend on the content of the REGISTRATION ACCEPT message applicable to e.g. the test case which calls the present test procedure.</p> <p>NOTE 2: Depending on UE implementation and/or NWK behaviour, the UE may transfer some PDU sessions into PDN connections without re-establishing those utilising the relevant mapped QoS provided in the PDU SESSION ESTABLISHMENT ACCEPT message when the UE was on the NR cell. This will result in the number of established PDNs, if any, being lower than the pc_noOf_PDNsSameConnection or the pc_noOf_PDNsNewConnection which the UE will establish upon initial attach to the EPS.</p> |  |  |  |  |

#### 4.9.7.2.3 Specific Message content

Default message contents as specified in TS 36.508 [2] with the following exceptions.

**Table 4.9.7.2.3-1: TRACKING AREA UPDATE REQUEST (Step 3, Table 4.9.7.2.2-1)**

| Derivation Path: TS 36.508 [2], Table 4.7.2-27, condition NR.  |   |   |                |
|--|---|---|----------------|
| Information Element  | Value/remark  | Comment   | Condition      |
| EPS update type  |   |   |                |
| EPS update type Value  | '000'B or '001'B or '010'B or '100'B or '101'B  | Any Allowed Value except periodic updating  |                |
| "Active" flag  | '0'B  | No bearer establishment requested   |                |
| NAS key set identifier   | the eKSI indicating the 5G NAS security context value assigned at the initial registration when the UE entered N1   |   |                |
| Old GUTI   | GUTI, mapped from the 5G-GUTI assigned at the initial registration when the UE entered N1                           |   |                |
| Additional GUTI  | Not present or any allowed value  |   |                |
| Last visited registered TAI  | The TAI the last visited E-UTRA Cell belonged to, if any. Not included if the UE does not have last stored EPC TAI. |   |                |
| UE radio capability information update needed  | '1'B  | UE radio capability information update needed   | First-N1-to-S1 |
| EPS bearer context status  | Present, Content not checked  | EBI corresponding to active PDN connections (transferred PDU Sessions) need to be set to 1 (NOTE 2) |                |
| Old GUTI type  | "Native GUTI"   |   |                |
| UE status  | "UE is in 5GMM-REGISTERED state"  |   |                |
| <p>NOTE 1: The message shall be integrity protected using the 5GS security context available in the UE.</p> <p>NOTE 2: There will be no PDN connection establishment nor explicit bearer configuration for the transferred PDU sessions. This means that the UE has created locally the default bearer context and the dedicated bearer context(s) based on the parameters of the mapped bearer contexts or the associations between QoS flow and mapped bearer in the PDU session. Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account for building any subsequent RRC Reconfiguration message, and can be used e.g. for SS configuration purposes as well.</p> |   |   |                |

| Condition      | Explanation  |
|----------------|--|
| First-N1-to-S1 | First N1 to S1 transition following UE registration in N1 mode |

**Table 4.9.7.2.3-2: AUTHENTICATION REQUEST (Step 4a1, Table 4.9.7.2.2-1)**

| Derivation Path: TS 36.508 [2], Table 4.7.2-7. |  |  |           |
|--|--|--|-----------|
| Information Element                            | Value/remark   | Comment  | Condition |
| NAS key set identifier <sub>ASME</sub>         | An arbitrarily selected value between '000'B and '110'B, different from the valid NAS key set identifier of the UE if such a value exists. | Value shall be different to the 5G NAS security context value if there is one assigned |           |

**Table 4.9.7.2.3-3: SECURITY MODE COMMAND (Step 4a3, Table 4.9.7.2.2-1)**

| Derivation Path: TS 36.508 [2], Table 4.7.2-19. |   |         |           |
|---|---|---------|-----------|
| Information Element                             | Value/remark  | Comment | Condition |
| NAS key set identifier <sub>ASME</sub>          |   |         |           |
| NAS key set identifier                          | The 4G NAS key set identifier assigned in step 4a1. |         |           |

**Table 4.9.7.2.3-4: SECURITY MODE COMMAND (Step 4b1, Table 4.9.7.2.2-1)**

| Derivation Path: TS 36.508 [2], Table 4.7.2-19. |  |         |           |
|---|--|---------|-----------|
| Information Element                             | Value/remark   | Comment | Condition |
| NAS key set identifier <sub>ASME</sub>          |  |         |           |
| NAS key set identifier                          | The 4G NAS key set identifier assigned in the latest Authentication procedure. |         |           |

**Table 4.9.7.2.3-5: TRACKING AREA UPDATE ACCEPT (Step 5, Table 4.9.7.2.2-1)**

| Derivation Path: TS 36.508 [2], Table 4.7.2-24, condition NR. |   |         |   |
|---|---|---------|---|
| Information Element   | Value/remark                            | Comment | Condition   |
| EPS network feature support                                   | The IWK N26 (octet 4, bit 7) set to '1' |         | <i>Interworking without N26 interface supported</i> |

## 4.9.8 Procedure for Registration Reject

### 4.9.8.1 Scope

The purpose of this procedure is to reject the registration request, with a specific cause value, which may allow fields to be cleared in the USIM.

### 4.9.8.2 Procedure description

#### 4.9.8.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

## 4.9.8.2.2 Procedure sequence

**Table 4.9.8.2.2-1: Procedure for Registration Reject**

| St | Procedure   | Message Sequence |  |
|----|---|------------------|--|
|    |   | U – S            | Message  |
| 1  | The UE transmits an <i>RRCSetupRequest</i> message.   | -->              | NR RRC: <i>RRCSetupRequest</i>                                       |
| 2  | The SS transmits an <i>RRCSetup</i> message.  | <--              | NR RRC: <i>RRCSetup</i>  |
| 3  | The UE transmits an <i>RRCSetupComplete</i> message and a <b>REGISTRATION REQUEST</b> message.                | -->              | NR RRC: <i>RRCSetupComplete</i><br>5GMM: <b>REGISTRATION REQUEST</b> |
| 4  | The SS transmits an AUTHENTICATION REQUEST message including EAP-Request/AKA'-Challenge or 5G AKA Challenge.  | <--              | 5GMM: AUTHENTICATION REQUEST   |
| 5  | The UE transmits an AUTHENTICATION RESPONSE message including EAP-Response/AKA'-Challenge or 5G AKA Response. | -->              | 5GMM: AUTHENTICATION RESPONSE  |
| 6  | The SS transmits a SECURITY MODE COMMAND message including EAP-Success if EAP-AKA' used.                      | <--              | 5GMM: SECURITY MODE COMMAND  |
| 7  | The UE transmits a SECURITY MODE COMPLETE message.  | -->              | 5GMM: SECURITY MODE COMPLETE   |
| 8  | The SS transmits a REGISTRATION REJECT message with the cause value set to <i>Reject Cause</i> .              | <--              | 5GMM: REGISTRATION REJECT  |
| 9  | The SS transmits an <i>RRCRelease</i> message   | <--              | RRC: <i>RRCRelease</i>   |
| 10 | Test procedure for Switch off / Power off in State Deregistered as specified in subclause 4.9.6.4             |                  |  |

## 4.9.8.2.3 Specific message contents

**Table 4.9.8.2.3-1: REGISTRATION REJECT**

| Derivation Path: table 4.7.1-9 |                                      |   |           |
|--------------------------------|--------------------------------------|---|-----------|
| Information Element            | Value/remark                         | Comment   | Condition |
| 5GMM cause                     | Set according to <i>Reject Cause</i> | <i>Reject Cause</i> set to #6 Illegal ME as default |           |

## 4.9.9 Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode

## 4.9.9.1 Scope

This procedure aims at verifying that the UE performs a Mobility and periodic registration update procedure when it performs inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE.

## 4.9.9.2 Procedure description

## 4.9.9.2.1 Initial conditions

System Simulator:

- 1 NGC Cell connected to 5GC, default parameters, system information combination NR-6 as defined in subclause 4.4.3.1.2.

NOTE: Details about the E-UTRA cell from which the UE will move to the NGC cell are to be specified in the test.

User Equipment:

- The Test UICC shall be inserted. It shall provide relevant details on the EPC and 5GC.

All details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

## 4.9.9.2.2 Procedure sequence

**Table 4.9.9.2.2-1: Test procedure sequence UE Tracking area updating / inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode**

| St                | Procedure   | Message Sequence |  | TP | Verdict |
|-------------------|---|------------------|--|----|---------|
|                   |   | U - S            | Message/PDU/SDU  |    |         |
| -                 | EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.   | -                | -  | -  | -       |
| 1-3               | Steps 1-3 from the mobility and periodic registration update procedure as described in Table 4.9.5.2.2-1 are performed.<br>For some consequences related to the content of the REGISTRATION REQUEST message sent in step 1 see the Notes in Table 4.9.9.2.3-1.  | -                | -  | -  | -       |
| 4                 | The SS transmits a DLInformationTransfer message and an AUTHENTICATION REQUEST message.   | <--              | NR RRC: DLInformationTransfer<br>5GMM: AUTHENTICATION REQUEST  | -  | -       |
| 5                 | The UE transmits an ULInformationTransfer message and an AUTHENTICATION RESPONSE message.   | -->              | NR RRC: ULInformationTransfer<br>5GMM: AUTHENTICATION RESPONSE | -  | -       |
| 6                 | The SS transmits a DLInformationTransfer message and a SECURITY MODE COMMAND message.   | <--              | NR RRC: DLInformationTransfer<br>5GMM: SECURITY MODE COMMAND   | -  | -       |
| 7                 | The UE transmits an ULInformationTransfer message and a SECURITY MODE COMPLETE message.   | -->              | NR RRC: ULInformationTransfer<br>5GMM: SECURITY MODE COMPLETE  | -  | -       |
| 8                 | The SS transmits a SecurityModeCommand message.   | <--              | NR RRC: SecurityModeCommand                                    | -  | -       |
| 9                 | The UE transmits a SecurityModeComplete message.  | -->              | NR RRC: SecurityModeComplete                                   | -  | -       |
| 10-11             | Steps 4-5 of Table 4.9.5.2.2-1 of the generic procedure are performed.  | -                | -  | -  | -       |
| 12a1<br>-<br>13a1 | Void  | -                | -  | -  | -       |
| -                 | EXCEPTION: Steps 14a1 to 14b2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the test procedure is called in a particular scenario.<br>(NOTE 1)  | -                | -  | -  | -       |
| 14a1              | IF <i>Interworking without N26 interface supported</i> THEN<br><br>The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = pc_noOf_PDUsSameConnection.<br>The UE may attempt to transfer some of the existing in S1 PDN connection(s) in which case in the PDU SESSION ESTABLISHMENT REQUEST message the request type shall be set to "existing PDU session" (NOTE 3). | -                | -  | -  | -       |
| -                 | EXCEPTION: Steps 14a2a1 to 14a2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.  | -                | -  | -  | -       |
| 14a2<br>a1        | IF pc_noOf_PDUsNewConnection > 0 THEN<br>the SS transmits an RRCRelease message to release RRC connection and moves the UE to RRC_IDLE.   | <--              | NR RRC: RRCRelease   | -  | -       |

|  |   |     |                           |   |   |
|--|---|-----|---------------------------|---|---|
| 14a2<br>a2   | The procedure NR RRC_IDLE Extension as specified in table 4.5.2.2-4 takes place.  | -   | -                         | - | - |
| 14a2<br>b1   | ELSE IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCConnectionRelease</i> message to release RRC connection and move the UE to RRC_IDLE.  | <-- | NR RRC: <i>RRCRelease</i> | - | - |
| -  | EXCEPTION: In parallel to the events described in step 14b1 below, the steps specified in Table 4.9.9.2.2-2 may take place.   | -   | -                         | - | - |
| 14b1   | ELSE (i.e. 'Interworking without N26 interface not supported')<br>The generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, takes place performing establishment of UE-requested PDU session(s) with ExpectedNumberOfNewPDUSessions = pc_noOf_PDUsSameConnection with the exception that IF step 2b1, Table 4.5A.2.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional session establishment to take place (NOTE 2). | -   | -                         | - | - |
| -  | EXCEPTION: Steps 14b2a1 to 14b2b1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.  | -   | -                         | - | - |
| 14b2<br>a1   | IF pc_noOf_PDUsNewConnection > 0 THEN the SS transmits an <i>RRCRelease</i> message to release RRC connection and move the UE to RRC_IDLE.  | <-- | NR RRC: <i>RRCRelease</i> | - | - |
| 14b2<br>a2   | The procedure NR RRC_IDLE Extension as specified in Table 4.5.2.2-4 takes place.<br><br>For the referred in step 8, Table 4.5.2.2-4, generic procedure for UE-requested PDU session establishment, specified in subclause 4.5A.2, IF step 2b1, Table 4.5A.2.2.2-2 takes place THEN the SS shall not assign Fail but continue with the next step in the test sequence not expecting any additional session establishment to take place (NOTE 2).   | -   | -                         | - | - |
| 14b2<br>b1   | ELSE IF <i>connected without release</i> is not present THEN, the SS transmits an <i>RRCRelease</i> message to release RRC connection and move the UE to RRC_IDLE.  | <-- | NR RRC: <i>RRCRelease</i> | - | - |
| <p>NOTE 1: The NWK will indicated whether Interworking without N26 interface is supported in the REGISTRATION ACCEPT message, IE '5GS network feature support', IWK N26 bit. Consequently which branch would the procedure sequence go through will depend on the content of the REGISTRATION ACCEPT message applicable to e.g. the test case which calls the present test procedure.</p> <p>NOTE 2: Depending on UE implementation and/or NWK behaviour, the UE may transfer some PDN connections into PDU sessions without re-establishing them with the relevant mapping provided in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message. This will result in the number of connection modifications, if any, being lower than the pc_noOf_PDUsSameConnection or the pc_noOf_PDUsNewConnection which the UE will establish upon initial attach to the 5GS.</p> <p>NOTE 3: Since the MME does not provide the UE with the mapped PDU session for a PDN connection, the UE does not know whether interworking to 5GS is supported for a PDN connection for which the UE assigned a PDU Session identity before attempting to transfer the PDN connection from S1 mode to N1 mode. It is up to UE implementation to decide which PDN connection(s) to be attempted to transfer from S1 mode to N1 mode, e.g. based on UE policy or UE local configuration. (see TS 24.501 [22], subclause 6.1.4.2)</p> |   |     |                           |   |   |

Table 4.9.9.2.2-2: Parallel behaviour

| St   | Procedure   | Message Sequence |         | TP | Verdict |
|--|---|------------------|---------|----|---------|
|  |   | U - S            | Message |    |         |
| -  | EXCEPTION: Step 1 describe a step sequence depending on test case scenario; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action.<br>NOTE 2, NOTE 3  | -                | -       | -  | -       |
| 1  | IF this is the first time in a test case that the UE moves from S1 to N1 THEN<br><br>the generic procedure for Procedure for UE-requested PDU session modification after the first S1 to N1 mode change / Single-registration mode with N26, specified in subclause 4.5A.2C, takes place with<br>ExpectedNumberOfPDUSessionModification<br>s=(pc_noOf_PDUsSameConnection+pc_no<br>Of_PDUsNewConnection), with the<br>exception that IF step 2b1, Table<br>4.5A.2C.2.2-2 takes place THEN the SS<br>shall not assign Fail but continue with the<br>next step in the test sequence not expecting<br>any additional session modifications to take<br>place (NOTE 1). |                  |         |    |         |
| <p>NOTE 1: Depending on UE implementation and/or NWK behaviour, the UE may transfer with modification some PDN connections into PDU sessions without re-establishing them with the relevant mapping provided in the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message. This will result in the number of session modifications, if any, being lower than the pc_noOf_PDUsSameConnection+pc_noOf_PDUsNewConnection.</p> <p>NOTE 2: Whether this is the first time in a test case that the UE moves from S1 to N1 depends on the test scenario (including what happens in the preamble of the test).</p> <p>NOTE 3: It is assumed that the PDU session modification for all transferred PDUs will happen on the same connection with the mobility and periodic registration update procedure.</p> <p>NOTE 4: For PDN connections which will be transferred, tests calling the present procedure shall ensure that:<br/>           - For each PDN connection established during the UE registration to the EPS, the ACTIVATE DEFAULT EPS BEARER CONTEXT REQUEST message which corresponds to the default EPS bearer of the PDN connectivity being activated, contains the Protocol configuration options IE or the Extended protocol configuration options IE with mapped 5GS PDU a session-AMBR and QoS rule(s).</p> |   |                  |         |    |         |

## 4.9.9.2.3 Specific Message content

**Table 4.9.9.2.3-1: REGISTRATION REQUEST (step 1, Table 4.9.9.2.2-1; step 3, Table 4.9.5.2.2-1)**

| Derivation Path: Table 4.7.1-6.                                    |  |  |  |
|--|--|--|--|
| Information Element  | Value/remark   | Comment  | Condition  |
| 5GS registration type  | '00xxx010'   | mobility registration updating<br>x - not checked  |  |
| ngKSI  |  |  |  |
| NAS key set identifier   | KSI <sub>AMF</sub> that was created when the UE last registered to 5GCN<br>'111'B                                | Registered_Previoulsy_on_5GCN<br>No key  | Not_Registed_Previoulsy_on_5GCN                                  |
| TSC  | '0'B<br>Not applicable   | native security context (for KSI <sub>AMF</sub> )<br>TSC does not apply for NAS key set identifier value "111" | Registered_Previoulsy_on_5GCN<br>Not_Registed_Previoulsy_on_5GCN |
| 5GS mobile identity  | 5G-GUTI mapped from the 4G-GUTI assigned when the UE last registered to EPC E-UTRA                               |  |  |
| Non-current native NAS key set identifier                          | Not present  |  |  |
| 5GMM capability  | '0000 0xx1'  | S1 mode supported<br>x - not checked   |  |
| Last visited registered TAI  | The TAI the last visited NGC Cell belonged to, if any. Not included if the UE does not have last stored 5GC TAI. |  |  |
| S1 UE network capability   |  |  |  |
| All octets with the exception of octet 8, bit 8 and octet 9, bit 6 | Not checked  |  |  |
| Extended protocol configuration options (ePCO) (octet 8, bit 8)    | '1'  | Extended protocol configuration options IE supported   |  |
| N1 mode supported (N1mode) (octet 9, bit 6)                        | '1'  | N1 mode supported  |  |
| PDU session status   | Any allowed value  | (NOTE 1)   |  |
| UE status  | "UE is in EMM-REGISTERED state"  |  |  |
| Additional GUTI  | 5G-GUTI assigned when the UE last registered to 5GCN<br>Not present  |  | Registered_Previoulsy_on_5GCN<br>Not_Registed_Previoulsy_on_5GCN |
| EPS NAS message container  | TRACKING AREA UPDATE REQUEST message   | See Table 4.9.9.2.3-2  |  |
| EPS bearer context status  | Not present  | (NOTE 2)   |  |

- NOTE 1: The UE includes the PDU session status IE indicating the status of the PDU session(s) mapped during the inter-system change from S1 mode to N1 mode from the PDN connection(s) for which the EPS indicated that interworking to 5GS is supported, if any. This means that the UE has created locally the default bearer context and the dedicated bearer context(s) based on the parameters of the mapped bearer contexts or the associations between QoS flow and mapped bearer in the PDN connection. Although the contents of the IE is not required to be verified for PASS/FAIL purposes, the provided information shall be taken into account for building any subsequent RRC Reconfiguration message, and can be used e.g. for SS configuration purposes as well.
- NOTE 2: The UE is assumed NOT to have locally deactivated EPS bearer context(s) for which interworking to 5GS is supported while the UE was in S1 mode without notifying the network.

| Condition                         | Explanation   |
|-----------------------------------|---|
| Not_Registered_Previously_on_5GCN | UE has not_registered_previously_on_5GCN. UE does not have valid 5G NAS security context and 5G-GUTI. |
| Registered_Previously_on_5GCN     | UE has registered_previously_on_5GCN. UE have valid 5G NAS security context and 5G-GUTI               |

**Table 4.9.9.2.3-2: TRACKING AREA UPDATE REQUEST (Table 4.9.9.2.3-1)**

| Derivation Path: TS 36.508 [2], Table 4.7.2-27.  |  |                                   |                             |
|--|--|-----------------------------------|-----------------------------|
| Information Element  | Value/remark   | Comment                           | Condition                   |
| EPS update type  |  |                                   |                             |
| EPS update type Value  | '000'B   | TA updating                       |                             |
| "Active" flag  | '0'B   | No Bearer Establishment requested |                             |
| NAS key set identifier   | the eKSI for the current EPS security context              |                                   |                             |
| TSC  | '0'B<br>'1'B   |                                   | Mapped EPS security context |
| Old GUTI   | 4G-GUTI assigned when the UE last registered to EPC E-UTRA |                                   |                             |
| UE network capability  | Not present  |                                   |                             |
| Last visited registered TAI  | Not present  |                                   |                             |
| DRX parameter  | Not present  |                                   |                             |
| UE radio capability information update needed  | Not present  |                                   |                             |
| EPS bearer context status  | Not present  |                                   |                             |
| MS network capability  | Not present  |                                   |                             |
| Old location area identification   | Not present  |                                   |                             |
| TMSI status  | Not present  |                                   |                             |
| Mobile station classmark 2   | Not present  |                                   |                             |
| Mobile station classmark 3   | Not present  |                                   |                             |
| Supported Codecs   | Not present  |                                   |                             |
| Additional update type   | Not present  |                                   |                             |
| Voice domain preference and UE's usage setting   | Not present  |                                   |                             |
| Old GUTI type  | Not present  |                                   |                             |
| Device properties  | Not present  |                                   |                             |
| MS network feature support   | Not present  |                                   |                             |
| TMSI based NRI container   | Not present  |                                   |                             |
| T3324 value  | Not present  |                                   |                             |
| T3412 extended value   | Not present  |                                   |                             |
| Extended DRX parameters  | Not present  |                                   |                             |
| UE additional security capability  | Not present  |                                   |                             |
| UE status  | Not present  |                                   |                             |
| Additional information requested   | Not present  |                                   |                             |
| NOTE: The message shall be integrity protected using the current EPS security context. |  |                                   |                             |

| Condition                   | Explanation  |
|-----------------------------|--|
| Mapped EPS security context | When explicitly specified by the test case in which the message is used. |

**Table 4.9.9.2.3-3: REGISTRATION ACCEPT (step 10, Table 4.9.9.2.2-1; step 4, Table 4.9.5.2.2-1)**

| Derivation Path: Table 4.7.1-7. |   |         |   |
|---------------------------------|---|---------|---|
| Information Element             | Value/remark                            | Comment | Condition   |
| 5GS network feature support     | The IWK N26 (octet 4, bit 7) set to '1' |         | <i>Interworking without N26 interface supported</i> |

## 4.9.10 Test procedure to check that the UE is in RRC\_CONNECTED state

### 4.9.10.1 Scope

This procedure aims at checking whether the UE is in the RRC\_CONNECTED state.

### 4.9.10.2 Procedure description

#### 4.9.10.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

#### 4.9.10.2.2 Procedure

**Table 4.9.10.2.2-1: Test procedure sequence**

| St | Procedure   | Message Sequence |  | TP | Verdict |
|----|---|------------------|--|----|---------|
|    |   | U - S            | Message/PDU/SDU                        |    |         |
| 1  | The SS sends <i>UECapabilityEnquiry</i> message to the UE.        | <--              | NR RRC: <i>UECapabilityEnquiry</i>     | -  | -       |
| 2  | Check: Does the UE send a <i>UECapabilityInformation</i> message? | -->              | NR RRC: <i>UECapabilityInformation</i> |    | P       |

#### 4.9.10.2.3 Specific Message content

None.

## 4.9.11 Test Procedure for IMS Emergency call establishment in 5GC with IMS emergency registration

### 4.9.11.1 Scope

This procedure aims at verifying the UE establishment of IMS Emergency call in 5GC when the UE is in 5GMM-IDLE and when IMS emergency registration is required e.g. under Normal Service conditions.

### 4.9.11.2 Procedure description

#### 4.9.11.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

## User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 1N-A, subclause 4.4A.2 on the NR Cell. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

## 4.9.11.2.2 Procedure sequence

**Table 4.9.11.2.2-1: Test procedure sequence UE IMS Emergency call establishment in 5GC with IMS emergency registration**

| St | Procedure  | Message Sequence |   | TP | Verdict |
|----|--|------------------|---|----|---------|
|    |  | U - S            | Message/PDU/SDU   |    |         |
| -  | EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.                              | -                | -   | -  | -       |
| 1  | The UE transmits an <i>RRCSsetupRequest</i> message with 'establishmentCause' set to 'emergency'.  | -->              | NR RRC: <i>RRCSsetupRequest</i>   | -  | P       |
| 2  | The SS transmits an <i>RRCSsetup</i> message.  | <--              | NR RRC: <i>RRCSsetup</i>  | -  | -       |
| 3  | The UE transmits an <i>RRCSsetupComplete</i> message and a SERVICE REQUEST message with 'Service type' set to 'emergency services'.            | -->              | NR RRC: <i>RRCSsetupComplete</i><br>5GMM: SERVICE REQUEST   | -  | P       |
| 4  | The SS transmits a <i>SecurityModeCommand</i> message.   | <--              | NR RRC: <i>SecurityModeCommand</i>  | -  | -       |
| 5  | The UE transmits a <i>SecurityModeComplete</i> message.  | -->              | NR RRC: <i>SecurityModeComplete</i>   | -  | -       |
| 6  | The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB.                                  | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: SERVICE ACCEPT   | -  | -       |
| 7  | The UE transmits an <i>RRCReconfigurationComplete</i> message.   | -->              | NR RRC:<br><i>RRCReconfigurationComplete</i>  | -  | -       |
| 8  | The UE transmits an UL NAS TRANSPORT message with 'Request type' set to 'initial emergency request', and, a PDU SESSION ESTABLISHMENT REQUEST. | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION ESTABLISHMENT REQUEST | -  | P       |
| -  | EXCEPTION: In parallel to the events described in steps 9-10 below the events specified in steps 1a1 to 2 of Table 4.9.11.2.2-2 take place.    | -                | -   | -  | -       |
| 9  | The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION ESTABLISHMENT ACCEPT  | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: DL NAS TRANSPORT<br>5GSM: PDU SESSION ESTABLISHMENT ACCEPT     | -  | -       |
| 10 | The UE transmits an <i>RRCReconfigurationComplete</i> message.   | -->              | NR RRC:<br><i>RRCReconfigurationComplete</i>  | -  | -       |
| -  | EXCEPTION: In parallel to the events described in steps 11-13 below the events specified in steps 3 of Table 4.9.11.2.2-2 take place.          | -                | -   | -  | -       |
| 11 | The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION MODIFICATION COMMAND  | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: DL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMMAND     | -  | -       |
| 12 | The UE transmits an <i>RRCReconfigurationComplete</i> message  | -->              | NR RRC:<br><i>RRCReconfigurationComplete</i>  | -  | -       |
| 13 | The UE transmits a <i>ULInformationTransfer</i> message and an PDU SESSION MODIFICATION COMPLETE message.                                      | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMPLETE | -  | P       |

**Table 4.9.11.2.2-2: IMS signalling and Emergency call establishment**

| St  | Procedure   | Message Sequence |                 | TP | Verdict |
|-----|---|------------------|-----------------|----|---------|
|     |   | U - S            | Message/PDU/SDU |    |         |
| -   | EXCEPTION: Step 1a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | -                | -               | -  | -       |
| 1a1 | The generic procedure for IP address allocation in the user plane specified in subclause 4.5A.3 takes place.  | -                | -               | -  | -       |
| 2   | Generic Test Procedure for IMS Emergency registration / 5GS as defined in TS 34.229-5 [47], annex A.3 is performed.   | -                | -               | -  | -       |
| 3   | Generic test procedure for setting up IMS Emergency Voice Call / 5G as defined in TS 34.229-5 [47], annex A.6 is performed.   | -                | -               | -  | -       |

#### 4.9.11.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

**Table 4.9.11.2.3-1: SIB1 (at any time prior and during the procedure, Table 4.9.11.2.2-1)**

|                                  |                     |              |         |           |
|----------------------------------|---------------------|--------------|---------|-----------|
| Derivation Path: Table 4.6.1-28. | Information Element | Value/remark | Comment | Condition |
| SIB1 ::= SEQUENCE {              |                     |              |         |           |
| ims-EmergencySupport             | Present             | true         |         |           |
| }                                |                     |              |         |           |

**Table 4.9.11.2.3-2: RRCSetupRequest (step 1, Table 4.9.11.2.2-1)**

|                                  |                     |              |         |           |
|----------------------------------|---------------------|--------------|---------|-----------|
| Derivation Path: Table 4.6.1-23. | Information Element | Value/remark | Comment | Condition |
| RRCSetupRequest ::= SEQUENCE {   |                     |              |         |           |
| rrcSetupRequest SEQUENCE {       |                     |              |         |           |
| establishmentCause               | emergency           |              |         |           |
| }                                |                     |              |         |           |
| }                                |                     |              |         |           |

**Table 4.9.11.2.3-3: SERVICE REQUEST (step 3, Table 4.9.11.2.2-1)**

|                                  |                     |                    |         |           |
|----------------------------------|---------------------|--------------------|---------|-----------|
| Derivation Path: Table 4.7.1-16. | Information Element | Value/remark       | Comment | Condition |
| Service type                     | '0011'B             | emergency services |         |           |

**Table 4.9.11.2.3-4: UL NAS TRANSPORT (step 8, Table 4.9.11.2.2-1)**

|   |                     |                           |         |           |
|---|---------------------|---------------------------|---------|-----------|
| Derivation Path: Table 4.7.1-10, condition INITIAL_PDU_REQUEST. | Information Element | Value/remark              | Comment | Condition |
| Request type  | '011'B              | initial emergency request |         |           |
| S-NSSAI   | Not Present         |                           |         |           |
| DNN   | Not Present         |                           |         |           |

**Table 4.9.11.2.3-5: PDU SESSION ESTABLISHMENT REQUEST (step 8, Table 4.9.11.2.2-1)**

| Derivation Path: Table 4.7.2-1. |   |            |           |
|---------------------------------|---|------------|-----------|
| Information Element             | Value/remark  | Comment    | Condition |
| PDU session ID                  | A value that is not currently being used by another PDU session |            |           |
| PTI                             | A value currently not used                                      |            |           |
| SSC mode                        | '001'B  | SSC mode 1 |           |

**Table 4.9.11.2.3-6: DL NAS TRANSPORT (step 9, Table 4.9.11.2.2-1)**

|  |
|--|
| Derivation Path: Table 4.7.1-11, condition 5GSM_MESSAGE. |
|--|

**Table 4.9.11.2.3-7: PDU SESSION ESTABLISHMENT ACCEPT (step 9, Table 4.9.11.2.2-1)**

| Derivation Path: Table 4.7.2-2.  |  |            |           |
|----------------------------------|--|------------|-----------|
| Information Element              | Value/remark   | Comment    | Condition |
| Selected SSC mode                | '001'B   | SSC mode 1 |           |
| Authorized QoS rules             | Reference QoS rule #2 as defined in Table 4.8.2.1-2. |            |           |
| Authorized QoS flow descriptions | Reference QoS flow #2 as defined in Table 4.8.2.3-2. |            |           |

**Table 4.9.11.2.3-8: RRCReconfiguration (step 9, Table 4.9.11.2.2-1)**

|   |
|---|
| Derivation Path: Table 4.8.1-1: RRCReconfiguration-DRB (1, 0) |
|---|

**Table 4.9.11.2.3-9: PDU SESSION MODIFICATION COMMAND (step 11, Table 4.9.11.2.2-1)**

| Derivation Path: Table 4.7.2-2.  |  |         |           |
|----------------------------------|--|---------|-----------|
| Information Element              | Value/remark   | Comment | Condition |
| PDU session ID                   | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.               |         |           |
| Authorized QoS rules             | Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE. |         |           |
| Authorized QoS flow descriptions | Reference QoS flow #5 as defined in Table 4.8.2.3-5.                           |         |           |

**Table 4.9.11.2.3-10: RRCReconfiguration (step 11, Table 4.9.11.2.2-1)**

|   |
|---|
| Derivation Path: 4.8.1-1C RRCReconfiguration-Speech |
|---|

## 4.9.12 Generic Test Procedure for IMS Emergency call establishment in 5GC without IMS emergency registration

### 4.9.12.1 Scope

This procedure aims at verifying the UE establishment of IMS Emergency call in 5GC without the need for IMS emergency registration to take place beforehand e.g. under Limited Service or SIM/USIM not available, the SIM/USIM is considered invalid by the UE conditions.

### 4.9.12.2 Procedure description

#### 4.9.12.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters unless specified otherwise. PLMN/TAI which the cell belongs to, shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it

User Equipment:

- Whether the Test UICC shall be inserted or not, and, its settings e.g. in regard to the provision of Emergency Numbers, shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

## 4.9.12.2.2 Procedure sequence

**Table 4.9.12.2.2-1: Test procedure sequence UE IMS Emergency call establishment in 5GC without IMS emergency registration**

| St | Procedure   | Message Sequence |   | TP | Verdict |
|----|---|------------------|---|----|---------|
|    |   | U - S            | Message/PDU/SDU   |    |         |
| -  | EXCEPTION: Unless otherwise stated all the messages below are transmitted on the cell specified in the test case.   | -                | -   | -  | -       |
| 1  | Check: Does the UE transmits an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'emergency'?  | -->              | NR RRC: <i>RRCSetupRequest</i>  | -  | P       |
| 2  | The SS transmits an <i>RRCSetup</i> message.  | <--              | NR RRC: <i>RRCSetup</i>   | -  | -       |
| 3  | Check: Does the UE transmits an <i>RRCSetupComplete</i> message and a REGISTRATION REQUEST message with 'Service type' set to 'emergency services'?   | -->              | NR RRC: <i>RRCSetupComplete</i><br>5GMM: REGISTRATION REQUEST   | -  | P       |
| 4  | The SS transmits a <i>DLInformationTransfer</i> message and a SECURITY MODE COMMAND message with 'Selected NAS security algorithms' set to "null integrity protection algorithm" (5G-IA0), "null ciphering algorithm" (5G-EA0). | <--              | NR RRC: <i>DLInformationTransfer</i><br>5GMM: SECURITY MODE COMMAND                                       | -  | -       |
| 5  | The UE transmits an <i>ULInformationTransfer</i> message and a SECURITY MODE COMPLETE message.  | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: SECURITY MODE COMPLETE                                      | -  | P       |
| 6  | The SS transmits a <i>SecurityModeCommand</i> message with cipheringAlgorithm set to 'NULL' ciphering algorithm (nea0) and integrityProtAlgorithm set to 'NULL' integrity protection algorithm (nia0).                          | <--              | NR RRC: <i>SecurityModeCommand</i>  | -  | -       |
| 7  | The UE transmits a <i>SecurityModeComplete</i> message.   | -->              | NR RRC: <i>SecurityModeComplete</i>   | -  | P       |
| 8  | The SS transmits a <i>UECapabilityEnquiry</i> message.  | <--              | NR RRC: <i>UECapabilityEnquiry</i>  | -  | -       |
| 9  | The UE transmits a <i>UECapabilityInformation</i> message.  | -->              | NR RRC: <i>UECapabilityInformation</i>  | -  | -       |
| 10 | The SS transmits a <i>DLInformationTransfer</i> message and a REGISTRATION ACCEPT message.  | <--              | NR RRC: <i>DLInformationTransfer</i><br>5GMM: REGISTRATION ACCEPT   | -  | -       |
| 11 | The UE transmits an <i>ULInformationTransfer</i> message and a REGISTRATION COMPLETE message.   | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: REGISTRATION COMPLETE                                       | -  | -       |
| 12 | Void  | -                | -   | -  | -       |
| 13 | Check: Does the UE transmits an UL NAS TRANSPORT message with 'Request type' set to 'initial emergency request', and, a PDU SESSION ESTABLISHMENT REQUEST?  | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION ESTABLISHMENT REQUEST | -  | P       |
| -  | EXCEPTION: In parallel to the events described in steps 14-15 below the events specified in steps 1a1 to 2 of Table 4.9.12.2.2-2 take place.  | -                | -   | -  | -       |
| 14 | The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION ESTABLISHMENT ACCEPT   | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: DL NAS TRANSPORT<br>5GSM: PDU SESSION ESTABLISHMENT ACCEPT     | -  | -       |
| 15 | The UE transmits an <i>RRCReconfigurationComplete</i> message.  | -->              | NR RRC: <i>RRCReconfigurationComplete</i>   | -  | -       |
| -  | EXCEPTION: In parallel to the events described in steps 16-18 below the events specified in steps 3 of Table 4.9.12.2.2-2 take place.   | -                | -   | -  | -       |
| 16 | The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION MODIFICATION COMMAND   | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: DL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMMAND     | -  | -       |

|    |  |     |  |   |   |
|----|--|-----|--|---|---|
| 17 | The UE transmits an RRCReconfigurationComplete message   | --> | NR RRC:<br>RRCReconfigurationComplete  | - | - |
| 18 | Check: Does the UE transmits a ULInformationTransfer message and an PDU SESSION MODIFICATION COMPLETE message? | --> | NR RRC: ULInformationTransfer<br>5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMPLETE | - | P |

**Table 4.9.12.2.2-2: IMS signalling and Emergency call establishment**

| St  | Procedure   | Message Sequence |                 | TP | Verdict |
|-----|---|------------------|-----------------|----|---------|
|     |   | U - S            | Message/PDU/SDU |    |         |
| -   | EXCEPTION: Step 1a1 describes behaviour depending UE implementation; the "lower case letter" identifies a step sequence that take place if the UE performs a specific action. | -                | -               | -  | -       |
| 1a1 | The generic procedure for IP address allocation in the user plane specified in subclause 4.5A.3 takes place.  | -                | -               | -  | -       |
| 2   | Generic test procedure for setting up IMS Emergency Voice Call as defined in TS 34.229-5 [47] annex A.6 is performed.   | -                | -               | -  | -       |

#### 4.9.12.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

NOTE: Some of the specific message contents provided below assume that the UE is in the state 5GMM-DEREGISTERED.LIMITED-SERVICE or 5GMM-REGISTERED.LIMITED-SERVICE (e.g. the selected cell over 3GPP access is in a forbidden PLMN or is in a forbidden tracking area respectively), or, in 5GMM-DEREGISTERED.NO-SUPI as defined in TS 24.501 [28], subclauses 5.1.3.2.1.3.3 and 5.1.3.2.1.3.6 respectively. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

**Table 4.9.12.2.3-1: SIB1 (at any time prior and during the procedure, Table 4.9.12.2.2-1)**

|                                  |                     |              |         |           |
|----------------------------------|---------------------|--------------|---------|-----------|
| Derivation Path: Table 4.6.1-28. | Information Element | Value/remark | Comment | Condition |
| SIB1 ::= SEQUENCE {              |                     |              |         |           |
| ims-EmergencySupport             | Present             | true         |         |           |
| }                                |                     |              |         |           |

**Table 4.9.12.2.3-2: RRCSsetupRequest (step 1, Table 4.9.12.2.2-1)**

|                                  |                     |              |         |           |
|----------------------------------|---------------------|--------------|---------|-----------|
| Derivation Path: Table 4.6.1-23. | Information Element | Value/remark | Comment | Condition |
| RRCSsetupRequest ::= SEQUENCE {  |                     |              |         |           |
| rrcSetupRequest SEQUENCE {       |                     |              |         |           |
| establishmentCause               | emergency           |              |         |           |
| }                                |                     |              |         |           |
| }                                |                     |              |         |           |

**Table 4.9.12.2.3-3: REGISTRATION REQUEST (step 3, Table 4.9.12.2.2-1)**

|  |
|--|
| Derivation Path: Table 4.7.1-6, condition EMERGENCY. |
|--|

**Table 4.9.12.2.3-4: SECURITY MODE COMMAND (step 4, Table 4.9.12.2.2-1)**

| Derivation Path: Table 4.7.1-25.       |              |                                     |           |
|--|--------------|-------------------------------------|-----------|
| Information Element                    | Value/remark | Comment                             | Condition |
| Selected NAS security algorithms       |              |                                     |           |
| Type of ciphering algorithm            | 5G-EA0       | null ciphering algorithm            |           |
| Type of integrity protection algorithm | 5G-IA0       | null integrity protection algorithm |           |
| ngKSI                                  |              |                                     |           |
| NAS key set identifier                 | '000'B       |                                     |           |

**Table 4.9.12.2.3-5: SecurityModeCommand (step 6, Table 4.9.12.2.2-1)**

| Derivation Path: Table 4.6.1-25.   |              |                                       |           |
|------------------------------------|--------------|---------------------------------------|-----------|
| Information Element                | Value/remark | Comment                               | Condition |
| SecurityModeCommand ::= SEQUENCE { |              |                                       |           |
| criticalExtensions CHOICE {        |              |                                       |           |
| securityModeCommand SEQUENCE {     |              |                                       |           |
| securityConfigSMC SEQUENCE {       |              |                                       |           |
| securityAlgorithmConfig SEQUENCE { |              |                                       |           |
| cipheringAlgorithm                 | nea0         | 'NULL' ciphering algorithm            |           |
| integrityProtAlgorithm             | nia0         | 'NULL' integrity protection algorithm |           |
| }                                  |              |                                       |           |
| }                                  |              |                                       |           |
| }                                  |              |                                       |           |
| }                                  |              |                                       |           |
| }                                  |              |                                       |           |
| }                                  |              |                                       |           |
|                                    |              |                                       |           |

**Table 4.9.12.2.3-6: REGISTRATION ACCEPT (step 10, Table 4.9.12.2.2-1)**

Derivation Path: Table 4.7.1-7, condition EMERGENCY.

**Table 4.9.12.2.3-7: UL NAS TRANSPORT (step 13, Table 4.9.12.2.2-1)**

| Derivation Path: Table 4.7.1-10, condition INITIAL_PDU_REQUEST. |              |                           |           |
|---|--------------|---------------------------|-----------|
| Information Element   | Value/remark | Comment                   | Condition |
| Request type  | '011'B       | initial emergency request |           |
| S-NSSAI   | Not Present  |                           |           |
| DNN   | Not Present  |                           |           |

**Table 4.9.12.2.3-8: PDU SESSION ESTABLISHMENT REQUEST (step 13, Table 4.9.12.2.2-1)**

| Derivation Path: Table 4.7.2-1. |   |            |           |
|---------------------------------|---|------------|-----------|
| Information Element             | Value/remark  | Comment    | Condition |
| PDU session ID                  | A value that is not currently being used by another PDU session |            |           |
| PTI                             | A value currently not used                                      |            |           |
| SSC mode                        | '001'B  | SSC mode 1 |           |

**Table 4.9.12.2.3-9: DL NAS TRANSPORT (step 14, Table 4.9.12.2.2-1)**

|  |
|--|
| Derivation Path: Table 4.7.1-11, condition 5GSM_MESSAGE. |
|--|

**Table 4.9.12.2.3-10: PDU SESSION ESTABLISHMENT ACCEPT (step 14, Table 4.9.12.2.2-1)**

| Derivation Path: Table 4.7.2-2.  |  |            |           |
|----------------------------------|--|------------|-----------|
| Information Element              | Value/remark   | Comment    | Condition |
| Selected SSC mode                | '001'B   | SSC mode 1 |           |
| Authorized QoS rules             | Reference QoS rule #2 as defined in Table 4.8.2.1-2. |            |           |
| Authorized QoS flow descriptions | Reference QoS flow #2 as defined in Table 4.8.2.3-2. |            |           |

**Table 4.9.12.2.3-11: RRCReconfiguration (step 14, Table 4.9.12.2.2-1)**

|   |
|---|
| Derivation Path: Table 4.8.1-1: RRCReconfiguration-DRB (1, 0) |
|---|

**Table 4.9.12.2.3-12: PDU SESSION MODIFICATION COMMAND (step 16, Table 4.9.12.2.2-1)**

| Derivation Path: Table 4.7.2-2.  |  |         |           |
|----------------------------------|--|---------|-----------|
| Information Element              | Value/remark   | Comment | Condition |
| PDU session ID                   | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.               |         |           |
| Authorized QoS rules             | Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE. |         |           |
| Authorized QoS flow descriptions | Reference QoS flow #5 as defined in Table 4.8.2.3-5.                           |         |           |

**Table 4.9.12.2.3-13: RRCReconfiguration (step 16, Table 4.9.12.2.2-1)**

|   |
|---|
| Derivation Path: 4.8.1-1C RRCReconfiguration-Speech |
|---|

## 4.9.12A Test Procedure for IMS MO Emergency call release

### 4.9.12A.1 Scope

This procedure aims at verifying the UE initiated release of an ongoing IMS Emergency call in 5GC

### 4.9.12A.2 Procedure description

#### 4.9.12A.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 3N-A, subclause 4.4A.2 on the NR Cell with an active IMS emergency call. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

#### 4.9.12A.2.2 Procedure sequence

**Table 4.9.12A.2.2-1: Test procedure sequence IMS MO Emergency call release**

| St  | Procedure   | Message Sequence |  | TP | Verdict |
|-----|---|------------------|--|----|---------|
|     |   | U - S            | Message/PDU/SDU  |    |         |
| 1-3 | Generic test procedure for MO Release of Voice Call / 5GS, as defined in Annex A.7 of TS 34.229-5 [47], is performed. | -                | -  | -  | -       |
| 4   | The SS transmits a <i>RRCReconfiguration</i> message and a PDU SESSION RELEASE COMMAND message.                       | <--              | NR RRC: <i>RRCReconfiguration</i><br>NR NAS: PDU SESSION RELEASE COMMAND                             | -  | -       |
| 4A  | The UE transmits a <i>RRCReconfigurationComplete</i>  | -                | NR RRC:<br><i>RRCReconfigurationComplete</i>   | -  | -       |
| 5   | Check: Does the UE transmit a PDU SESSION RELEASE COMPLETE message?   | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION RELEASE COMPLETE | -  | P       |

#### 4.9.12A.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

**Table 4.9.12A.2.3-1: *RRCReconfiguration* (step 4, Table 4.9.12A.2.2-1)**

| Derivation Path: Table 4.6.1-13.  |  |         |           |
|---|--|---------|-----------|
| Information Element   | Value/remark   | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE {   |  |         |           |
| criticalExtensions CHOICE {   |  |         |           |
| rrcReconfiguration SEQUENCE {   |  |         |           |
| radioBearerConfig SEQUENCE {  |  |         |           |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {                   | 2 entries  |         |           |
| DRB-Identity[1]   | DRB-Identity linked to the IMS emergency signalling bearer | entry 1 |           |
| DRB-Identity[2]   | DRB-Identity linked to the IMS emergency speech bearer     | entry 2 |           |
| }   |  |         |           |
| }   |  |         |           |
| nonCriticalExtension SEQUENCE {   |  |         |           |
| masterCellGroup SEQUENCE {  |  |         |           |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | 2 entries  |         |           |
| logicalChannelIdentity[1]   | Same value as drb-Identity[1] above                        | entry 1 |           |
| logicalChannelIdentity[2]   | Same value as drb-Identity[2] above                        | entry 2 |           |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |

**Table 4.9.12A.2.3-2: PDU SESSION RELEASE COMMAND (step 4, Table 4.9.12A.2.2-1)**

| Derivation Path: Table 4.7.1-14. |  |                      |           |
|----------------------------------|--|----------------------|-----------|
| Information Element              | Value/remark                               | Comment              | Condition |
| PDU session ID                   | Set according to the Emergency session ID. |                      |           |
| 5GSM cause                       | '0010 0100'B                               | Regular deactivation |           |

## 4.9.12B Test Procedure for IMS MT Emergency call release

### 4.9.12B.1 Scope

This procedure aims at verifying the network initiated release of an ongoing IMS Emergency call in 5GC

### 4.9.12B.2 Procedure description

#### 4.9.12B.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The Test UICC shall be inserted. It shall provide Emergency Numbers.

The procedure assumes that the UE is in test state 3N-A, subclause 4.4A.2 on the NR Cell with an active IMS emergency call. All necessary details required shall be explicitly specified in the TC which calls the procedure in its entirety or refers to parts of it.

### 4.9.12B.2.2 Procedure sequence

**Table 4.9.12B.2.2-1: Test procedure sequence IMS MT Emergency call release**

| St  | Procedure  | Message Sequence |  | TP | Verdict |
|-----|--|------------------|--|----|---------|
|     |  | U - S            | Message/PDU/SDU  |    |         |
| 1-2 | Generic test procedure for MT release of speech call, steps 1-2, as defined in Annex A.8 of TS 34.229-5 [47] is performed. | -                | -  | -  | -       |
| 3   | The SS transmits a <i>RRCReconfiguration</i> message and a PDU SESSION RELEASE COMMAND message.                            | <--              | NR RRC: <i>RRCReconfiguration</i><br>NR NAS: PDU SESSION RELEASE COMMAND                             | -  | -       |
| 3A  | The UE transmits a <i>RRCReconfigurationComplete</i>   | -                | NR RRC:<br><i>RRCReconfigurationComplete</i>   | -  | -       |
| 4   | Check: Does the UE transmit a PDU SESSION RELEASE COMPLETE message?  | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION RELEASE COMPLETE | -  | P       |

### 4.9.12B.2.3 Specific Message content

All specific message contents shall be according subclause 4.6 and 4.7 with the exceptions below.

**Table 4.9.12B.2.3-1: RRCReconfiguration (step 3, Table 4.9.12B.2.2-1)**

| Derivation Path: Table 4.6.1-13.  |  |         |           |
|---|--|---------|-----------|
| Information Element   | Value/remark   | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE {   |  |         |           |
| criticalExtensions CHOICE {   |  |         |           |
| rrcReconfiguration SEQUENCE {   |  |         |           |
| radioBearerConfig SEQUENCE {  |  |         |           |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {                   | 2 entries  |         |           |
| DRB-Identity[1]   | DRB-Identity linked to the IMS emergency signalling bearer | entry 1 |           |
| DRB-Identity[2]   | DRB-Identity linked to the IMS emergency speech bearer     | entry 2 |           |
| }   |  |         |           |
| }   |  |         |           |
| nonCriticalExtension SEQUENCE {   |  |         |           |
| masterCellGroup SEQUENCE {  |  |         |           |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | 2 entries  |         |           |
| LogicalChannelIdentity[1]   | Same value as drb-Identity[1] above                        | entry 1 |           |
| LogicalChannelIdentity[2]   | Same value as drb-Identity[2] above                        | entry 2 |           |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |

**Table 4.9.12B.2.3-2: PDU SESSION RELEASE COMMAND (step 3, Table 4.9.12B.2.2-1)**

| Derivation Path: Table 4.7.1-14. |  |                      |           |
|----------------------------------|--|----------------------|-----------|
| Information Element              | Value/remark                               | Comment              | Condition |
| PDU session ID                   | Set according to the Emergency session ID. |                      |           |
| 5GSM cause                       | '0010 0100'B                               | Regular deactivation |           |

## 4.9.13 Test procedure for no response to paging

### 4.9.13.1 Scope

This procedure aims at checking that the UE ignores paging messages with a specified identity.

### 4.9.13.2 Procedure description

#### 4.9.13.2.1 Initial conditions

As specified in the TC which calls the procedure in its entirety or refers to parts of it.

## 4.9.13.2.2 Procedure sequence

**Table 4.9.13.2.2-1: Test procedure sequence**

| St | Procedure  | Message Sequence |                        | TP | Verdict |
|----|--|------------------|------------------------|----|---------|
|    |  | U - S            | Message                |    |         |
| 1  | The SS transmits a paging message using the NG-5G-S-TMSI which is specified in the referring test step, and on the cell which is specified in the referring test step. | <--              | <i>Paging</i>          | -  | -       |
| 2  | Check: Does the UE send an <i>RRCSetupRequest</i> message on the cell where the paging was transmitted within the next 3s?   | -->              | <i>RRCSetupRequest</i> | -  | F       |

## 4.9.13.3 Specific Message content

None.

**4.9.14 Void****4.9.15 Generic Test Procedure for IMS MO speech call establishment in 5GC**

## 4.9.15.1 Scope

The purpose of this procedure is to establish an IMS MO speech call.

## 4.9.15.2 Procedure description

## 4.9.15.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

## 4.9.15.2.2 Procedure sequence

**Table 4.9.15.2.2-1: IMS MO speech call establishment in 5GC**

| St          | Procedure  | Message Sequence |   | TP | Verdict |
|-------------|--|------------------|---|----|---------|
|             |  | U – S            | Message   |    |         |
| 1           | Make the UE attempt an IMS speech call   | -                | -   | -  | -       |
| 2           | Check: Does the UE transmit an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mo-Data'?  | -->              | NR RRC: <i>RRCSetupRequest</i>  | -  | P       |
| 3           | SS transmit an <i>RRCSetup</i> message.  | <--              | NR RRC: <i>RRCSetup</i>   | -  | -       |
| 4           | Check: Does the UE transmit an <i>RRCSetupComplete</i> message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message? | -->              | NR RRC: <i>RRCSetupComplete</i><br>5GMM: SERVICE REQUEST  | -  | P       |
| 5           | The SS transmits a <i>SecurityModeCommand</i> message to activate AS security.   | <--              | NR RRC: <i>SecurityModeCommand</i>  | -  | -       |
| 6           | Check: Does the UE transmit a <i>SecurityModeComplete</i> message and establish the initial security configuration?  | -->              | NR RRC: <i>SecurityModeComplete</i>   | -  | P       |
| 7           | The SS transmits an <i>RRCCoreConfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).   | <--              | NR RRC: <i>RRCCoreConfiguration</i><br>5GMM: SERVICE ACCEPT   | -  | -       |
| -           | EXCEPTION: In parallel to step 8 below, the steps specified in Table 4.9.15.2.2-2 take place.  | -                | -   | -  | -       |
| 8           | The UE transmits an <i>RRCCoreConfigurationComplete</i> message.   | -->              | NR RRC: <i>RRCCoreConfigurationComplete</i>   | -  | -       |
| -           | EXCEPTION: Steps 9a1 to 9b4 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.                                      | -                | -   | -  | -       |
| 9a1-9a4     | IF the UE is configured to use preconditions THEN steps 2-5 of Annex A.4.1 of TS 34.229-5 [47] take place.   | -                | -   | -  | -       |
| 9b1-9b4     | ELSE steps 2-5 of Annex A.4.2 of TS 34.229-5 [47] take place.  | -                | -   | -  | -       |
| 10          | The SS transmits an <i>RRCCoreConfiguration</i> message and an PDU SESSION MODIFICATION COMMAND  | <--              | NR RRC: <i>RRCCoreConfiguration</i><br>5GMM: DL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMMAND   | -  | -       |
| 11          | The UE transmits an <i>RRCCoreConfigurationComplete</i> message  | -->              | NR RRC: <i>RRCCoreConfigurationComplete</i>   | -  | -       |
| 12          | Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?  | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMPLETE | -  | P       |
| -           | EXCEPTION: Steps 13a1 to 13b8 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.                                    | -                | -   | -  | -       |
| 13a1 - 13a7 | IF the UE is configured to use preconditions THEN steps 6-12 of Annex A.4.1 of TS 34.229-5 [47] take place.  | -                | -   | -  | -       |
| 13b1 - 13b3 | ELSE steps 6-8 of Annex A.4.2 of TS 34.229-5 [47] take place.  | -                | -   | -  | -       |

**Table 4.9.15.2.2-2: Parallel Behaviour**

| St  | Procedure   | Message Sequence |         | TP | Verdict |
|-----|---|------------------|---------|----|---------|
|     |   | U - S            | Message |    |         |
| -   | EXCEPTION: Steps 1a1 to 1b1 describe behaviour that depends on UE configuration; the “lower case letter” identifies a step sequence that takes place if such configuration was conducted. | -                | -       | -  | -       |
| 1a1 | IF the UE is configured to use preconditions THEN step 1 of Annex A.4.1 of TS 34.229-5 [47] takes place.  | -                | -       | -  | -       |
| 1b1 | ELSE step 1 of Annex A.4.2 of TS 34.229-5 [47] takes place  | -                | -       | -  | -       |

## 4.9.15.3 Specific message contents

**Table 4.9.15.3-1: RRCSetupRequest (step 2, Table 4.9.15.2.2-1)**

|                                  |                     |              |         |           |
|----------------------------------|---------------------|--------------|---------|-----------|
| Derivation Path: Table 4.6.1-23. | Information Element | Value/remark | Comment | Condition |
| RRCSetupRequest ::= SEQUENCE {   |                     |              |         |           |
| rrcSetupRequest SEQUENCE {       |                     |              |         |           |
| establishmentCause               | mo-Data             |              |         |           |
| }                                |                     |              |         |           |
| }                                |                     |              |         |           |

**Table 4.9.15.3-2: SERVICE REQUEST (step 4, Table 4.9.15.2.2-1)**

|                                 |                     |              |         |           |
|---------------------------------|---------------------|--------------|---------|-----------|
| Derivation Path: Table 4.7.1-16 | Information Element | Value/remark | Comment | Condition |
| Service type                    |                     |              |         |           |
| Service type value              | '0001'B             | data         |         |           |

**Table 4.9.15.3-3: PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.15.2.2-1)**

|                                  |                     |  |         |           |
|----------------------------------|---------------------|--|---------|-----------|
| Derivation Path: Table 4.7.2-2.  | Information Element | Value/remark   | Comment | Condition |
| PDU session ID                   |                     | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.               |         |           |
| Authorized QoS rules             |                     | Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE. |         |           |
| Authorized QoS flow descriptions |                     | Reference QoS flow #5 as defined in Table 4.8.2.3-5.                           |         |           |

**Table 4.9.15.3-4: RRCReconfiguration (step 10, Table 4.9.15.2.2-1)**

|                                 |
|---------------------------------|
| Derivation Path: Table 4.8.1-1C |
|---------------------------------|

## 4.9.16 Generic Test Procedure for IMS MT speech call establishment in 5GC

### 4.9.16.1 Scope

The purpose of this procedure is to establish an IMS MT speech call.

### 4.9.16.2 Procedure description

#### 4.9.16.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

## 4.9.16.2.2 Procedure sequence

**Table 4.9.16.2.2-1: IMS MT speech call establishment in 5GC**

| St          | Procedure   | Message Sequence |   | TP | Verdict |
|-------------|---|------------------|---|----|---------|
|             |   | U – S            | Message   |    |         |
| 1           | The SS transmits a <i>Paging</i> message.   | <--              | NR RRC: <i>Paging</i>   | -  | -       |
| 2           | Check: Does the UE transmit an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mt-Access'?   | -->              | NR RRC: <i>RRCSetupRequest</i>  | -  | P       |
| 3           | The SS transmits an <i>RRCSetup</i> message.  | <--              | NR RRC: <i>RRCSetup</i>   | -  | -       |
| 4           | Check: Does the UE transmit an <i>RRCSetupComplete</i> message and a SERVICE REQUEST message?   | -->              | NR RRC: <i>RRCSetupComplete</i><br>5GMM: SERVICE REQUEST  | -  | P       |
| 5           | The SS transmits a <i>SecurityModeCommand</i> message.  | <--              | NR RRC: <i>SecurityModeCommand</i>  | -  | -       |
| 6           | The UE transmits a <i>SecurityModeComplete</i> message.   | -->              | NR RRC: <i>SecurityModeComplete</i>   | -  | -       |
| 7           | The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).<br>The RRCReconfiguration message is configured using RRCReconfiguration-SRB2-DRB(n, m) where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively. | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: SERVICE ACCEPT   | -  | -       |
| 8           | Check: Does the UE transmit an <i>RRCReconfigurationComplete</i> message?   | -->              | NR RRC: <i>RRCReconfigurationComplete</i>   | -  | P       |
| -           | EXCEPTION: Steps 9a1 to 9b5 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.   | -                | -   | -  | -       |
| 9a1-9a5     | IF the UE is configured to use preconditions<br>THEN steps 1-5 of Annex A.5.1 of TS 34.229-5 [47] take place.   | -                | -   | -  | -       |
| 9b1-9b5     | ELSE steps 1-5 of Annex A.5.2 of TS 34.229-5 [47] take place.   | -                | -   | -  | -       |
| 10          | The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION MODIFICATION COMMAND   | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: DL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMMAND     | -  | -       |
| 11          | The UE transmits an <i>RRCReconfigurationComplete</i> message   | -->              | NR RRC: <i>RRCReconfigurationComplete</i>   | -  | -       |
| 12          | Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message?   | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMPLETE | -  | P       |
| -           | EXCEPTION: Steps 13a1 to 13b7 describe behaviour that depends on UE configuration; the "lower case letter" identifies a step sequence that takes place if such configuration was conducted.   | -                | -   | -  | -       |
| 13a1 - 13a7 | IF the UE is configured to use preconditions<br>THEN steps 6-12 of Annex A.5.1 of TS 34.229-5 [47] take place.  | -                | -   | -  | -       |
| 13b1 - 13b5 | ELSE steps 6-10 of Annex A.5.2 of TS 34.229-5 [47] take place.  | -                | -   | -  | -       |

4.9.16.3 Specific message contents

**Table 4.9.16.3-1: RRCSetupRequest (step 2, Table 4.9.16.2.2-1)**

| Derivation Path: Table 4.6.1-23. |              |         |           |
|----------------------------------|--------------|---------|-----------|
| Information Element              | Value/remark | Comment | Condition |
| RRCSetupRequest ::= SEQUENCE {   |              |         |           |
| rrcSetupRequest SEQUENCE {       |              |         |           |
| establishmentCause               | mt-Access    |         |           |
| }                                |              |         |           |
| }                                |              |         |           |

**Table 4.9.16.3-2: SERVICE REQUEST (step 4, Table 4.9.16.2.2-1)**

| Derivation Path: Table 4.7.1-16 |              |         |           |
|---------------------------------|--------------|---------|-----------|
| Information Element             | Value/remark | Comment | Condition |
| Service type                    |              |         |           |
| Service type value              | '0001'B      | data    |           |

**Table 4.9.16.3-3: PDU SESSION MODIFICATION COMMAND (step 10, Table 4.9.16.2.2-1)**

| Derivation Path: Table 4.7.2-2.  |  |         |           |
|----------------------------------|--|---------|-----------|
| Information Element              | Value/remark   | Comment | Condition |
| PDU session ID                   | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message.               |         |           |
| Authorized QoS rules             | Reference QoS rule #7 as defined in Table 4.8.2.1-7 using condition IMS_VOICE. |         |           |
| Authorized QoS flow descriptions | Reference QoS flow #5 as defined in Table 4.8.2.3-5.                           |         |           |

**Table 4.9.16.3-4: RRCReconfiguration (step 10, Table 4.9.16.2.2-1)**

|                                 |
|---------------------------------|
| Derivation Path: Table 4.8.1-1C |
|---------------------------------|

## 4.9.17 Generic Test Procedure for IMS MO call release in 5GC

4.9.17.1 Scope

The purpose of this procedure is to make a UE initiated release of an ongoing IMS speech call.

4.9.17.2 Procedure description

4.9.17.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A on the NR Cell with an active IMS call.

## 4.9.17.2.2 Procedure sequence

**Table 4.9.17.2.2-1: IMS MO speech call release in 5GC**

| St  | Procedure   | Message Sequence |   | TP | Verdict |
|-----|---|------------------|---|----|---------|
|     |   | U – S            | Message   |    |         |
| 1-2 | Generic test procedure for MO release of speech call, steps 1-2, as defined in annex A.7 of TS 34.229-5 [47] are performed.                       | -                | -   | -  | -       |
| 3   | The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION MODIFICATION COMMAND   | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: DL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMMAND     | -  | -       |
| 4   | The UE transmits an <i>RRCReconfigurationComplete</i> message   | -->              | NR RRC:<br><i>RRCReconfigurationComplete</i>  | -  | -       |
| 5   | Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message? | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMPLETE | -  | P       |

## 4.9.17.2.3 Specific message contents

**Table 4.9.17.2.3-1: *RRCReconfiguration* (step 3, Table 4.9.17.2.2-1)**

| Derivation Path: Table 4.6.1-13.  |  |         |           |
|---|--|---------|-----------|
| Information Element   | Value/remark                                 | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE {   |  |         |           |
| criticalExtensions CHOICE {   |  |         |           |
| rrcReconfiguration SEQUENCE {   |  |         |           |
| radioBearerConfig SEQUENCE {  |  |         |           |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {                   | 1 entry                                      |         |           |
| DRB-Identity[1]   | DRB-Identity linked to the IMS speech bearer | entry 1 |           |
| }   |  |         |           |
| }   |  |         |           |
| nonCriticalExtension SEQUENCE {   |  |         |           |
| masterCellGroup SEQUENCE {  |  |         |           |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | 1 entry                                      |         |           |
| LogicalChannelIdentity[1]   | Same value as drb-Identity[1] above          | entry 1 |           |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |

**Table 4.9.17.2.3-2: PDU SESSION MODIFICATION COMMAND (step 3, Table 4.9.17.2.2-1)**

| Derivation Path: Table 4.7.1-14. |  |         |           |
|----------------------------------|--|---------|-----------|
| Information Element              | Value/remark   | Comment | Condition |
| PDU session ID                   | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message. |         |           |
| Authorized QoS rules             | Reference QoS rule #2 as defined in Table 4.8.2.1-2.             |         |           |
| Authorized QoS flow descriptions | Reference QoS flow #2 as defined in Table 4.8.2.3-2.             |         |           |

## 4.9.18 Generic Test Procedure for IMS MT call release in 5GC

### 4.9.18.1 Scope

The purpose of this procedure is to make the network release an ongoing IMS speech call.

### 4.9.18.2 Procedure description

#### 4.9.18.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 3N-A on the NR Cell with an active IMS call.

#### 4.9.18.2.2 Procedure sequence

**Table 4.9.18.2.2-1: IMS MT speech call release in 5GC**

| St  | Procedure   | Message Sequence |   | TP | Verdict |
|-----|---|------------------|---|----|---------|
|     |   | U – S            | Message   |    |         |
| 1-2 | Generic test procedure for MT release of speech call, steps 1-2, as defined in annex A.8 of TS 34.229-5 [47] are performed.                       | -                | -   | -  | -       |
| 3   | The SS transmits an <i>RRCReconfiguration</i> message and an PDU SESSION MODIFICATION COMMAND   | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: DL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMMAND     | -  | -       |
| 4   | The UE transmits an <i>RRCReconfigurationComplete</i> message   | -->              | NR RRC:<br><i>RRCReconfigurationComplete</i>  | -  | -       |
| 5   | Check: Does the UE transmit a <i>ULInformationTransfer</i> message, an UL NAS TRANSPORT message and an PDU SESSION MODIFICATION COMPLETE message? | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION MODIFICATION COMPLETE | -  | P       |

## 4.9.18.2.3 Specific message contents

**Table 4.9.18.2.3-1: RRCReconfiguration (step 3, Table 4.9.18.2.2-1)**

| Derivation Path: Table 4.6.1-13.  |  |         |           |
|---|--|---------|-----------|
| Information Element   | Value/remark                                 | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE {   |  |         |           |
| criticalExtensions CHOICE {   |  |         |           |
| rrcReconfiguration SEQUENCE {   |  |         |           |
| radioBearerConfig SEQUENCE {  |  |         |           |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {                   | 1 entry                                      |         |           |
| DRB-Identity[1]   | DRB-Identity linked to the IMS speech bearer | entry 1 |           |
| }   |  |         |           |
| }   |  |         |           |
| nonCriticalExtension SEQUENCE {   |  |         |           |
| masterCellGroup SEQUENCE {  |  |         |           |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | 1 entry                                      |         |           |
| LogicalChannelIdentity[1]   | Same value as drb-Identity[1] above          |         |           |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |

**Table 4.9.18.2.3-2: PDU SESSION MODIFICATION COMMAND (step 3, Table 4.9.18.2.2-1)**

| Derivation Path: Table 4.7.1-14. |  |         |           |
|----------------------------------|--|---------|-----------|
| Information Element              | Value/remark   | Comment | Condition |
| PDU session ID                   | Same value as sent in PDU SESSION ESTABLISHMENT REQUEST message. |         |           |
| Authorized QoS rules             | Reference QoS rule #2 as defined in Table 4.8.2.1-2.             |         |           |
| Authorized QoS flow descriptions | Reference QoS flow #2 as defined in Table 4.8.2.3-2.             |         |           |

## 4.9.19 Generic Test Procedure for IMS MO SMS in 5GC

## 4.9.19.1 Scope

The purpose of this procedure is to transmit an IMS MO SMS.

## 4.9.19.2 Procedure description

## 4.9.19.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

## 4.9.19.2.2 Procedure sequence

**Table 4.9.19.2.2-1: IMS MO SMS in 5GS**

| St   | Procedure   | Message Sequence |   | TP | Verdict |
|------|---|------------------|---|----|---------|
|      |   | U – S            | Message   |    |         |
| 1    | Make the UE attempt an IMS MO SMS   | -                | -   | -  | -       |
| 2    | The UE transmits an <i>RRCSetupRequest</i> message with 'establishmentCause' set to 'mo-Data'.  | -->              | NR RRC: <i>RRCSetupRequest</i>                            | -  | P       |
| 3    | The SS transmits an <i>RRCSetup</i> message.  | <--              | NR RRC: <i>RRCSetup</i>                                   | -  | -       |
| 4    | The UE transmits an <i>RRCSetupComplete</i> message to confirm the successful completion of the connection establishment and to initiate the session management procedure by including the SERVICE REQUEST message. | -->              | NR RRC: <i>RRCSetupComplete</i><br>5GMM: SERVICE REQUEST  | -  | P       |
| 5    | The SS transmits a <i>SecurityModeCommand</i> message to activate AS security.  | <--              | NR RRC: <i>SecurityModeCommand</i>                        | -  | -       |
| 6    | The UE transmits a <i>SecurityModeComplete</i> message and establish the initial security configuration.  | -->              | NR RRC: <i>SecurityModeComplete</i>                       | -  | P       |
| 7    | The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).  | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: SERVICE ACCEPT | -  | -       |
| 8-15 | The steps 2-9 from the expected sequence defined in Annex A.13 of TS 34.229-5 [47] of IMS MO SMS / 5GS take place.  | -                | -   | -  | -       |

## 4.9.19.3 Specific message contents

**Table 4.9.19.3-1: *RRCSetupRequest* (step 2, Table 4.9.19.2.2-1)**

| Derivation Path: 38.508-1 [4], Table 4.6.1-23. |              |         |           |
|--|--------------|---------|-----------|
| Information Element                            | Value/remark | Comment | Condition |
| <i>RRCSetupRequest</i> ::= SEQUENCE {          |              |         |           |
| <i>rrcSetupRequest</i> SEQUENCE {              |              |         |           |
| <i>establishmentCause</i>                      | mo-Data      |         |           |
| }  |              |         |           |
| }  |              |         |           |

**Table 4.9.19.3-2: SERVICE REQUEST (step 4, Table 4.9.19.2.2-1)**

| Derivation Path: 38.508-1 [4], Table 4.7.1-16 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                           | Value/remark | Comment | Condition |
| Service type                                  |              |         |           |
| Service type value                            | '0001'B      | data    |           |

**4.9.20 Generic Test Procedure for IMS MT SMS in 5GC**

## 4.9.20.1 Scope

The purpose of this procedure is to receive an IMS MT SMS.

## 4.9.20.2 Procedure description

## 4.9.20.2.1 Initial conditions

System Simulator:

- 1 NR Cell connected to 5GC, default parameters.

User Equipment:

- The UE is in state 1N-A and registered to the IMS.

## 4.9.20.2.2 Procedure sequence

**Table 4.9.20.2.2-1: IMS MT SMS in 5GS**

| St   | Procedure   | Message Sequence |   | TP | Verdict |
|------|---|------------------|---|----|---------|
|      |   | U – S            | Message   |    |         |
| 1    | The SS transmits a <i>Paging</i> message.   | <--              | NR RRC: <i>Paging</i>                                     | -  | -       |
| 2    | The UE transmits an <i>RRCSsetupRequest</i> message with 'establishmentCause' set to 'mt-Access'.   | -->              | NR RRC: <i>RRCSsetupRequest</i>                           | -  | P       |
| 3    | The SS transmits an <i>RRCSsetup</i> message.   | <--              | NR RRC: <i>RRCSsetup</i>                                  | -  | -       |
| 4    | The UE transmits an <i>RRCSsetupComplete</i> message and a SERVICE REQUEST message.   | -->              | NR RRC: <i>RRCSsetupComplete</i><br>5GMM: SERVICE REQUEST | -  | P       |
| 5    | The SS transmits a <i>SecurityModeCommand</i> message.  | <--              | NR RRC: <i>SecurityModeCommand</i>                        | -  | -       |
| 6    | The UE transmits a <i>SecurityModeComplete</i> message.   | -->              | NR RRC: <i>SecurityModeComplete</i>                       | -  | -       |
| 7    | The SS transmits an <i>RRCReconfiguration</i> message and a SERVICE ACCEPT message to establish SRB2 and DRB(s).<br>The RRCReconfiguration message is configured using RRCReconfiguration-SRB2-DRB(n, m) where n and m are the number of DRB(s) configured with RLC-AM and RLC-UM respectively. | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: SERVICE ACCEPT | -  | -       |
| 8    | The UE transmits an <i>RRCReconfigurationComplete</i> message.  | -->              | NR RRC: <i>RRCReconfigurationComplete</i>                 | -  | P       |
| 9-12 | The steps 1-4 from the expected sequence defined in Annex A.14 of TS 34.229-5 [47] IMS MT SMS / 5GS take place.   | -                | -   | -  | -       |

## 4.9.20.3 Specific message contents

**Table 4.9.20.3-1: *RRCSsetupRequest* (step 2, Table 4.9.20.2.2-1)**

| Derivation Path: 38.508-1 [4], Table 4.6.1-23. |              |         |           |
|--|--------------|---------|-----------|
| Information Element                            | Value/remark | Comment | Condition |
| RRCSsetupRequest ::= SEQUENCE {                |              |         |           |
| rrcSetupRequest SEQUENCE {                     |              |         |           |
| establishmentCause                             | mt-Access    |         |           |
| }  |              |         |           |
| }  |              |         |           |

**Table 4.9.20.3-2: SERVICE REQUEST (step 4, Table 4.9.20.2.2-1)**

| Derivation Path: 38.508-1 [4], Table 4.7.1-16 |              |         |           |
|---|--------------|---------|-----------|
| Information Element                           | Value/remark | Comment | Condition |
| Service type                                  |              |         |           |
| Service type value                            | '0001'B      | data    |           |

## 4.9.21 Procedure for PDU Session Release

### 4.9.21.1 Scope

The purpose of this procedure is to release both the PDU session and the user plane resources.

### 4.9.21.2 Procedure description

#### 4.9.21.2.1 Initial conditions

The UE is in state 3N-A with PDU SESSION ACTIVE as per Table 4.4A.2-3. If this is a UE triggered PDU Session Release, this will be specified in the test case together with the sending of a PDU SESSION RELEASE REQUEST by the UE.

#### 4.9.21.2.2 Procedure sequence

**Table 4.9.21.2.2-1: Procedure for PDU Session Release**

| St | Procedure   | Message Sequence |  |
|----|---|------------------|--|
|    |   | U – S            | Message  |
| 1  | The SS transmits an <i>RRCReconfiguration</i> message and a PDU SESSION RELEASE COMMAND | <--              | NR RRC: <i>RRCReconfiguration</i><br>5GMM: DL NAS TRANSPORT<br>5GSM: PDU SESSION RELEASE COMMAND     |
| 1A | The UE transmits a <i>RRCReconfigurationComplete</i>                                    | -                | NR RRC: <i>RRCReconfigurationComplete</i>  |
| 2  | The UE transmits a PDU SESSION RELEASE COMPLETE message                                 | -->              | NR RRC: <i>ULInformationTransfer</i><br>5GMM: UL NAS TRANSPORT<br>5GSM: PDU SESSION RELEASE COMPLETE |

### 4.9.21.3 Specific message contents

The NAS message contents will be as specified in the test case.

**Table 4.9.21.3-1: RRCReconfiguration (step 1, Table 4.9.21.2.2-1)**

| Derivation Path: Table 4.6.1-13.  |   |         |           |
|---|---|---------|-----------|
| Information Element   | Value/remark  | Comment | Condition |
| RRCReconfiguration ::= SEQUENCE {   |   |         |           |
| criticalExtensions CHOICE {   |   |         |           |
| rrcReconfiguration SEQUENCE {   |   |         |           |
| radioBearerConfig SEQUENCE {  |   |         |           |
| drb-ToReleaseList SEQUENCE (SIZE (1..maxDRB)) OF DRB-Identity {                   | 1 entry   |         |           |
| DRB-Identity[1]   | DRB-Identity linked to the PDU Session to be released |         |           |
| }   |   |         |           |
| }   |   |         |           |
| nonCriticalExtension SEQUENCE {   |   |         |           |
| masterCellGroup SEQUENCE {  |   |         |           |
| rlc-BearerToReleaseList SEQUENCE (SIZE (1..maxLC-ID)) OF LogicalChannelIdentity { | 1 entry   |         |           |
| logicalChannelIdentity[1]   | Same value as drb-Identity[1] above                   |         |           |
| }   |   |         |           |
| }   |   |         |           |
| }   |   |         |           |
| }   |   |         |           |
| }   |   |         |           |
| }   |   |         |           |

## 5 Test environments for RF test

### 5.0 General

#### 5.0.1 Single PDU configuration for RF testing

For RF and performance test case execution on 5G SA UE's defined in TS 38.521-1 [14], TS 38.521-2 [15], TS 38.521-4 [17], IMS shall not be considered and UE's shall be able use RRC (IDLE, CONNECTED) preambles defined in TS 38.508-1 clause 4.5. Before entering RRC\_CONNECTED or RRC\_IDLE state during initial conditions or test procedure, it is recommended that UE is pre-configured with only 1 PDU (non-IMS) along with appropriate settings to ensure UE operates and stays on NR cell.

For EN-DC settings the corresponding requirement holds that IMS shall not be considered and it is recommended that UE is pre-configured with only 1PDU/1 PDN.

### 5.1 Requirements of test equipment

#### 5.1.1 Requirements for transmission and reception tests

##### 5.1.1.1 Requirements common for conducted and OTA tests

No common RF test environment requirements are specified in addition to the common requirements described in clause 4.2.

##### 5.1.1.2 Requirements for conducted tests

No common RF test environment requirements are specified in addition to the common requirements described in clause 4.2.

### 5.1.1.3 Requirements for OTA tests

Editor's Note:

- The UE pre-configuration mentioned below to disable UL Tx diversity schemes shall be voided once a test methodology solution to minimize spectral flatness artefacts between TE and UE over all test points is defined.
- The permitted test methods for transmission and reception test are DFF, DFF with simplification for centre of beam measurements, IFF and NFTF and are described in TR 38.810[24]. The minimum requirements for each test setup are described in the following clauses.
- For conformance testing using the OTA test environment, the UE under test shall be pre-configured with UL Tx diversity schemes disabled to account for single polarization System Simulator (SS) in the test environment. The UE under test may transmit with dual polarization.

#### 5.1.1.3.1 DFF and DFF with simplification for centre of beam measurements

- Far-field measurement system in an anechoic chamber.
  - The minimum far-field distance R for a traditional far field anechoic chamber can be calculated based on the following equation:  $R > \frac{2D^2}{\lambda}$ , where D is the diameter of the smallest sphere that encloses the radiating parts of the DUT.
- A positioning system such that the angle between the dual-polarized measurement antenna and the DUT has at least two axes of freedom and maintains a polarization reference.
- For DFF(without simplification), a positioning system such that the angle between the link antenna and the DUT has at least two axes of freedom and maintains a polarization reference; this positioning system for the link antenna is in addition to the positioning system for the measurement antenna and provides for an angular relationship independently controllable from the measurement antenna.
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1 UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.
- Maximum permitted test system uncertainty is specified in Annex F in 38.521-2[15].

#### 5.1.1.3.2 IFF

- Indirect Far field of Compact Antenna Test Range(CATR) with quiet zone diameter at least D.
- The CATR system does not require a measurement distance of  $R > \frac{2D^2}{\lambda}$  to achieve a plane wave as in a standard far field range.
- A positioning system such that the angle between the dual-polarized measurement antenna and the DUT has at least two axes of freedom and maintains a polarization reference.
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.
- Maximum permitted test system uncertainty is specified in Annex F in 38.521-2[15].

### 5.1.1.3.3 NFTF

- Radiated Near Field UE beam pattern are measured and based on the NFTF mathematical transform, the final metric such as EIRP is the same as the metric for the DFF setup
- A positioning system such as the angle between the dual-polarized measurement/link antenna and the DUT has at least two axes of freedom and maintains a polarization reference
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.
- Maximum permitted test system uncertainty is specified in Annex F in 38.521-2[15].

## 5.1.2 Requirements for performance tests

### 5.1.2.1 Void

### 5.1.2.2 Void

### 5.1.2.3 Requirements for OTA test method

Editor's Note: This subclause is intended to describe the test equipment requirements which are specific to OTA test environment for performance tests.

- The UE pre-configuration mentioned below to disable UL Tx diversity schemes shall be voided once a test methodology solution to minimize spectral flatness artefacts between TE and UE over all test points is defined.
- For conformance testing using the OTA test environment, the UE under test shall be pre-configured with UL Tx diversity schemes disabled to account for single polarization System Simulator (SS) in the test environment. The UE under test may transmit with dual polarization.

## 5.2 Reference test conditions

### 5.2.1 Signal levels

#### 5.2.1.1 Signal Levels for conducted testing

For NR FR1 cell, the downlink power settings are specified in TS 38.521-1[14] and TS 38.521-3[16].

The uncertainty value is specified in TS 38.521-1 [14] Annex F or in TS 38.521-2 [15] Annex F.

#### 5.2.1.2 Signal Levels for OTA testing

##### 5.2.1.2.1 Downlink Signal Levels

For E-UTRA cell in EN-DC with FR2 NR, the downlink power settings are specified in clause 4.7 of TS 38.521-3[16].

For FR2 NR cell, the downlink power settings are specified in Annex C.0 of TS 38.521-2[15] and Annex C.0 of TS 38.521-3[16].

## 5.3 Void

Editor's Note: Reserved for future use.

## 5.4 Default NG-RAN RRC message and information elements contents

### 5.4.1 Radio resource control information elements

As defined in clause 4.6.3 with the following exceptions:

For Tx test cases in which Power Class 3 UEs verifying Power Class 3 requirements, refer to Table 5.4.1-1; For Tx test cases in which Power Class 2 UEs verifying Power Class 2 requirements, refer to Table 5.4.1-2; And for Tx test cases in which Power Class 2 UEs verifying Power Class 3 requirements, refer to Table 5.4.1-3.

**Table 5.4.1-1: P-Max-PC3**

|   |
|---|
| Derivation Path: Table 4.6.3-89 with condition FR1_RF_PC3 |
|---|

**Table 5.4.1-2: P-Max-PC2**

|   |
|---|
| Derivation Path: Table 4.6.3-89 with condition FR1_RF_PC2 |
|---|

**Table 5.4.1-3: P-Max-PC2\_Testing\_PC3**

|   |
|---|
| Derivation Path: Table 4.6.3-89 with condition FR1_RF_PC2_Testing_PC3 |
|---|

**Table 5.4.1-4: PUSCH-Config**

| Derivation Path: Clause 4.6.3 Table 4.6.3-118 |                 |         |   |
|---|-----------------|---------|---|
| Information Element                           | Value/remark    | Comment | Condition   |
| PUSCH-Config ::= SEQUENCE {                   |                 |         |   |
| maxRank                                       | 2               |         | 2TX_UL_MIMO   |
|   | 1               |         | ULFPTx_Mode1 or<br>ULFPTx_Mode2 or<br>ULFPTx_ModeFull |
| ul-FullPowerTransmission-r16                  | Not present     |         | 2TX_UL_MIMO   |
|   | fullpowerMode 1 |         | ULFPTx_Mode1  |
|   | fullpowerMode 2 |         | ULFPTx_Mode2  |
|   | fullpower       |         | ULFPTx_ModeFull                                       |
| }   |                 |         |   |

| Condition       | Explanation   |
|-----------------|---|
| 2TX_UL_MIMO     | UL-MIMO test cases with 2 Tx antenna ports  |
| ULFPTx_Mode1    | UL-MIMO test cases with UEs supporting UL full power transmission Mode-1          |
| ULFPTx_Mode2    | UL-MIMO test cases with UEs supporting UL full power transmission Mode-2          |
| ULFPTx_ModeFull | UL-MIMO test cases with UEs supporting UL full power transmission Mode-full power |

## CSI-RS for Tracking

**Table 5.4.1-4: CSI-RS-ResourceMapping for TRS**

| Derivation Path: Table 4.6.3-45       |                         |  |  |
|---------------------------------------|-------------------------|--|--|
| Information Element                   | Value/remark            | Comment  | Condition  |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                         |  |  |
| frequencyDomainAllocation CHOICE {    |                         |  |  |
| row1                                  | 1000                    |  | TRS  |
| }                                     |                         |  |  |
| firstOFDMSymbolInTimeDomain           | 6<br>10<br>8<br>12      | $l_0 = 6$ for CSI-RS resource 1 and 3<br>$l_0 = 10$ for CSI-RS resource 2 and 4<br>$l_0 = 8$ for CSI-RS resource 1<br>$l_0 = 12$ for CSI-RS resource 2 | TRS AND FR1<br>TRS AND FR1<br>TRS AND FR2<br>TRS AND FR2 |
| nrofPorts                             | p1                      |  | TRS  |
| Cdm-Type                              | noCDM                   |  | TRS  |
| Density CHOICE{                       |                         |  |  |
| three                                 | Null                    |  | TRS  |
| }                                     |                         |  |  |
| freqBand                              | CSI-FrequencyOccupation |  | TRS  |
| }                                     |                         |  |  |

| Condition | Explanation               |
|-----------|---------------------------|
| TRS       | Tracking-Reference Signal |

**Table 5.4.1-5: CSI-ResourcePeriodicityAndOffset for TRS**

| Derivation Path: Table 4.6.3-43               |              |  |  |
|---|--------------|--|--|
| Information Element                           | Value/remark | Comment  | Condition                              |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |              |  |  |
| slots10                                       | 0<br>1       | SCS 15kHz, CSI-RS resource 1 and 2<br>SCS 15kHz, CSI-RS resource 3 and 4           | TRS AND FR1_15kHz<br>TRS AND FR1_15kHz |
| Slots20                                       | 1<br>2       | SCS 30kHz, CSI-RS resource 1 and 2<br>SCS 30kHz, CSI-RS resource 3 and 4           | TRS AND FR1_30kHz<br>TRS AND FR1_30kHz |
| Slots40                                       | 2<br>3       | SCS 60kHz, FR1, CSI-RS resource 1 and 2<br>SCS 60kHz, FR1, CSI-RS resource 3 and 4 | TRS AND FR1_60kHz<br>TRS AND FR1_60kHz |
| Slots80                                       | 40           | SCS 60kHz, FR2, CSI-RS resource 1 and 2  | TRS AND FR2_60kHz                      |
| Slots160                                      | 80           | SCS 120kHz, CSI-RS resource 1 and 2  | TRS AND FR2_120kHz                     |
| }   |              |  |  |

| Condition  | Explanation                                       |
|------------|---|
| FR1_15kHz  | FR1 is used under the test. SCS is set to 15kHz.  |
| FR1_30kHz  | FR1 is used under the test. SCS is set to 30kHz.  |
| FR1_60kHz  | FR1 is used under the test. SCS is set to 60kHz.  |
| FR2_60kHz  | FR2 is used under the test. SCS is set to 60kHz.  |
| FR2_120kHz | FR2 is used under the test. SCS is set to 120kHz. |
| TRS        | Tracking-Reference Signal                         |

**Table 5.4.1-6: CSI-MeasConfig for TRS**

| Derivation Path: TS 38.508-1 Table 4.6.3-38   |   |   |           |
|---|---|---|-----------|
| Information Element   | Value/remark  | Comment   | Condition |
| CSI-MeasConfig ::= SEQUENCE {<br>nzp-CSI-RS-ResourceToAddModList SEQUENCE<br>(SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-<br>CSI-RS-Resource {<br>NZP-CSI-RS-Resource[1]<br>NZP-CSI-RS-Resource[2]<br>NZP-CSI-RS-Resource[3]<br>NZP-CSI-RS-Resource[4]<br>}<br>nzp-CSI-RS-ResourceSetToAddModList<br>SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-<br>ResourceSets)) OF NZP-CSI-RS-ResourceSet {<br>NZP-CSI-RS-ResourceSet[1]<br>}<br>csi-IM-ResourceToAddModList<br>csi-IM-ResourceSetToAddModList<br>csi-SSB-ResourceSetToAddModList<br>csi-ResourceConfigToAddModList SEQUENCE<br>(SIZE (1..maxNrofCSI-ResourceConfigurations)) OF<br>CSI-ResourceConfig {<br>CSI-ResourceConfig[1]<br>}<br>reportTriggerSize<br>aperiodicTriggerStateList SetupRelease<br>}<br>} | 2 entries in case of FR2<br>4 entries in case of FR1<br><br>NZP-CSI-RS-Resource for TRS (1)<br><br>NZP-CSI-RS-Resource for TRS (2)<br><br>NZP-CSI-RS-Resource for TRS (3)<br><br>NZP-CSI-RS-Resource for TRS (4)<br><br>1 entry<br><br>NZP-CSI-RS-ResourceSet for TRS<br><br>Not present<br><br>Not present<br><br>Not present<br><br>1 entry<br><br>CSI-ResourceConfig for TRS<br><br>Not present<br><br>Not present | 2 entries in case of FR2<br>4 entries in case of FR1<br><br>entry 1<br>CSI-RS resource 1<br><br>entry 2<br>CSI-RS resource 2<br><br>entry 3<br>CSI-RS resource 3<br><br>entry 4<br>CSI-RS resource 4<br><br>entry 1 | FR1       |

**Table 5.4.1-7: NZP-CSI-RS-Resource for TRS**

| Derivation Path: 38.508-1 Table 4.6.3-85 |   |  |  |
|--|---|--|--|
| Information Element                      | Value/remark                              | Comment  | Condition                                    |
| NZP-CSI-RS-Resource ::= SEQUENCE {       |   |  |  |
| NZP-CSI-RS-Resourceld                    | 0<br>1<br>2<br>3                          | CSI-RS resource 1<br>CSI-RS resource 2<br>CSI-RS resource 3<br>CSI-RS resource 4 |  |
| CSI-RS-ResourceMapping                   | CSI-RS-ResourceMapping for TRS            |  | Content conditioned by the CSI-RS resource # |
| powerControlOffset                       | 0   |  |  |
| powerControlOffsetSS                     | db0                                       |  |  |
| scramblingID                             | ScramblingId                              |  |  |
| periodicityAndOffset                     | CSI-ResourcePeriodicityAnd Offset for TRS |  | Content conditioned by the CSI-RS resource # |
| qcl-InfoPeriodicCSI-RS                   | TCI-Stateld                               |  |  |
| }  |   |  |  |

**Table 5.4.1-8: NZP-CSI-RS-ResourceSet for TRS**

| Derivation Path: Table 4.6.3-87  |  |                              |           |
|--|--|------------------------------|-----------|
| Information Element  | Value/remark   | Comment                      | Condition |
| NZP-CSI-RS-ResourceSet ::= SEQUENCE {  |  |                              |           |
| nzp_CSI_ResourceSetId  | 0  |                              |           |
| nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-Resourceld { | 2 entries in case of FR2<br>4 entries in case of FR1 |                              |           |
| NZP-CSI-RS-Resourceld[1]   | 0  | entry 1<br>CSI-RS resource 1 |           |
| NZP-CSI-RS-Resourceld[2]   | 1  | entry 2<br>CSI-RS resource 2 |           |
| NZP-CSI-RS-Resourceld[3]   | 2  | entry 3<br>CSI-RS resource 3 | FR1       |
| NZP-CSI-RS-Resourceld[4]   | 3  | entry 4<br>CSI-RS resource 4 | FR1       |
| }  |  |                              |           |
| repetition   | off  |                              |           |
| aperiodicTriggeringOffset  | Not present  |                              |           |
| trs_Info   | true   |                              |           |
| }  |  |                              |           |

**Table 5.4.1-9: CSI-ResourceConfig for TRS**

| Derivation Path: TS 38.508-1 Table 4.6.3-41   |                      |         |           |
|---|----------------------|---------|-----------|
| Information Element   | Value/remark         | Comment | Condition |
| CSI-ResourceConfig ::= SEQUENCE {   |                      |         |           |
| csi-ResourceConfigId  | CSI-ResourceConfigId |         |           |
| csi-RS-ResourceSetList CHOICE {   |                      |         |           |
| nzp-CSI-RS-SSB SEQUENCE {   |                      |         |           |
| nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId { | 1 entry              |         |           |
| NZP-CSI-RS-ResourceSetId[1]   | 0                    | entry 1 |           |
| }   |                      |         |           |
| csi-SSB-ResourceSetList   | Not present          |         |           |
| }   |                      |         |           |
| }   |                      |         |           |
| bwp-Id  | BWP-Id               |         |           |
| resourceType  | periodic             |         |           |
| }   |                      |         |           |

## PDCCH Configuration

### PDCCH-config

**Table 5.4.1-16: PDCCH ControlResourceSet**

| Derivation Path: Table 4.6.3-28 |  |  |                |
|---------------------------------|--|--|----------------|
| Information Element             | Value/remark   | Comment  | Condition      |
| frequencyDomainResources        | 11111111 00000000<br>00000000 00000000<br>00000000 00000 | CORESET to use the least significant 48 RBs of the BWP | RFACS AND AL8  |
|                                 | 11111111 11111111<br>00000000 00000000<br>00000000 00000 | CORESET to use the least significant 96 RBs of the BWP | RFACS AND AL16 |

| Condition | Explanation                                     |
|-----------|---|
| RFACS     | Used in RF Adjacent Channel Selectivity testing |
| AL8       | PDCCH aggregationLevel 8 is configured          |
| AL16      | PDCCH aggregationLevel 16 is configured         |

**Table 5.4.1-17: PDCCH Search Space**

| Derivation Path: Table 4.6.3-162 |              |         |           |
|----------------------------------|--------------|---------|-----------|
| Information Element              | Value/remark | Comment | Condition |
| nrofCandidates SEQUENCE {        |              |         |           |
| aggregationLevel1                | n2           |         | RFACS     |
| aggregationLevel8                | n2           |         | RFACS     |
| aggregationLevel16               | n2           |         | RFACS     |
| }                                |              |         |           |
| }                                |              |         |           |

| Condition | Explanation                                     |
|-----------|---|
| RFACS     | Used in RF Adjacent Channel Selectivity testing |

## 5.4.2 Radio resource control information elements for Demodulation Performance and CSI reporting tests

As defined in clause 4.6.3 with the following exceptions:

**Table 5.4.2-1: Void**

**Table 5.4.2-2: Void**

**Table 5.4.2-3a: Void**

**Table 5.4.2-3: Void**

**Table 5.4.2-4: Void**

**Table 5.4.2-4A: Void**

**Table 5.4.2-5 to -20: Void**

### 5.4.2.0 Parameters common to all Demod and CSI tests

#### Physical layer parameters

**Table 5.4.2.0-1: Physical layer parameters for DCI format 1\_1**

| Derivation Path: Table 4.3.6.1.2.2-1    |   |                 |               |
|---|---|-----------------|---------------|
| Parameter                               | Value   | Value in binary | Condition     |
| PUCCH resource indicator                | <i>PUCCH-ResourceId[1]</i> = 0 in pucch-ResourceSetID[1] or<br><i>PUCCH-ResourceId[1]</i> = 8 in pucch-ResourceSetID[2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213) | '000'B          | FR1           |
|   | <i>PUCCH-ResourceId[5]</i> = 12 in pucch-ResourceSetID[2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)   | '100'B          | FR2_SCS60kHz  |
|   | <i>PUCCH-ResourceId[7]</i> = 14 in pucch-ResourceSetID[2] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213)   | '110'B          | FR2_SCS120kHz |
| PDSCH-to-HARQ_feedback timing indicator | K <sub>1</sub> slots as specified in 9.2.3 in TS 38.213<br>Specific to each TDD UL-DL pattern and as defined in Annex A.1.2, A.1.3 of TS 38.521-4   |                 |               |

## Common Serving Parameters

## ServingCellConfigCommon

**Table 5.4.2.0-2: ServingCellConfigCommon**

| Derivation Path: Table 4.6.3-168       |   |         |  |
|--|---|---------|--|
| Information Element                    | Value/remark                                | Comment | Condition  |
| ServingCellConfigCommon ::= SEQUENCE { |   |         |  |
| physCellId                             | PhysCellId                                  |         |  |
| downlinkConfigCommon                   | DownlinkConfigCommon                        |         |  |
| ssb-PositionsInBurst CHOICE {          |   |         |  |
| shortBitmap                            | 1000  |         | FR1<br>AND<br>SSB#0<br>AND<br>(2.4GHz<FREQ<=3GHz<br>AND<br>(FDD<br>OR<br>(TDD AND SCS15))<br>OR<br>FREQ<=2.4GHz) |
| mediumBitmap                           | 10000000                                    |         | FR1<br>AND<br>SSB#0<br>AND<br>(2.4GHz<FREQ<=3GHz<br>AND<br>(TDD AND SCS30)<br>OR FREQ>3GHz)                      |
| }                                      |   |         |  |
| ssb-periodicityServingCell             | ms20  |         |  |
| dmrs-TypeA-Position                    | pos2  |         |  |
| subcarrierSpacing                      | SubcarrierSpacing according to test case id |         |  |
| tdd-UL-DL-ConfigurationCommon          | TDD-UL-DL-ConfigCommon                      |         |  |
|  | Not present                                 |         | FR1.30-1A<br>FR2.120-1A<br>FR1.FDD   |
| ss-PBCH-BlockPower                     | 0   |         |  |
| }                                      |   |         |  |

| Condition         | Explanation  |
|-------------------|--|
| FREQ<=2.4GHz      | Frequency range <= 2.4GHz  |
| 2.4GHz<FREQ<=3GHz | Frequency range > 2.4GHz and <= 3GHz                                 |
| FREQ>3GHz         | Frequency range > 3GHz   |
| FR1.30-1A         | TDD UL-DL pattern FR1.30-1A is used. Ref Annex A.1.2 of TS 38.521-4  |
| FR2.120-1A        | TDD UL-DL pattern FR2.120-1A is used. Ref Annex A.1.3 of TS 38.521-4 |
| SSB#N             | Cell configured with SSB-Index set to N as defined in Table 4.4.2-2  |

## TDD-UL-DL-Config

**Table 5.4.2.0-3: TDD-UL-DL-Config**

| Derivation Path: Table 4.6.3-192      |   |         |  |
|---------------------------------------|---|---------|--|
| Information Element                   | Value/remark  | Comment | Condition  |
| TDD-UL-DL-ConfigCommon ::= SEQUENCE { |   |         |  |
| referenceSubcarrierSpacing            | SubcarrierSpacing                                     |         |  |
| pattern1 SEQUENCE {                   |   |         |  |
| dl-UL-TransmissionPeriodicity         | ms5<br>ms2p5<br>ms3<br>ms2<br>ms1<br>ms0p625<br>ms0p5 |         | FR1.15-1,<br>FR1.30-1<br>FR1.30-2,<br>FR1.30-3<br>FR1.30-4<br>FR1.30-5<br>FR1.30-6<br>FR2.60-1<br>FR2.120.1<br>FR2.120.2 |
| nrofDownlinkSlots                     | 7   |         | FR1.30-1   |
|                                       | 3   |         | FR1.15-1<br>FR1.30-2<br>FR1.30-3<br>FR1.30-4<br>FR2.120.1  |
|                                       | 1   |         | FR1.30-5<br>FR1.30-6   |
|                                       | 2   |         | FR2.60-1<br>FR2.120.2  |
| nrofDownlinkSymbols                   | 6   |         | FR1.30-1<br>FR1.30-4   |
|                                       | 10  |         | FR1.15-1<br>FR1.30-2<br>FR1.30-3<br>FR1.30-6<br>FR2.120.1  |
|                                       | 12  |         | FR1.30-5   |
|                                       | 11  |         | FR2.60-1<br>FR2.120.2  |
| nrofUplinkSlots                       | 2   |         | FR1.30-1<br>FR1.30-4<br>FR1.30-5   |
|                                       | 1   |         | FR1.15-1<br>FR1.30-2<br>FR1.30-3<br>FR2.60-1<br>FR2.120.1<br>FR2.120.2   |
|                                       | 0   |         | FR1.30-6   |
| nrofUplinkSymbols                     | 4   |         | FR1.30-1<br>FR1.30-4<br>FR1.30-5   |
|                                       | 0   |         | FR1.30-6<br>FR2.60-1<br>FR2.120.2  |
|                                       | 2   |         | FR1.15-1<br>FR1.30-2<br>FR1.30-3<br>FR2.60-1<br>FR2.120.1<br>FR2.120.2   |
| }                                     |   |         |  |
| pattern2                              | Not present   |         | FR1.15-1,<br>FR1.30-1<br>FR1.30-2  |

|                               |       |  |  |
|-------------------------------|-------|--|--|
|                               |       |  | FR1.30-5<br>FR2.60-1<br>FR2.120.1<br>FR2.120.2 |
| pattern2 SEQUENCE {           |       |  |  |
| dl-UL-TransmissionPeriodicity | ms2p5 |  | FR1.30-3                                       |
|                               | ms2   |  | FR1.30-4                                       |
|                               | ms1   |  | FR1.30-6                                       |
| nrofDownlinkSlots             | 2     |  | FR1.30-3                                       |
|                               | 4     |  | FR1.30-4                                       |
|                               | 0     |  | FR1.30-6                                       |
| nrofDownlinkSymbols           | 10    |  | FR1.30-3                                       |
|                               | 0     |  | FR1.30-4                                       |
|                               | 12    |  | FR1.30-6                                       |
| nrofUplinkSlots               | 2     |  | FR1.30-3                                       |
|                               | 0     |  | FR1.30-4                                       |
|                               | 1     |  | FR1.30-6                                       |
| nrofUplinkSymbols             | 2     |  | FR1.30-3                                       |
|                               | 0     |  | FR1.30-4<br>FR1.30-6                           |
| }                             |       |  |  |
| }                             |       |  |  |

| Condition | Explanation   |
|-----------|---|
| FR1.15-1  | TDD UL-DL pattern FR1.15-1 is used. Ref Annex A.1.2 of TS 38.521-4  |
| FR1.30-1  | TDD UL-DL pattern FR1.30-1 is used. Ref Annex A.1.2 of TS 38.521-4  |
| FR1.30-2  | TDD UL-DL pattern FR1.30-2 is used. Ref Annex A.1.2 of TS 38.521-4  |
| FR1.30-3  | TDD UL-DL pattern FR1.30-3 is used. Ref Annex A.1.2 of TS 38.521-4  |
| FR1.30-4  | TDD UL-DL pattern FR1.30-4 is used. Ref Annex A.1.2 of TS 38.521-4  |
| FR1.30-5  | TDD UL-DL pattern FR1.30-5 is used. Ref Annex A.1.2 of TS 38.521-4  |
| FR1.30-6  | TDD UL-DL pattern FR1.30-6 is used. Ref Annex A.1.2 of TS 38.521-4  |
| FR2.60-1  | TDD UL-DL pattern FR2.60-1 is used. Ref Annex A.1.3 of TS 38.521-4  |
| FR2.120-1 | TDD UL-DL pattern FR2.120-1 is used. Ref Annex A.1.3 of TS 38.521-4 |
| FR2.120-2 | TDD UL-DL pattern FR2.120-2 is used. Ref Annex A.1.3 of TS 38.521-4 |

## PDCCH Configuration

## PDCCH-ConfigCommon

**Table 5.4.2.0-4: PDCCH-ConfigCommon**

| Derivation Path: Table 4.6.3-96                                  |                                |                                    |   |
|--|--------------------------------|------------------------------------|---|
| Information Element  | Value/remark                   | Comment                            | Condition   |
| PDCCH-ConfigCommon ::= SEQUENCE {                                |                                |                                    |   |
| searchSpaceZero  | 4                              |                                    | FDD<br>FR1.30-1<br>FR1.30-2<br>FR1.30-3<br>FR1.30-4 |
|  | 2                              |                                    | FR1.30-5<br>FR1.30-6                                |
| commonSearchSpaceList SEQUENCE (SIZE (1..4))<br>OF SearchSpace { | 1 entry                        | 1 search space for both SA and NSA |   |
| SearchSpace [1]  | SearchSpace with condition CSS | entry 1                            |   |
| }  |                                |                                    |   |
| searchSpaceOtherSystemInformation                                | Not present                    |                                    |   |
| }  |                                |                                    |   |

| Condition | Explanation        |
|-----------|--------------------|
| CSS       | Common SearchSpace |

## ServingCellConfig

**Table 5.4.2.0-5: ServingCellConfig**

| Derivation Path: Table 4.6.3-167 |                |         |           |
|----------------------------------|----------------|---------|-----------|
| Information Element              | Value/remark   | Comment | Condition |
| ServingCellConfig ::= SEQUENCE { |                |         |           |
| csi-MeasConfig CHOICE {          |                |         |           |
| setup                            | csi-MeasConfig |         |           |
| }                                |                |         |           |

## PDCCH-config

**Table 5.4.2.0-6: PDCCH-ControlResourceSet**

| Derivation Path: Table 4.6.3-28   |   |                                   |                                    |
|---|---|-----------------------------------|------------------------------------|
| Information Element   | Value/remark  | Comment                           | Condition                          |
| ControlResourceSet ::= SEQUENCE {   |   |                                   |                                    |
| controlResourceSetId  | ControlResourceSetId  |                                   |                                    |
| frequencyDomainResources  | Table 5.2-2 for tested channel bandwidth and subcarrier spacing |                                   |                                    |
| Duration  | 2   | SearchSpace duration of 2 symbols | DEMOD_FR 1, CSI_FR1, CSI_FR2       |
|   | 1   | SearchSpace duration of 1 symbols | DEMOD_FR 2, PDCCH_FR 1, PDCCH_FR 2 |
| cce-REG-MappingType CHOICE {  |   |                                   |                                    |
| nonInterleaved  | Null  |                                   |                                    |
| }   |   |                                   |                                    |
| precoderGranularity   | sameAsREG-bundle  |                                   |                                    |
| tci-StatesPDCCH-ToAddList SEQUENCE(SIZE(1..maxNrofTCI-StatesPDCCH)) OF TCI-StatId { | 1 entry   |                                   |                                    |
| TCI-StatId[1]   | 0   | entry 1<br>TCI State #0           |                                    |
|   | 1   | TCI State #1                      |                                    |
| }   |   |                                   |                                    |
| }   |   |                                   |                                    |

| Condition | Explanation           |
|-----------|-----------------------|
| DEMOD_FR1 | DEMOD testing in FR1. |
| DEMOD_FR2 | DEMOD testing in FR2. |
| PDCCH_FR1 | PDCCH testing in FR1  |
| PDCCH_FR2 | PDCCH testing in FR2  |
| CSI_FR1   | CSI testing in FR1    |
| CSI_FR2   | CSI testing in FR2    |

**Table 5.4.2.0-7: PDCCH Search Space**

| Derivation Path: Table 4.6.3-162            |                    |                   |           |
|---|--------------------|-------------------|-----------|
| Information Element                         | Value/remark       | Comment           | Condition |
| SearchSpace ::= SEQUENCE {                  |                    |                   |           |
| monitoringSlotPeriodicityAndOffset CHOICE { |                    |                   |           |
| sl1   | NULL               |                   |           |
| }   |                    |                   |           |
| monitoringSymbolsWithinSlot                 | 1000000000000000   | Starting symbol 0 |           |
| nrofCandidates SEQUENCE {                   |                    |                   |           |
| aggregationLevel1                           | n0                 |                   |           |
| aggregationLevel2                           | n0                 |                   |           |
| aggregationLevel4                           | n0                 |                   |           |
| aggregationLevel8                           | n1                 | AL8               |           |
| aggregationLevel16                          | n0                 |                   |           |
| }   |                    |                   |           |
| searchSpaceType CHOICE {                    |                    |                   |           |
| common SEQUENCE {                           |                    |                   |           |
| ue-Specific SEQUENCE {                      |                    |                   |           |
| dci-Formats                                 | formats0-1-And-1-1 | DCI Format 1_1    |           |
| }   |                    |                   |           |
| }   |                    |                   |           |
| }   |                    |                   |           |

## NZP-CSI-RS for Tracking

## NZP-CSI-RS-Resource

**Table 5.4.2.0-8: NZP-CSI-RS-Resource for TRS**

| Derivation Path: Table 4.6.3-85    |  |  |           |
|------------------------------------|--|--|-----------|
| Information Element                | Value/remark                                     | Comment  | Condition |
| NZP-CSI-RS-Resource ::= SEQUENCE { |  |  |           |
| nzp-CSI-RS-Resourceld              | 0<br>1<br>2<br>3                                 | CSI-RS resource 1<br>CSI-RS resource 2<br>CSI-RS resource 3<br>CSI-RS resource 4 |           |
| resourceMapping                    | CSI-RS-<br>ResourceMapping for<br>TRS            |  |           |
| powerControlOffset                 | 0  |  |           |
| periodicityAndOffset               | CSI-<br>ResourcePeriodicityAnd<br>Offset for TRS |  |           |
| qcl-InfoPeriodicCSI-RS             | TCI-Stateld 0                                    |  |           |
| }                                  |  |  |           |

## CSI-RS-ResourceMapping

**Table 5.4.2.0-9: CSI-RS-ResourceMapping for TRS**

| Derivation Path: Table 4.6.3-45       |                             |   |           |
|---------------------------------------|-----------------------------|---|-----------|
| Information Element                   | Value/remark                | Comment   | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                             |   |           |
| frequencyDomainAllocation CHOICE {    |                             |   |           |
| row1                                  | 0001                        | $k_0=0$ for CSI-RS<br>resource 1,2,3,4  | TRS       |
| }                                     |                             |   |           |
| firstOFDMSymbolInTimeDomain           | 6<br>10                     | $l_0 = 6$ for CSI-RS<br>resource 1 and 3<br>$l_0 = 10$ for CSI-RS<br>resource 2 and 4 | TRS       |
| nrofPorts                             | p1                          | 1 for CSI-RS<br>resource 1,2,3,4  | TRS       |
| Cdm-Type                              | noCDM                       |   | TRS       |
| Density CHOICE{                       |                             |   |           |
| three                                 | Null                        |   | TRS       |
| }                                     |                             |   |           |
| freqBand                              | CSI-<br>FrequencyOccupation |   | TRS       |
| }                                     |                             |   |           |

## CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.0-10: CSI-ResourcePeriodicityAndOffset for TRS**

| Derivation Path: Table 4.6.3-43               |              |   |             |
|---|--------------|---|-------------|
| Information Element                           | Value/remark | Comment   | Condition   |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |              |   |             |
| slots20                                       | 10           | Periodicity 20 slots and offset 10 for CSI-RS resource 1 and 2  | SCS 15kHz   |
| slots20                                       | 11           | Periodicity 20 slots and offset 11 for CSI-RS resource 3 and 4  | SCS 15 kHz  |
| Slots40                                       | 20           | Periodicity 40 slots and offset 20 for CSI-RS resource 1 and 2  | SCS 30 kHz  |
| Slots40                                       | 21           | Periodicity 40 slots and offset 21 for CSI-RS resource 3 and 4  | SCS 30 kHz  |
| Slots80                                       | 40           | Periodicity 80 slots and offset 40 for CSI-RS resource 1 and 2  | SCS 60 kHz  |
| Slots80                                       | 41           | Periodicity 80 slots and offset 41 for CSI-RS resource 3 and 4  | SCS 60 kHz  |
| Slots160                                      | 80           | Periodicity 160 slots and offset 80 for CSI-RS resource 1 and 2 | SCS 120 kHz |
| Slots160                                      | 81           | Periodicity 160 slots and offset 81 for CSI-RS resource 3 and 4 | SCS 120 kHz |
| }   |              |   |             |

## CSI-FrequencyOccupation

**Table 5.4.2.0-11: CSI-FrequencyOccupation for TRS**

| Derivation Path: Table 4.6.3-33        |              |                        |           |
|--|--------------|------------------------|-----------|
| Information Element                    | Value/remark | Comment                | Condition |
| CSI-FrequencyOccupation ::= SEQUENCE { |              |                        |           |
| nrofRBs                                | 52           | BW 10 MHz SCS 15kHz    | TRS       |
|  | 52           | BW 20 MHz SCS 30kHz    | TRS       |
|  | 108          | BW 40 MHz SCS 30kHz    | TRS       |
|  | 68           | BW 100 MHz SCS 120 kHz | TRS       |
| }                                      |              |                        |           |

## NZP-CSI-RS-ResourceSet

**Table 5.4.2.0-12: NZP-CSI-RS-ResourceSet for TRS**

| Derivation Path: Table 4.6.3-87  |              |                              |           |
|--|--------------|------------------------------|-----------|
| Information Element  | Value/remark | Comment                      | Condition |
| NZP-CSI-RS-ResourceSet ::= SEQUENCE {  |              |                              |           |
| nzp_CSI_ResourceSetId  | 0            |                              |           |
| nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-Resourceld { | 4 entries    |                              | FR1, FR2  |
| NZP-CSI-RS-Resourceld[1]   | 0            | entry 1<br>CSI-RS resource 1 |           |
| NZP-CSI-RS-Resourceld[2]   | 1            | entry 2<br>CSI-RS resource 2 |           |
| NZP-CSI-RS-Resourceld[3]   | 2            | entry 3<br>CSI-RS resource 3 |           |
| NZP-CSI-RS-Resourceld[4]   | 3            | entry 4<br>CSI-RS resource 4 |           |
| }  |              |                              |           |
| repetition   | off          |                              |           |
| aperiodicTriggeringOffset  | Not present  |                              |           |
| trs_Info   | true         |                              |           |
| }  |              |                              |           |

## CSI-ResourceConfig

**Table 5.4.2.0-13: CSI-ResourceConfig for TRS**

| Derivation Path: Table 4.6.3-41   |                      |         |           |
|---|----------------------|---------|-----------|
| Information Element   | Value/remark         | Comment | Condition |
| CSI-ResourceConfig ::= SEQUENCE {   |                      |         |           |
| csi-ResourceConfigId  | CSI-ResourceConfigId |         |           |
| csi-RS-ResourceSetList CHOICE {   |                      |         |           |
| nzp-CSI-RS-SSB SEQUENCE {   |                      |         |           |
| nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId { | 1 entry              |         |           |
| NZP-CSI-RS-ResourceSetId[1]   | 0                    | entry 1 |           |
| }   |                      |         |           |
| csi-SSB-ResourceSetList   | Not present          |         |           |
| }   |                      |         |           |
| }   |                      |         |           |
| bwp-Id  | BWP-Id               |         |           |
| resourceType  | periodic             |         |           |
| }   |                      |         |           |

## NZP CSI-RS for CSI Acquisition

NZP-CSI-RS-Resource

**Table 5.4.2.0-14: NZP-CSI-RS-Resource**

| Derivation Path: Table 4.6.3-85    |  |                      |                                |
|------------------------------------|--|----------------------|--------------------------------|
| Information Element                | Value/remark                             | Comment              | Condition                      |
| NZP-CSI-RS-Resource ::= SEQUENCE { |  |                      | DEMOD_FR<br>1<br>DEMOD_FR<br>2 |
| nzp-CSI-RS-Resourceld              | 4  | CSI-RS resource<br>5 |                                |
| resourceMapping                    | CSI-RS-<br>ResourceMapping               |                      |                                |
| powerControlOffset                 | 0  |                      |                                |
| periodicityAndOffset               | CSI-<br>ResourcePeriodicityAnd<br>Offset |                      |                                |
| qcl-InfoPeriodicCSI-RS             | TCl-State #1                             |                      |                                |
| }                                  |  |                      |                                |

CSI-RS-ResourceMapping

**Table 5.4.2.0-15: CSI-RS-ResourceMapping**

| Derivation Path: Table 4.6.3-45       |                             |                                 |           |
|---------------------------------------|-----------------------------|---------------------------------|-----------|
| Information Element                   | Value/remark                | Comment                         | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                             |                                 |           |
| frequencyDomainAllocation CHOICE {    |                             |                                 |           |
| other                                 | 000001                      | K0 = 0, row3,<br>2Tx test cases |           |
| row4                                  | 001                         | K0 = 0,<br>4Tx test cases       |           |
| }                                     |                             |                                 |           |
| nrofPorts                             | P2                          | 2Tx test cases                  |           |
|                                       | P4                          | 4Tx test cases                  |           |
| firstOFDMSymbolInTimeDomain           | 12                          | I0 = 12                         |           |
| cdm-Type                              | fd-CDM2                     |                                 |           |
| density CHOICE {                      |                             |                                 |           |
| one                                   | NULL                        |                                 |           |
| }                                     |                             |                                 |           |
| freqBand                              | CSI-<br>FrequencyOccupation |                                 |           |
| }                                     |                             |                                 |           |

CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.0-16: CSI-ResourcePeriodicityAndOffset**

| Derivation Path: Table 4.6.3-43               |              |         |               |
|---|--------------|---------|---------------|
| Information Element                           | Value/remark | Comment | Condition     |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |              |         |               |
| Slots20                                       | 0            |         | SCS 15kHz     |
| Slots40                                       | 0            |         | SCS 30kHz     |
| Slots80                                       | 0            |         | SCS 60kHz     |
| Slots160                                      | 0            |         | SCS<br>120kHz |
| }   |              |         |               |

## CSI-FrequencyOccupation

**Table 5.4.2.0-17: CSI-FrequencyOccupation for CSI Acquisition**

| Derivation Path: Table 4.6.3-33        |              |         |                      |
|--|--------------|---------|----------------------|
| Information Element                    | Value/remark | Comment | Condition            |
| CSI-FrequencyOccupation ::= SEQUENCE { |              |         |                      |
| nrofRBs                                | 52           |         | BW 10 MHz SCS 15kHz  |
|  | 52           |         | BW 20 MHz SCS 30kHz  |
|  | 108          |         | BW 40 MHz SCS 30kHz  |
|  | 68           |         | BW 100MHz SCS 120kHz |
| }                                      |              |         |                      |

## NZP-CSI-RS-ResourceSet

**Table 5.4.2.0-18: NZP-CSI-RS-ResourceSet for CSI Acquisition**

| Derivation Path: Table 4.6.3-87  |              |                              |           |
|--|--------------|------------------------------|-----------|
| Information Element  | Value/remark | Comment                      | Condition |
| NZP-CSI-RS-ResourceSet ::= SEQUENCE {  |              |                              |           |
| nzp_CSI_ResourceSetId  | 1            |                              |           |
| nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-Resourceld { | 1 entry      |                              | FR1, FR2  |
| NZP-CSI-RS-Resourceld[1]   | 4            | entry 1<br>CSI-RS resource 5 |           |
| }  |              |                              |           |
| repetition   | off          |                              |           |
| aperiodicTriggeringOffset  | Not present  |                              |           |
| trs_Info   | Not present  |                              |           |
| }  |              |                              |           |

## CSI-ResourceConfig

**Table 5.4.2.0-19: CSI-ResourceConfig for CSI Acquisition**

| Derivation Path: Table 4.6.3-41   |              |         |           |
|---|--------------|---------|-----------|
| Information Element   | Value/remark | Comment | Condition |
| CSI-ResourceConfig ::= SEQUENCE {   |              |         |           |
| csi-ResourceConfigId  | 1            |         |           |
| csi-RS-ResourceSetList CHOICE {   |              |         |           |
| nzp-CSI-RS-SSB SEQUENCE {   |              |         |           |
| nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId { | 1 entry      |         |           |
| NZP-CSI-RS-ResourceSetId[1]   | 1            | entry 1 |           |
| }   |              |         |           |
| csi-SSB-ResourceSetList   | Not present  |         |           |
| }   |              |         |           |
| bwp-Id  | BWP-Id       |         |           |
| resourceType  | periodic     |         |           |
| }   |              |         |           |

## ZP CSI-RS for CSI Acquisition

## ZP-CSI-RS-Resource

**Table 5.4.2.0-20: ZP-CSI-RS-Resource**

| Derivation Path: Table 4.6.3-204  |                                     |         |                                |
|-----------------------------------|-------------------------------------|---------|--------------------------------|
| Information Element               | Value/remark                        | Comment | Condition                      |
| ZP-CSI-RS-Resource ::= SEQUENCE { |                                     |         | DEMOD_FR<br>1<br>DEMOD_FR<br>2 |
| zp-CSI-RS-ResourceId              | ZP-CSI-RS-ResourceId                |         |                                |
| resourceMapping                   | ZP CSI-RS-ResourceMapping           |         |                                |
| periodicityAndOffset              | ZP CSI-ResourcePeriodicityAndOffset |         |                                |
| qcl-InfoPeriodicCSI-RS            | TCI-State #1                        |         |                                |
| }                                 |                                     |         |                                |

## CSI-RS-ResourceMapping

**Table 5.4.2.0-21: ZP CSI-RS-ResourceMapping**

| Derivation Path: Table 4.6.3-45       |                            |         |           |
|---------------------------------------|----------------------------|---------|-----------|
| Information Element                   | Value/remark               | Comment | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                            |         |           |
| frequencyDomainAllocation CHOICE {    |                            |         |           |
| other                                 | 000100                     | K0 = 4  |           |
| }                                     |                            |         |           |
| nrofPorts                             | p4                         |         |           |
| firstOFDMSymbolInTimeDomain           | 12                         | I0 = 12 |           |
| cdm-Type                              | fd-CDM2                    |         |           |
| density CHOICE {                      |                            |         |           |
| one                                   | NULL                       |         |           |
| }                                     |                            |         |           |
| freqBand                              | ZP CSI-FrequencyOccupation |         |           |
| }                                     |                            |         |           |

## CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.0-22: ZP CSI-ResourcePeriodicityAndOffset**

| Derivation Path: Table 4.6.3-43               |              |         |            |
|---|--------------|---------|------------|
| Information Element                           | Value/remark | Comment | Condition  |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |              |         |            |
| Slots20                                       | 0            |         | SCS 15kHz  |
| Slots40                                       | 0            |         | SCS 30kHz  |
| Slots80                                       | 0            |         | SCS 60kHz  |
| Slots160                                      | 0            |         | SCS 120kHz |
| }   |              |         |            |

## CSI-FrequencyOccupation

**Table 5.4.2.0-23: ZP CSI-FrequencyOccupation**

| Derivation Path: Table 4.6.3-33        |              |         |                       |
|--|--------------|---------|-----------------------|
| Information Element                    | Value/remark | Comment | Condition             |
| CSI-FrequencyOccupation ::= SEQUENCE { |              |         |                       |
| nrofRBs                                | 52           |         | BW 10 MHz SCS 15kHz   |
|  | 52           |         | BW 20 MHz SCS 30kHz   |
|  | 108          |         | BW 40 MHz SCS 30KHz   |
|  | 68           |         | BW 100 MHz SCS 120KHz |
| }                                      |              |         |                       |

## PDSCH DMRS Configuration

## DMRS-DownlinkConfig

**Table 5.4.2.0-24: DMRS-DownlinkConfig**

| Derivation Path: Table 4.6.3-50    |              |         |            |
|------------------------------------|--------------|---------|------------|
| Information Element                | Value/remark | Comment | Condition  |
| DMRS-DownlinkConfig ::= SEQUENCE { |              |         |            |
| dmrs-Type                          | Type 1       |         |            |
| dmrs-AdditionalPosition            | pos1         |         |            |
| maxLength                          | len1         |         |            |
| phaseTrackingRS                    | Not present  |         | DEMOD_FR 1 |
| phaseTrackingRS SEQUENCE {         |              |         | DEMOD_FR 2 |
| epre-Ratio                         | 0            |         |            |
| resourceElementOffset              | Offset10     |         |            |
| }                                  |              |         |            |
| }                                  |              |         |            |

## PDSCH Configuration

## PDSCH-ServingCellConfig

**Table 5.4.2.0-25: PDSCH-ServingCellConfig**

| Derivation Path: Table 4.6.3-102       |                              |                                  |           |
|--|------------------------------|----------------------------------|-----------|
| Information Element                    | Value/remark                 | Comment                          | Condition |
| PDSCH-ServingCellConfig ::= SEQUENCE { |                              |                                  |           |
| codeBlockGroupTransmission             | Not present                  |                                  |           |
| xOverhead                              | Not present                  |                                  |           |
| nrofHARQ-ProcessesForPDSCH             | Set according to the test id | Typically n4 for FDD, n8 for TDD |           |
| pucch-Cell                             | Not present                  |                                  |           |
| }                                      |                              |                                  |           |

## PDSCH-Config

**Table 5.4.2.0-26: PDSCH-Config**

| Derivation Path: Table 4.6.3-100  |                         |  |            |
|---|-------------------------|--|------------|
| Information Element   | Value/remark            | Comment  | Condition  |
| PDSCH-Config ::= SEQUENCE {   |                         |  |            |
| dataScramblingIdentityPDSCH   | 0                       |  |            |
| dmrs-DownlinkForPDSCH-MappingTypeA CHOICE {   |                         |  |            |
| Setup }   | DMRS-DownlinkConfig     |  |            |
| tci-StatesToAddModList SEQUENCE(SIZE (1..maxNrofTCI-States)) OF TCI-State {             | 2 entries               |  |            |
| TCI-State[1] SEQUENCE {   |                         | entry 1  |            |
| tci-Stateld   | TCI-Stateld 0           |  |            |
| qcl-type1 SEQUENCE {  | QCL Type is Type1       |  |            |
| Cell  | not present             |  |            |
| Bwp-id  | Not present             | BWP ID   |            |
| referenceSignal   | Ssb : 0                 | SSB # 0  |            |
| Qcl-Type  | Type C                  |  |            |
| }   |                         |  |            |
| qcl-type2 SEQUENCE {  | QCL Type is Type2       |  | DEMOD_FR 2 |
| Cell  | not present             |  |            |
| Bwp-id  | Not present             | BWP ID   |            |
| referenceSignal   | Ssb : 0                 | SSB # 0  |            |
| Qcl-Type  | Type D                  |  |            |
| }   |                         |  |            |
| }   |                         |  |            |
| TCI-State[2] SEQUENCE {   |                         | entry 2  |            |
| tci-Stateld   | TCI-Stateld 1           |  |            |
| qcl-type1 {   | QCL Type is Type1       |  |            |
| Cell  | Not present             |  |            |
| Bwp-id  | 0                       | BWP ID   |            |
| referenceSignal   | csi-rs : 0              | CSI-RS # 0   |            |
| Qcl-Type  | Type A                  |  |            |
| }   |                         |  |            |
| qcl-type2 SEQUENCE {  | QCL Type is Type2       |  | DEMOD_FR 2 |
| Cell  | Not present             |  |            |
| Bwp-id  | 0                       | BWP ID   |            |
| referenceSignal   | csi-rs : 0              | CSI-RS # 0   |            |
| Qcl-Type  | Type D                  |  |            |
| }   |                         |  |            |
| }   |                         |  |            |
| vrb-ToPRB-Interleaver   | Not present             |  |            |
| resourceAllocation  | resourceAllocationType0 |  |            |
| pdsch-AggregationFactor   | Not present             |  |            |
| rbg-Size  | config2                 | The UE ignores this field if resourceAllocation is set to resourceAllocation Type1 (see TS 38.214 [21], clause 5.1.2.2.1). |            |
| prb-BundlingType CHOICE {   |                         |  |            |
| staticBundling SEQUENCE {   |                         |  |            |
| bundleSize  | Not present             | PRB Bundling size of 2   |            |
| }   |                         |  |            |
| }   |                         |  |            |
| ZP-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP- | 1 entry                 |  |            |

|                         |                         |         |  |
|-------------------------|-------------------------|---------|--|
| CSI-RS-Resource {       |                         |         |  |
| ZP-CSI-RS-Resource[1]   | ZP-CSI-RS-Resource      | entry 1 |  |
| }                       |                         |         |  |
| p-ZP-CSI-RS-ResourceSet | p-ZP-CSI-RS-ResourceSet |         |  |
| }                       |                         |         |  |

## PDSCH-TimeDomainResourceAllocationList

**Table 5.4.2.0-27: PDSCH-TimeDomainResourceAllocationList**

| Derivation Path: Table 4.6.3-103  |              |                                 |   |
|---|--------------|---------------------------------|---|
| Information Element   | Value/remark | Comment                         | Condition   |
| PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE(SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation { | 2 entries    |                                 |   |
| PDSCH-TimeDomainResourceAllocation[1] SEQUENCE {  |              | entry 1                         |   |
| K0  | Not present  |                                 |   |
| mappingType   | typeA        |                                 |   |
| startSymbolAndLength  | 44           | Start symbol(S)=2, Length(L)=4  | For Slot i, if mod(i, 10) = 7 for i from {0,...,39}                 |
|   | 96           | Start symbol(S)=1, Length(L)=9  | DEMOD_FR 2  |
| }   |              |                                 |   |
| PDSCH-TimeDomainResourceAllocation[2] SEQUENCE {  |              | entry 2                         |   |
| K0  | Not present  |                                 |   |
| mappingType   | typeA        |                                 |   |
|   | 53           | Start symbol(S)=2, Length(L)=12 | For Slot i, if mod(i, 10) = {0,1,2,3,4,5,...} for i from {1,...,39} |
|   | 40           | Start symbol(S)=1, Length(L)=13 | DEMOD_FR 2  |
| }   |              |                                 |   |
| }   |              |                                 |   |

## CRS for Rate Matching

## RateMatchPatternLTE-CRS

**Table 5.4.2.0-28: RateMatchPatternLTE-CRS**

| Derivation Path: Table 4.6.3-138       |              |         |  |
|--|--------------|---------|--|
| Information Element                    | Value/remark | Comment | Condition  |
| RateMatchPatternLTE-CRS ::= SEQUENCE { |              |         | TC 5.2.2.1.4-2 and TC 5.2.3.1.4-2 of TS 38.521-4 |
| carrierFreqDL                          | LTE EARFCN   |         |  |
| carrierBandwidthDL                     | n50          | 10MHz   |  |
| nrofCRS-Ports                          | n4           |         |  |
| v-Shift                                | n0           |         |  |
| }                                      |              |         |  |

CSI-RS for beam refinement

NZP-CSI-RS-Resource

**Table 5.4.2.0-29: NZP-CSI-RS-Resource**

| Derivation Path: Table 4.6.3-85    |                                  |                   |                 |
|------------------------------------|----------------------------------|-------------------|-----------------|
| Information Element                | Value/remark                     | Comment           | Condition       |
| NZP-CSI-RS-Resource ::= SEQUENCE { |                                  |                   | DEMOD_FR2       |
| nzp-CSI-RS-Resourceld              | 5                                | CSI-RS resource 6 | Beam refinement |
|                                    | 6                                | CSI-RS resource 7 | Beam refinement |
| resourceMapping                    | CSI-RS-ResourceMapping           |                   |                 |
| powerControlOffset                 | 0                                |                   |                 |
| periodicityAndOffset               | CSI-ResourcePeriodicityAndOffset |                   |                 |
| qcl-InfoPeriodicCSI-RS             | TCI-State #1                     |                   |                 |
| }                                  |                                  |                   |                 |

CSI-RS-ResourceMapping

**Table 5.4.2.0-30: CSI-RS-ResourceMapping**

| Derivation Path: Table 4.6.3-45       |                         |                                   |           |
|---------------------------------------|-------------------------|-----------------------------------|-----------|
| Information Element                   | Value/remark            | Comment                           | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                         |                                   | DEMOD_FR2 |
| frequencyDomainAllocation CHOICE {    |                         |                                   |           |
| row1                                  | 0001                    | K0 = 0, row1 for resource 1 and 2 |           |
| }                                     |                         |                                   |           |
| nrofPorts                             | p1                      |                                   |           |
| firstOFDMSymbolInTimeDomain           | 8                       | I0 = 8 for resource 1             |           |
|                                       | 9                       | I0 = 9 for resource 2             |           |
| cdm-Type                              | noCDM                   |                                   |           |
| density CHOICE {                      |                         |                                   |           |
| three                                 | NULL                    |                                   |           |
| }                                     |                         |                                   |           |
| freqBand                              | CSI-FrequencyOccupation |                                   |           |
| }                                     |                         |                                   |           |

CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.0-31: CSI-ResourcePeriodicityAndOffset**

| Derivation Path: Table 4.6.3-43               |              |         |            |
|---|--------------|---------|------------|
| Information Element                           | Value/remark | Comment | Condition  |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |              |         | DEMOD_FR2  |
| Slots80                                       | 0            |         | SCS 60kHz  |
| Slots160                                      | 0            |         | SCS 120kHz |
| }   |              |         |            |

## CSI-FrequencyOccupation

**Table 5.4.2.0-32: CSI-FrequencyOccupation for beam refinement**

| Derivation Path: Table 4.6.3-33        |              |         |                         |
|--|--------------|---------|-------------------------|
| Information Element                    | Value/remark | Comment | Condition               |
| CSI-FrequencyOccupation ::= SEQUENCE { |              |         | DEMOD_FR2               |
| nrofRBs                                | 68           |         | BW 100MHz SCS<br>120kHz |
| }                                      |              |         |                         |

## NZP-CSI-RS-ResourceSet

**Table 5.4.2.0-33: NZP-CSI-RS-ResourceSet for beam refinement**

| Derivation Path: Table 4.6.3-87  |              |                              |           |
|--|--------------|------------------------------|-----------|
| Information Element  | Value/remark | Comment                      | Condition |
| NZP-CSI-RS-ResourceSet ::= SEQUENCE {  |              |                              | DEMOD_FR2 |
| nzp_CSI_ResourceSetId  | 2            |                              |           |
| nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-Resourceld { | 2 entries    |                              |           |
| NZP-CSI-RS-Resourceld[1]   | 5            | entry 1<br>CSI-RS resource 6 |           |
| NZP-CSI-RS-Resourceld[2]   | 6            | entry 1<br>CSI-RS resource 7 |           |
| }  |              |                              |           |
| repetition   | off          |                              |           |
| aperiodicTriggeringOffset  | Not present  |                              |           |
| trs_Info   | Not present  |                              |           |
| }  |              |                              |           |

## CSI-ResourceConfig

**Table 5.4.2.0-34: CSI-ResourceConfig for beam refinement**

| Derivation Path: Table 4.6.3-41   |              |         |           |
|---|--------------|---------|-----------|
| Information Element   | Value/remark | Comment | Condition |
| CSI-ResourceConfig ::= SEQUENCE {   |              |         |           |
| csi-ResourceConfigId  | 2            |         |           |
| csi-RS-ResourceSetList CHOICE {   |              |         |           |
| nzp-CSI-RS-SSB SEQUENCE {   |              |         |           |
| nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId { | 1 entry      |         |           |
| NZP-CSI-RS-ResourceSetId[1]   | 2            | entry 1 |           |
| }   |              |         |           |
| csi-SSB-ResourceSetList   | Not present  |         |           |
| }   |              |         |           |
| }   |              |         |           |
| bwp-Id  | BWP-Id       |         |           |
| resourceType  | periodic     |         |           |
| }   |              |         |           |

CSI-RS for beam management

NZP-CSI-RS-Resource

**Table 5.4.2.0-29: NZP-CSI-RS-Resource for beam management**

| Derivation Path: Table 4.6.3-85    |  |  |           |
|------------------------------------|--|--|-----------|
| Information Element                | Value/remark   | Comment                                | Condition |
| NZP-CSI-RS-Resource ::= SEQUENCE { |  |  | PDCCH_FR2 |
| nzp-CSI-RS-Resourceld              | 4<br>5   | CSI-RS resource 5<br>CSI-RS resource 6 |           |
| resourceMapping                    | CSI-RS-ResourceMapping for beam management           |  |           |
| powerControlOffset                 | 0  |  |           |
| periodicityAndOffset               | CSI-ResourcePeriodicityAndOffset for beam management |  |           |
| qcl-InfoPeriodicCSI-RS             | TCI-State #1   |  |           |
| }                                  |  |  |           |

CSI-RS-ResourceMapping

**Table 5.4.2.0-30: CSI-RS-ResourceMapping for beam management**

| Derivation Path: Table 4.6.3-45       |   |  |           |
|---------------------------------------|---|--|-----------|
| Information Element                   | Value/remark                                | Comment  | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |   |  | PDCCH_FR2 |
| frequencyDomainAllocation CHOICE {    |   |  |           |
| row1                                  | 0001  | K0 = 0, row1 for resource 1 and 2              |           |
| }                                     |   |  |           |
| nrofPorts                             | p1  |  |           |
| firstOFDMSymbolInTimeDomain           | 8<br>9                                      | I0 = 8 for resource 1<br>I0 = 9 for resource 2 |           |
| cdm-Type                              | noCDM                                       |  |           |
| density CHOICE {                      |   |  |           |
| three                                 | NULL  |  |           |
| }                                     |   |  |           |
| freqBand                              | CSI-FrequencyOccupation for beam management |  |           |
| }                                     |   |  |           |

CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.0-31: CSI-ResourcePeriodicityAndOffset for beam management**

| Derivation Path: Table 4.6.3-43               |              |         |            |
|---|--------------|---------|------------|
| Information Element                           | Value/remark | Comment | Condition  |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |              |         | PDCCH_FR2  |
| Slots80                                       | 0            |         | SCS 60kHz  |
| Slots160                                      | 0            |         | SCS 120kHz |
| }   |              |         |            |

## CSI-FrequencyOccupation

**Table 5.4.2.0-32: CSI-FrequencyOccupation for beam management**

| Derivation Path: Table 4.6.3-33        |              |         |                         |
|--|--------------|---------|-------------------------|
| Information Element                    | Value/remark | Comment | Condition               |
| CSI-FrequencyOccupation ::= SEQUENCE { |              |         | PDCCH_FR2               |
| nrofRBs                                | 68           |         | BW 100MHz SCS<br>120kHz |
| }                                      |              |         |                         |

## NZP-CSI-RS-ResourceSet

**Table 5.4.2.0-33: NZP-CSI-RS-ResourceSet for beam management**

| Derivation Path: Table 4.6.3-87  |              |                                 |           |
|--|--------------|---------------------------------|-----------|
| Information Element  | Value/remark | Comment                         | Condition |
| NZP-CSI-RS-ResourceSet ::= SEQUENCE {  |              |                                 | PDCCH_FR2 |
| nzp_CSI_ResourceSetId  | 1            |                                 |           |
| nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-Resourceld { | 2 entries    |                                 |           |
| NZP-CSI-RS-Resourceld[1]   | 4            | entry 1<br>CSI-RS resource<br>5 |           |
| NZP-CSI-RS-Resourceld[2]   | 5            | entry 1<br>CSI-RS resource<br>6 |           |
| }  |              |                                 |           |
| repetition   | off          |                                 |           |
| aperiodicTriggeringOffset  | Not present  |                                 |           |
| trs_Info   | Not present  |                                 |           |
| }  |              |                                 |           |

## CSI-ResourceConfig

**Table 5.4.2.0-34: CSI-ResourceConfig for beam management**

| Derivation Path: Table 4.6.3-41   |              |         |           |
|---|--------------|---------|-----------|
| Information Element   | Value/remark | Comment | Condition |
| CSI-ResourceConfig ::= SEQUENCE {   |              |         |           |
| csi-ResourceConfigId  | 1            |         |           |
| csi-RS-ResourceSetList CHOICE {   |              |         |           |
| nzp-CSI-RS-SSB SEQUENCE {   |              |         |           |
| nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId { | 1 entry      |         |           |
| NZP-CSI-RS-ResourceSetId[1]   | 1            | entry 1 |           |
| }   |              |         |           |
| csi-SSB-ResourceSetList   | Not present  |         |           |
| }   |              |         |           |
| }   |              |         |           |
| bwp-Id  | BWP-Id       |         |           |
| resourceType  | periodic     |         |           |
| }   |              |         |           |

### 5.4.2.1 Message contents for PDSCH Demodulation requirements

ZP CSI-RS for CSI Acquisition

p-ZP-CSI-RS-ResourceSet

**Table 5.4.2.1-0: p-ZP-CSI-RS-ResourceSet**

| Derivation Path: TS 38.331 [6], clause 6.3.2. |                       |         |           |
|---|-----------------------|---------|-----------|
| Information Element                           | Value/remark          | Comment | Condition |
| p-ZP-CSI-RS-ResourceSet CHOICE {              |                       |         |           |
| setup   | ZP-CSI-RS-ResourceSet |         |           |
| }   |                       |         |           |

**Table 5.4.2.1-1: ZP-CSI-RS-ResourceSet**

| Derivation Path: Table 4.6.3-87  |              |                                 |           |
|--|--------------|---------------------------------|-----------|
| Information Element  | Value/remark | Comment                         | Condition |
| p-ZP-CSI-RS-ResourceSet ::= SEQUENCE {   |              |                                 |           |
| zp_CSI-RS_ResourceSetId  | 0            |                                 |           |
| zp-CSI-RS-ResourceldList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-Resourceld { |              | 1 entry                         |           |
| ZP-CSI-RS-Resourceld[1]  | 0            | entry 1<br>ZP CSI-RS resource 1 |           |
| }  |              |                                 |           |
| }  |              |                                 |           |

## CSI-MeasConfig

**Table 5.4.2.1-2: CSI-MeasConfig**

| Derivation Path: Table 4.6.3-38  |  |                              |            |
|--|--|------------------------------|------------|
| Information Element  | Value/remark                               | Comment                      | Condition  |
| CSI-MeasConfig ::= SEQUENCE {  |  |                              |            |
| nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {            | n entries                                  | dependent on test condition  |            |
| NZP-CSI-RS-Resource[1]   | NZP-CSI-RS-Resource for TRS (1)            | entry 1<br>CSI-RS resource 1 |            |
| NZP-CSI-RS-Resource[2]   | NZP-CSI-RS-Resource for TRS (2)            | entry 2<br>CSI-RS resource 2 |            |
| NZP-CSI-RS-Resource[3]   | NZP-CSI-RS-Resource for TRS (3)            | entry 3<br>CSI-RS resource 3 |            |
| NZP-CSI-RS-Resource[4]   | NZP-CSI-RS-Resource for TRS (4)            | entry 4<br>CSI-RS resource 4 |            |
| NZP-CSI-RS-Resource[5]   | NZP-CSI-RS-Resource for CSI Acquisition    | entry 5<br>CSI-RS resource 5 |            |
| NZP-CSI-RS-Resource[6]   | CSI-RS-Resource for beam refinement        | entry 5<br>CSI-RS resource 6 | DEMOD_FR 2 |
| NZP-CSI-RS-Resource[7]   | CSI-RS-Resource for beam refinement        | entry 5<br>CSI-RS resource 7 | DEMOD_FR 2 |
| }  |  |                              |            |
| nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSetId { | n entries                                  | dependent on test condition  |            |
| NZP-CSI-RS-ResourceSet[1]  | NZP-CSI-RS-ResourceSet for TRS             | entry 1                      |            |
| NZP-CSI-RS-ResourceSet[2]  | NZP-CSI-RS-ResourceSet for CSI Acquisition | entry 2                      |            |
| NZP-CSI-RS-ResourceSet[3]  | CSI-RS-ResourceSet for beam refinement     | entry 3                      | DEMOD_FR 2 |
| }  |  |                              |            |
| csi-IM-ResourceToAddModList  | Not present                                |                              |            |
| csi-IM-ResourceSetToAddModList   | Not present                                |                              |            |
| csi-SSB-ResourceSetToAddModList  | Not present                                |                              |            |
| csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {        | n entries                                  | dependent on test condition  |            |
| CSI-ResourceConfig[1]  | CSI-ResourceConfig for TRS                 | entry 1                      |            |
| CSI-ResourceConfig[2]  | CSI-ResourceConfig for CSI Acquisition     | entry 2                      |            |
| CSI-ResourceConfig[2]  | CSI-ResourceConfig for beam refinement     | entry 3                      | DEMOD_FR 2 |
| }  |  |                              |            |
| }  |  |                              |            |

### 5.4.2.2 Message contents for PDCCH Demodulation requirements

NZP-CSI-RS for Tracking

CSI-RS-ResourceMapping

**Table 5.4.2.2-1: CSI-RS-ResourceMapping for TRS**

| Derivation Path: Table 4.6.3-45       |                         |                                       |           |
|---------------------------------------|-------------------------|---------------------------------------|-----------|
| Information Element                   | Value/remark            | Comment                               | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                         |                                       |           |
| frequencyDomainAllocation CHOICE {    |                         |                                       |           |
| row1                                  | 0001                    | $k_0=0$ for CSI-RS resource 1,2,3,4   | TRS       |
| }                                     |                         |                                       |           |
| firstOFDMSymbolInTimeDomain           | 4                       | $l_0 = 4$ for CSI-RS resource 1 and 3 | TRS       |
|                                       | 8                       | $l_0 = 8$ for CSI-RS resource 2 and 4 | TRS       |
| nrofPorts                             | p1                      | 1 for CSI-RS resource 1,2,3,4         | TRS       |
| Cdm-Type                              | noCDM                   |                                       | TRS       |
| Density CHOICE{                       |                         |                                       |           |
| three                                 | Null                    |                                       | TRS       |
| }                                     |                         |                                       |           |
| freqBand                              | CSI-FrequencyOccupation |                                       | TRS       |
| }                                     |                         |                                       |           |

## CSI-MeasConfig

**Table 5.4.2.2-2: CSI-MeasConfig**

| Derivation Path: Table 4.6.3-38   |   |                                 |               |
|---|---|---------------------------------|---------------|
| Information Element   | Value/remark                                      | Comment                         | Condition     |
| CSI-MeasConfig ::= SEQUENCE {   |   |                                 |               |
| nzp-CSI-RS-ResourceToAddModList SEQUENCE<br>(SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-<br>CSI-RS-Resource {            | n entries   | Dependent on test<br>condition  |               |
| NZP-CSI-RS-Resource[1]  | NZP-CSI-RS-Resource<br>for TRS (1)                | entry 1<br>CSI-RS resource<br>1 |               |
| NZP-CSI-RS-Resource[2]  | NZP-CSI-RS-Resource<br>for TRS (2)                | entry 2<br>CSI-RS resource<br>2 |               |
| NZP-CSI-RS-Resource[3]  | NZP-CSI-RS-Resource<br>for TRS (3)                | entry 3<br>CSI-RS resource<br>3 |               |
| NZP-CSI-RS-Resource[4]  | NZP-CSI-RS-Resource<br>for TRS (4)                | entry 4<br>CSI-RS resource<br>4 |               |
| NZP-CSI-RS-Resource[5]  | NZP-CSI-RS-Resource<br>for beam management<br>(5) | entry 4<br>CSI-RS resource<br>5 | PDCCH_FR<br>2 |
| NZP-CSI-RS-Resource[6]  | NZP-CSI-RS-Resource<br>for beam management<br>(6) | entry 4<br>CSI-RS resource<br>6 | PDCCH_FR<br>2 |
| }   |   |                                 |               |
| nzp-CSI-RS-ResourceSetToAddModList<br>SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-<br>ResourceSets)) OF NZP-CSI-RS-ResourceSetId { | 1 entry   |                                 |               |
| NZP-CSI-RS-ResourceSet[1]   | NZP-CSI-RS-<br>ResourceSet for TRS                | entry 1                         |               |
| NZP-CSI-RS-ResourceSet[2]   | NZP-CSI-RS-<br>ResourceSet for beam<br>management | entry 1                         | PDCCH_FR<br>2 |
| }   |   |                                 |               |
| csi-IM-ResourceToAddModList   | Not present                                       |                                 |               |
| csi-IM-ResourceSetToAddModList  | Not present                                       |                                 |               |
| csi-SSB-ResourceSetToAddModList   | Not present                                       |                                 |               |
| csi-ResourceConfigToAddModList SEQUENCE<br>(SIZE (1..maxNrofCSI-ResourceConfigurations)) OF<br>CSI-ResourceConfig {         | 1 entry   |                                 |               |
| CSI-ResourceConfig[1]   | CSI-ResourceConfig                                | entry 1                         |               |
| CSI-ResourceConfig[2]   | CSI-ResourceConfig for<br>beam management         | entry 1                         | PDCCH_FR<br>2 |
| }   |   |                                 |               |
| }   |   |                                 |               |

## PDSCH Configuration

## PDSCH-Config

**Table 5.4.2.2-3: PDSCH-Config**

| Derivation Path: Table 4.6.3-100  |                         |                        |           |
|---|-------------------------|------------------------|-----------|
| Information Element   | Value/remark            | Comment                | Condition |
| PDSCH-Config ::= SEQUENCE {   |                         |                        |           |
| dataScramblingIdentityPDSCH   | 0                       |                        |           |
| dmrs-DownlinkForPDSCH-MappingTypeA CHOICE {                                 |                         |                        |           |
| Setup   | DMRS-DownlinkConfig     |                        |           |
| }   |                         |                        |           |
| tci-StatesToAddModList SEQUENCE(SIZE (1..maxNrofTCI-States)) OF TCI-State { | 2 entries               |                        |           |
| TCI-State[1] SEQUENCE {   |                         | entry 1                |           |
| tci-Stateld   | TCI-Stateld 0           |                        |           |
| qcl-type1 SEQUENCE {  | QCL Type is Type1       |                        |           |
| Cell  | Not Present             |                        |           |
| Bwp-id  | Not present             | BWP ID                 |           |
| referenceSignal   | Ssb : 0                 | SSB # 0                |           |
| Qcl-Type  | Type C                  |                        |           |
| }   |                         |                        |           |
| qcl-type2 SEQUENCE {  | QCL Type is Type2       |                        |           |
| Cell  | Not Present             |                        |           |
| Bwp-id  | Not present             | BWP ID                 |           |
| referenceSignal   | Ssb : 0                 | SSB # 0                |           |
| Qcl-Type  | Type D                  |                        |           |
| }   |                         |                        |           |
| }   |                         |                        |           |
| TCI-State[2] SEQUENCE {   |                         | entry 2                |           |
| tci-Stateld   | TCI-Stateld 1           |                        |           |
| qcl-type1 SEQUENCE {  | QCL Type is Type1       |                        |           |
| Cell  | Not Present             |                        |           |
| Bwp-id  | 0                       | BWP ID                 |           |
| referenceSignal   | csi-rs : 0              | CSI-RS # 0             |           |
| Qcl-Type  | Type A                  |                        |           |
| }   |                         |                        |           |
| qcl-type2 SEQUENCE {  | QCL Type is Type2       |                        |           |
| Cell  | Not Present             |                        |           |
| Bwp-id  | 0                       | BWP ID                 |           |
| referenceSignal   | csi-rs : 0              | CSI-RS # 0             |           |
| Qcl-Type  | Type D                  |                        |           |
| }   |                         |                        |           |
| }   |                         |                        |           |
| }   |                         |                        |           |
| vrb-ToPRB-Interleaver   | Not present             |                        |           |
| resourceAllocation  | resourceAllocationType0 |                        |           |
| pdsch-AggregationFactor   | Not present             |                        |           |
| prb-BundlingType CHOICE {   |                         |                        |           |
| staticBundling SEQUENCE {   |                         |                        |           |
| bundleSize  | Not present             | PRB Bundling size of 2 |           |
| }   |                         |                        |           |
| }   |                         |                        |           |
| }   |                         |                        |           |
| }   |                         |                        |           |

### 5.4.2.3 Message contents for Sustained downlink data rate requirements

Physical layer parameters

**Table 5.4.2.3-1: Physical layer parameters for DCI format 1\_1**

Derivation Path: Table 5.4.2.0-1

Common Serving Parameters

ServingCellConfigCommon

**Table 5.4.2.3-2: ServingCellConfigCommon**

Derivation Path: Table 5.4.2.0-2

TDD-UL-DL-Config

**Table 5.4.2.3-3: TDD-UL-DL-Config**

Derivation Path: Table 5.4.2.0-3

PDCCH Configuration

PDCCH-ConfigCommon

**Table 5.4.2.3-4: PDCCH-ConfigCommon**

Derivation Path: Table 5.4.2.0-4

ServingCellConfig

**Table 5.4.2.3-5: ServingCellConfig**

Derivation Path: Table 5.4.2.0-5

## PDCCH-config

**Table 5.4.2.3-6: PDCCH-ControlResourceSet**

| Derivation Path: Table 5.4.2.0-6   |   |  |                     |
|--|---|--|---------------------|
| Information Element  | Value/remark  | Comment  | Condition           |
| ControlResourceSet ::= SEQUENCE {  |   |  |                     |
| controlResourceSetId   | ControlResourceSetId                                    |  |                     |
| frequencyDomainResources   | xxxxxxxx xxxxxxxx<br>xxxxxxxx xxxxxxxx<br>xxxxxxxx xxxx | TS 38.521-4<br>Table 5.2-2 for tested channel bandwidth and subcarrier spacing |                     |
| duration   | 1   | SearchSpace duration of 1 symbol   | SDR_FR1,<br>SDR_FR2 |
| cce-REG-MappingType CHOICE {   |   |  |                     |
| nonInterleaved   | NULL  |  |                     |
| }  |   |  |                     |
| precoderGranularity  | sameAsREG-bundle  |  |                     |
| tci-StatesPDCCH-ToAddList  | Not present   | SearchSpace seen from all TCI states   |                     |
| tci-StatesPDCCH-ToAddList SEQUENCE(SIZE(1..maxNrofTCI-StatesPDCCH)) OF TCI-Stateld { | 1 entry   |  | MBWP                |
| TCI-Stateld[1]   | 0<br>1  | QCL ssb 0<br>QCL csi-rs 0  |                     |
| }  |   |  |                     |
| }  |   |  |                     |

| Condition | Explanation         |
|-----------|---------------------|
| SDR_FR1   | SDR testing in FR1. |
| SDR_FR2   | SDR testing in FR2. |

**Table 5.4.2.3-7: PDCCH Search Space**

| Derivation Path: Table 5.4.2.0-7            |                    |                    |                   |
|---|--------------------|--------------------|-------------------|
| Information Element                         | Value/remark       | Comment            | Condition         |
| SearchSpace ::= SEQUENCE {                  |                    |                    |                   |
| monitoringSlotPeriodicityAndOffset CHOICE { |                    |                    |                   |
| sl1   | NULL               |                    |                   |
| }   |                    |                    |                   |
| duration                                    | Not present        | 1 slot per default |                   |
| monitoringSymbolsWithinSlot                 | 1000000000000000   | Starting symbol 0  |                   |
| nrofCandidates SEQUENCE {                   |                    |                    |                   |
| aggregationLevel1                           | n0                 |                    |                   |
| aggregationLevel2                           | n2<br>n0           | 1 for UL, 1 for DL | CORESET_ge_24_RBs |
| aggregationLevel4                           | n2<br>n0           | 1 for UL, 1 for DL | CORESET_ge_48_RBs |
| aggregationLevel8                           | n2<br>n0           | 1 for UL, 1 for DL | CORESET_ge_96_RBs |
| aggregationLevel16                          | n0                 |                    |                   |
| }   |                    |                    |                   |
| searchSpaceType CHOICE {                    |                    |                    |                   |
| ue-Specific SEQUENCE {                      |                    |                    | USS               |
| dci-Formats                                 | formats0-1-And-1-1 | DCI Format 1_1     |                   |
| }   |                    |                    |                   |
| }   |                    |                    |                   |
| }   |                    |                    |                   |

| Condition         | Explanation   |
|-------------------|---|
| CORESET_ge_24_RBs | 5MHz in scs15; 10MHz, 15MHz in scs30.               |
| CORESET_ge_48_RBs | 10MHz in scs15; 20MHz in scs30.                     |
| CORESET_ge_96_RBs | 15MHz and above in scs15; 25MHz and above in scs30. |

## NZP-CSI-RS for Tracking

### NZP-CSI-RS-Resource

**Table 5.4.2.3-8: NZP-CSI-RS-Resource for TRS**

| Derivation Path: Table 5.4.2.0-8   |  |  |           |
|------------------------------------|--|--|-----------|
| Information Element                | Value/remark                             | Comment  | Condition |
| NZP-CSI-RS-Resource ::= SEQUENCE { |  |  |           |
| nzp-CSI-RS-Resourceld              | 0<br>1<br>2<br>3                         | CSI-RS resource 1<br>CSI-RS resource 2<br>CSI-RS resource 3<br>CSI-RS resource 4 |           |
| resourceMapping                    | CSI-RS-<br>ResourceMapping for<br>TRS    |  |           |
| powerControlOffset                 | 0  |  |           |
| periodicityAndOffset               | CSI-<br>ResourcePeriodicityAnd<br>Offset |  |           |
| qcl-InfoPeriodicCSI-RS             | TCI-Stateld 0                            | QCL ssb 0  |           |
| }                                  |  |  |           |

## CSI-RS-ResourceMapping

**Table 5.4.2.3-9: CSI-RS-ResourceMapping for TRS**

| Derivation Path: Table 5.4.2.0-9      |  |   |           |
|---------------------------------------|--|---|-----------|
| Information Element                   | Value/remark                           | Comment   | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |  |   |           |
| frequencyDomainAllocation CHOICE {    |  |   |           |
| row1                                  | 1000                                   | $k_0=3$ , row1  | 2TX, 4TX  |
| }                                     |  |   |           |
| firstOFDMSymbolInTimeDomain           | 6<br>10                                | $l_0=6$ for CSI-RS<br>resource 1 and 3<br>$l_0=10$ for CSI-RS<br>resource 2 and 4 |           |
| nrofPorts                             | p1                                     | 1 for CSI-RS<br>resource 1,2,3,4  | 2TX, 4TX  |
| cdm-Type                              | noCDM                                  |   |           |
| density CHOICE{                       |  |   |           |
| three                                 | Null                                   |   |           |
| }                                     |  |   |           |
| freqBand                              | CSI-<br>FrequencyOccupation for<br>TRS |   |           |
| }                                     |  |   |           |

## CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.3-10: CSI-ResourcePeriodicityAndOffset for TRS**

|                                   |
|-----------------------------------|
| Derivation Path: Table 5.4.2.0-10 |
|-----------------------------------|

CSI-FrequencyOccupation

**Table 5.4.2.3-11: CSI-FrequencyOccupation for TRS**

| Derivation Path: Table 5.4.2.0-11      |              |   |           |
|--|--------------|---|-----------|
| Information Element                    | Value/remark | Comment                                   | Condition |
| CSI-FrequencyOccupation ::= SEQUENCE { |              |   |           |
| nrofRBs                                | 52           | BW 10MHz SCS 15kHz,<br>BW 20MHz SCS 30kHz |           |
|  | 108          | BW 20MHz SCS 15kHz                        |           |
|  | 276          | BW 100MHz SCS 30kHz                       |           |
| }                                      |              |   |           |

NZP-CSI-RS-ResourceSet

**Table 5.4.2.3-12: NZP-CSI-RS-ResourceSet for TRS**

|                                   |
|-----------------------------------|
| Derivation Path: Table 5.4.2.0-12 |
|-----------------------------------|

CSI-ResourceConfig

**Table 5.4.2.3-13: CSI-ResourceConfig for TRS**

|                                   |
|-----------------------------------|
| Derivation Path: Table 5.4.2.0-13 |
|-----------------------------------|

NZP CSI-RS for CSI Acquisition

NZP-CSI-RS-Resource

**Table 5.4.2.3-14: NZP-CSI-RS-Resource for CSI Acquisition**

| Derivation Path: Table 5.4.2.0-14  |  |                   |           |
|------------------------------------|--|-------------------|-----------|
| Information Element                | Value/remark                             | Comment           | Condition |
| NZP-CSI-RS-Resource ::= SEQUENCE { |  |                   |           |
| nzp-CSI-RS-Resourceld              | 4  | CSI-RS resource 5 |           |
| resourceMapping                    | CSI-RS-<br>ResourceMapping               |                   |           |
| powerControlOffset                 | 0  |                   |           |
| periodicityAndOffset               | CSI-<br>ResourcePeriodicityAnd<br>Offset |                   |           |
| qcl-InfoPeriodicCSI-RS             | TCI-Stateld 1                            | QCL csi-rs 0      |           |
| }                                  |  |                   |           |

CSI-RS-ResourceMapping

**Table 5.4.2.3-15: CSI-RS-ResourceMapping for CSI Acquisition**

| Derivation Path: Table 5.4.2.0-15     |  |                |           |
|---------------------------------------|--|----------------|-----------|
| Information Element                   | Value/remark                                   | Comment        | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |  |                |           |
| frequencyDomainAllocation CHOICE {    |  |                |           |
| other                                 | 000100   | $k_0=4$ , row3 | 2TX       |
| row4                                  | 010  | $k_0=4$ , row4 | 4TX       |
| }                                     |  |                |           |
| nrofPorts                             | p2   |                | 2TX       |
|                                       | p4   |                | 4TX       |
| firstOFDMSymbolInTimeDomain           | 12   | $l_0=12$       |           |
| cdm-Type                              | fd-CDM2  |                |           |
| density CHOICE {                      |  |                |           |
| one                                   | NULL   |                |           |
| }                                     |  |                |           |
| freqBand                              | CSI-FrequencyOccupation<br>for CSI Acquisition |                |           |
| }                                     |  |                |           |

CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.3-16: CSI-ResourcePeriodicityAndOffset**

|                                   |
|-----------------------------------|
| Derivation Path: Table 5.4.2.0-16 |
|-----------------------------------|

CSI-FrequencyOccupation

**Table 5.4.2.3-17: CSI-FrequencyOccupation for CSI Acquisition**

| Derivation Path: Table 5.4.2.0-17      |              |         |   |
|--|--------------|---------|---|
| Information Element                    | Value/remark | Comment | Condition                                 |
| CSI-FrequencyOccupation ::= SEQUENCE { |              |         |   |
| nrofRBs                                | 52           |         | BW 10MHz SCS 15kHz,<br>BW 20MHz SCS 30kHz |
|  | 108          |         | BW 20MHz SCS 15kHz                        |
|  | 276          |         | BW 100MHz SCS 30kHz                       |
| }                                      |              |         |   |

NZP-CSI-RS-ResourceSet

**Table 5.4.2.3-18: NZP-CSI-RS-ResourceSet for CSI Acquisition**

|                                   |
|-----------------------------------|
| Derivation Path: Table 5.4.2.0-18 |
|-----------------------------------|

CSI-ResourceConfig

**Table 5.4.2.3-19: CSI-ResourceConfig for CSI Acquisition**

|                                   |
|-----------------------------------|
| Derivation Path: Table 5.4.2.0-19 |
|-----------------------------------|

ZP CSI-RS for CSI Acquisition

ZP-CSI-RS-Resource

**Table 5.4.2.3-20: ZP-CSI-RS-Resource**

| Derivation Path: Table 5.4.2.0-20 |                                     |              |           |
|-----------------------------------|-------------------------------------|--------------|-----------|
| Information Element               | Value/remark                        | Comment      | Condition |
| ZP-CSI-RS-Resource ::= SEQUENCE { |                                     |              |           |
| zp-CSI-RS-Resourceld              | ZP-CSI-RS-Resourceld                |              |           |
| resourceMapping                   | ZP CSI-RS-ResourceMapping           |              |           |
| periodicityAndOffset              | ZP CSI-ResourcePeriodicityAndOffset |              |           |
| qcl-InfoPeriodicCSI-RS            | TCI-Stateld 1                       | QCL csi-rs 0 |           |
| }                                 |                                     |              |           |

CSI-RS-ResourceMapping

**Table 5.4.2.3-21: ZP CSI-RS-ResourceMapping**

| Derivation Path: Table 5.4.2.0-21     |                            |                |           |
|---------------------------------------|----------------------------|----------------|-----------|
| Information Element                   | Value/remark               | Comment        | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                            |                |           |
| frequencyDomainAllocation CHOICE {    |                            |                |           |
| row4                                  | 001                        | $k_0=0$ , row4 | 2TX, 4TX  |
| }                                     |                            |                |           |
| nrofPorts                             | p4                         |                | 2TX, 4TX  |
| firstOFDMSymbolInTimeDomain           | 12                         | $l_0=12$       |           |
| cdm-Type                              | fd-CDM2                    |                |           |
| density CHOICE {                      |                            |                |           |
| one                                   | NULL                       |                |           |
| }                                     |                            |                |           |
| freqBand                              | ZP CSI-FrequencyOccupation |                |           |
| }                                     |                            |                |           |

CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.3-22: ZP CSI-ResourcePeriodicityAndOffset**

|                                   |
|-----------------------------------|
| Derivation Path: Table 5.4.2.0-22 |
|-----------------------------------|

CSI-FrequencyOccupation

**Table 5.4.2.3-23: ZP CSI-FrequencyOccupation**

| Derivation Path: Table 5.4.2.0-23      |              |         |   |
|--|--------------|---------|---|
| Information Element                    | Value/remark | Comment | Condition                                 |
| CSI-FrequencyOccupation ::= SEQUENCE { |              |         |   |
| nrofRBs                                | 52           |         | BW 10MHz SCS 15kHz,<br>BW 20MHz SCS 30kHz |
|  | 108          |         | BW 20MHz SCS 15kHz                        |
|  | 276          |         | BW 100MHz SCS 30kHz                       |
| }                                      |              |         |   |

PDSCH DMRS Configuration

DMRS-DownlinkConfig

**Table 5.4.2.3-24: DMRS-DownlinkConfig**

|                                   |
|-----------------------------------|
| Derivation Path: Table 5.4.2.0-24 |
|-----------------------------------|

PDSCH Configuration

PDSCH-ServingCellConfig

**Table 5.4.2.3-25: PDSCH-ServingCellConfig**

|                                   |
|-----------------------------------|
| Derivation Path: Table 5.4.2.0-25 |
|-----------------------------------|

## PDSCH-Config

**Table 5.4.2.3-26: PDSCH-Config**

| Derivation Path: Table 5.4.2.0-26   |                         |  |                     |
|---|-------------------------|--|---------------------|
| Information Element   | Value/remark            | Comment  | Condition           |
| PDSCH-Config ::= SEQUENCE {   |                         |  |                     |
| dataScramblingIdentityPDSCH   | 0                       |  |                     |
| dmrs-DownlinkForPDSCH-MappingTypeA CHOICE {                                 |                         |  |                     |
| setup   | DMRS-DownlinkConfig     |  |                     |
| }   |                         |  |                     |
| tci-StatesToAddModList SEQUENCE(SIZE (1..maxNrofTCI-States)) OF TCI-State { | 2 entries               |  |                     |
| TCI-State[1] SEQUENCE {   |                         | entry 1  |                     |
| tci-Stateld   | 0                       | TCI-Stateld 0  |                     |
| qcl-type1 SEQUENCE {  |                         |  |                     |
| cell  | 0                       |  |                     |
| bwp-id  | Not present             | BWP_ID   |                     |
| referenceSignal   | ssb                     |  |                     |
| ssb   | 0                       |  |                     |
| qcl-Type  | typeC                   |  |                     |
| }   |                         |  |                     |
| qcl-type2 SEQUENCE {  |                         |  | SDR_FR2             |
| cell  | 0                       |  |                     |
| bwp-id  | Not present             | BWP_ID   |                     |
| referenceSignal   | ssb                     |  |                     |
| ssb   | 0                       |  |                     |
| qcl-Type  | typeD                   |  |                     |
| }   |                         |  |                     |
| }   |                         |  |                     |
| TCI-State[2] SEQUENCE {   |                         | entry 2  |                     |
| tci-Stateld   | 1                       | TCI-Stateld 1  |                     |
| qcl-type1 {   |                         |  |                     |
| cell  | 0                       |  |                     |
| bwp-id  | 0                       | BWP ID   |                     |
| referenceSignal   | csi-rs                  |  |                     |
| csi-rs  | 0                       |  |                     |
| qcl-Type  | typeA                   |  |                     |
| }   |                         |  |                     |
| qcl-type2 SEQUENCE {  |                         |  | SDR_FR2             |
| cell  | 0                       |  |                     |
| bwp-id  | 0                       | BWP ID   |                     |
| referenceSignal   | csi-rs                  |  |                     |
| csi-rs  | 0                       |  |                     |
| qcl-Type  | typeD                   |  |                     |
| }   |                         |  |                     |
| }   |                         |  |                     |
| }   |                         |  |                     |
| vrb-ToPRB-Interleaver   | Not present             |  |                     |
| resourceAllocation  | resourceAllocationType0 |  |                     |
| pdsch-AggregationFactor   | Not present             |  |                     |
| rbg-Size  | config1                 | The UE ignores this field if <i>resourceAllocation</i> is set to <i>resourceAllocation Type1</i> (see TS 38.214 [21], clause 5.1.2.2.1). |                     |
| prb-BundlingType CHOICE {   |                         |  |                     |
| staticBundling SEQUENCE {   |                         |  |                     |
| bundleSize  | wideband                |  | SDR_FR1,<br>SDR_FR2 |
| }   |                         |  |                     |
| }   |                         |  |                     |

|   |                         |         |  |
|---|-------------------------|---------|--|
| ZP-CSI-RS-ResourceToAddModList SEQUENCE<br>(SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource { | 1 entry                 |         |  |
| ZP-CSI-RS-Resource[1]   | ZP-CSI-RS-Resource      | entry 1 |  |
| }   |                         |         |  |
| p-ZP-CSI-RS-ResourceSet   | p-ZP-CSI-RS-ResourceSet |         |  |
| }   |                         |         |  |

## PDSCH-TimeDomainResourceAllocationList

**Table 5.4.2.3-27: PDSCH-TimeDomainResourceAllocationList**

| Derivation Path: Table 5.4.2.0-27   |              |                                 |                     |
|---|--------------|---------------------------------|---------------------|
| Information Element   | Value/remark | Comment                         | Condition           |
| PDSCH-TimeDomainResourceAllocationList ::= SEQUENCE(SIZE(1..maxNrofDL-Allocations)) OF PDSCH-TimeDomainResourceAllocation { | 2 entries    |                                 |                     |
| PDSCH-TimeDomainResourceAllocation[1]<br>SEQUENCE {   |              | entry 1                         |                     |
| k0  | Not present  |                                 |                     |
| mappingType   | typeA        |                                 |                     |
| startSymbolAndLength  | 44           | Start symbol(S)=2, Length(L)=4  | SDR_FR1             |
|   | 96           | Start symbol(S)=1, Length(L)=9  | SDR_FR2             |
| }   |              |                                 |                     |
| PDSCH-TimeDomainResourceAllocation[2]<br>SEQUENCE {   |              | entry 2                         |                     |
| k0  | Not present  |                                 |                     |
| mappingType   | typeA        |                                 |                     |
|   | 40           | Start symbol(S)=1, Length(L)=13 | SDR_FR1,<br>SDR_FR2 |
| }   |              |                                 |                     |
| }   |              |                                 |                     |

– *SecurityAlgorithmConfig***Table 5.4.2.3-A1: SecurityAlgorithmConfig**

| Derivation Path: Table 4.6.3-165       |              |         |                     |
|--|--------------|---------|---------------------|
| Information Element                    | Value/remark | Comment | Condition           |
| SecurityAlgorithmConfig ::= SEQUENCE { |              |         |                     |
| cipheringAlgorithm                     | nea0         |         |                     |
|  | nea2         |         | SDR_FR1,<br>SDR_FR2 |
| integrityProtAlgorithm                 | nia2         |         |                     |
| }                                      |              |         |                     |

— *Security mode command*

**Table 5.4.2.3-A2: SECURITY MODE COMMAND**

| Derivation Path: Table 4.7.1-25        |   |   |                  |
|--|---|---|------------------|
| Information Element                    | Value/remark  | Comment   | Condition        |
| Selected NAS security algorithms       |   |   |                  |
| Type of ciphering algorithm            | '0000'B   | 5G encryption algorithm 5G EA0 (null ciphering algorithm)       | SDR_FR1, SDR_FR2 |
| Type of integrity protection algorithm | Set according to PIXIT px_NAS_5GC_IntegrityProtAlgorithm for default integrity protection algorithm | This value should not be equal to the null integrity algorithm. |                  |
| Selected EPS NAS security algorithms   | Not Present   |   |                  |
| Selected EPS NAS security algorithms   |   |   | UE_S1_SUPORTED   |
| Type of ciphering algorithm            | '0000'B   | EPS encryption algorithm EEA0 (null ciphering algorithm)        | SDR_FR1, SDR_FR2 |
| Type of integrity protection algorithm | Set according to PIXIT px_NAS_IntegrityProtAlgorithm for default integrity protection algorithm     |   |                  |

#### 5.4.2.4 Message contents for CQI reporting requirements

NZP-CSI-RS for Tracking

CSI-RS-ResourceMapping

**Table 5.4.2.4-1: CSI-RS-ResourceMapping for TRS**

| Derivation Path: Table 4.6.3-45       |                         |                                       |           |
|---------------------------------------|-------------------------|---------------------------------------|-----------|
| Information Element                   | Value/remark            | Comment                               | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                         |                                       |           |
| frequencyDomainAllocation CHOICE {    |                         |                                       |           |
| row1                                  | 0001                    | $k_0=0$ for CSI-RS resource 1,2,3,4   | TRS       |
| }                                     |                         |                                       |           |
| firstOFDMSymbolInTimeDomain           | 4                       | $l_0 = 4$ for CSI-RS resource 1 and 3 | TRS       |
|                                       | 8                       | $l_0 = 8$ for CSI-RS resource 2 and 4 | TRS       |
| nrofPorts                             | p1                      | 1 for CSI-RS resource 1,2,3,4         | TRS       |
| Cdm-Type                              | noCDM                   |                                       | TRS       |
| Density CHOICE{                       |                         |                                       |           |
| three                                 | Null                    |                                       | TRS       |
| }                                     |                         |                                       |           |
| freqBand                              | CSI-FrequencyOccupation |                                       | TRS       |
| }                                     |                         |                                       |           |

## NZP CSI-RS for CSI Acquisition

## CSI-RS-ResourceMapping

**Table 5.4.2.4-2: CSI-RS-ResourceMapping**

| Derivation Path: Table 4.6.3-45       |                         |               |           |
|---------------------------------------|-------------------------|---------------|-----------|
| Information Element                   | Value/remark            | Comment       | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                         |               |           |
| frequencyDomainAllocation CHOICE {    |                         |               |           |
| other                                 | 001000                  | K0 = 6, row3, |           |
| }                                     |                         |               |           |
| nrofPorts                             | P2                      |               |           |
| firstOFDMSymbolInTimeDomain           | 13                      | I0 = 13       |           |
| cdm-Type                              | fd-CDM2                 |               |           |
| density CHOICE {                      |                         |               |           |
| one                                   | NULL                    |               |           |
| }                                     |                         |               |           |
| freqBand                              | CSI-FrequencyOccupation |               |           |
| }                                     |                         |               |           |

## ZP CSI-RS for CSI Acquisition

## CSI-RS-ResourceMapping

**Table 5.4.2.4-3: ZP CSI-RS-ResourceMapping**

| Derivation Path: Table 4.6.3-45       |                            |         |           |
|---------------------------------------|----------------------------|---------|-----------|
| Information Element                   | Value/remark               | Comment | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                            |         |           |
| frequencyDomainAllocation CHOICE {    |                            |         |           |
| other                                 | 000100                     | K0 = 4  |           |
| }                                     |                            |         |           |
| nrofPorts                             | P4                         |         |           |
| firstOFDMSymbolInTimeDomain           | 9                          | I0 = 9  |           |
| cdm-Type                              | fd-CDM2                    |         |           |
| density CHOICE {                      |                            |         |           |
| one                                   | NULL                       |         |           |
| }                                     |                            |         |           |
| freqBand                              | ZP CSI-FrequencyOccupation |         |           |
| }                                     |                            |         |           |

## CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.4-4: ZP CSI-ResourcePeriodicityAndOffset**

| Derivation Path: Table 4.6.3-43               |              |         |           |
|---|--------------|---------|-----------|
| Information Element                           | Value/remark | Comment | Condition |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |              |         |           |
| Slots5  | 1            |         |           |
| }   |              |         |           |

## p-ZP-CSI-RS-ResourceSet

**Table 5.4.2.4-5: p-ZP-CSI-RS-ResourceSet**

| Derivation Path: Table 4.6.3-87   |              |                                    |           |
|---|--------------|------------------------------------|-----------|
| Information Element   | Value/remark | Comment                            | Condition |
| p-ZP-CSI-RS-ResourceSet ::= SEQUENCE {  |              |                                    |           |
| zp_CSI-RS_ResourceSetId   | 0            |                                    |           |
| zp-CSI-RS-ResourceldList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-Resourceld{ | 1 entry      |                                    |           |
| ZP-CSI-RS-Resourceld[1]   | 0            | entry 1<br>ZP CSI-RS<br>resource 1 |           |
| }   |              |                                    |           |
| }   |              |                                    |           |

## CSI-IM Configuration

## CSI-IM-Resource

**Table 5.4.2.4-6: CSI-IM-Resource**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                             |         |           |
|--|-----------------------------|---------|-----------|
| Information Element                          | Value/remark                | Comment | Condition |
| CSI-IM-Resource ::= SEQUENCE {               |                             |         |           |
| csi-IM-Resourceld                            | CSI-IM-Resourceld           |         |           |
| csi-IM-ResourceElementPattern CHOICE {       |                             |         |           |
| Pattern0 SEQUENCE {                          |                             |         |           |
| subcarrierLocation-p0                        | s4                          |         |           |
| symbolLocation-p0                            | 9                           |         | FR1       |
| }  |                             |         |           |
| }  |                             |         |           |
| freqBand                                     | CSI-<br>FrequencyOccupation |         |           |
| periodicityAndOffset                         | Not present                 |         |           |
| }  |                             |         |           |

## CSI-IM-Resourceld

**Table 5.4.2.4-7: CSI-IM-Resourceld**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CSI-IM-Resourceld                            | 0            |         |           |

## CSI-IM-ResourceSet

**Table 5.4.2.4-8: CSI-IM-ResourceSet**

| Derivation Path: TS 38.331 [6], clause 6.3.2                         |                      |         |           |
|--|----------------------|---------|-----------|
| Information Element  | Value/remark         | Comment | Condition |
| CSI-IM-ResourceSet ::= SEQUENCE {                                    |                      |         |           |
| csi-IM-ResourceSetId   | CSI-IM-ResourceSetId |         |           |
| csi-IM-Resources SEQUENCE (SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) { | 1 entry              |         |           |
| CSI-IM-Resourceld[1]   | CSI-IM-Resourceld    |         |           |
| }  |                      |         |           |
| }  |                      |         |           |

## CSI-IM-ResourceSetId

**Table 5.4.2.4-9: CSI-IM-ResourceSetId**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CSI-IM-ResourceSetId                         | 0            |         |           |

## CSI-IM-ResourceConfig

**Table 5.4.2.4-10: CSI-IM-ResourceConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2  |                      |         |           |
|---|----------------------|---------|-----------|
| Information Element   | Value/remark         | Comment | Condition |
| CSI-ResourceConfig ::= SEQUENCE {   |                      |         |           |
| csi-ResourceConfigId  | CSI-ResourceConfigId |         |           |
| csi-RS-ResourceSetList CHOICE {   |                      |         |           |
| csi-IM-ResourceSetList SEQUENCE (SIZE<br>(1..maxNrofCSI-IM-ResourceSetsPerConfig)) OF<br>CSI-IM-ResourceSetId { | 1 entry              |         |           |
| csi-IM-ResourceSetId[0]   | 0                    |         |           |
| }   |                      |         |           |
| }   |                      |         |           |
| bwp-Id  | BWP-Id               |         |           |
| resourceType  | periodic             |         |           |
| }   |                      |         |           |

## CSI-MeasConfig

**Table 5.4.2.4-11: CSI-MeasConfig**

| Derivation Path: Table 4.6.3-38  |  |                              |           |
|--|--|------------------------------|-----------|
| Information Element  | Value/remark                               | Comment                      | Condition |
| CSI-MeasConfig ::= SEQUENCE {  |  |                              |           |
| nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {          | 5 entries                                  |                              |           |
| NZP-CSI-RS-Resource[1]   | NZP-CSI-RS-Resource for TRS (1)            | entry 1<br>CSI-RS resource 1 |           |
| NZP-CSI-RS-Resource[2]   | NZP-CSI-RS-Resource for TRS (2)            | entry 2<br>CSI-RS resource 2 |           |
| NZP-CSI-RS-Resource[3]   | NZP-CSI-RS-Resource for TRS (3)            | entry 3<br>CSI-RS resource 3 |           |
| NZP-CSI-RS-Resource[4]   | NZP-CSI-RS-Resource for TRS (4)            | entry 4<br>CSI-RS resource 4 |           |
| NZP-CSI-RS-Resource[5]   | NZP-CSI-RS-Resource for CSI Acquisition    | entry 5<br>CSI-RS resource 5 |           |
| }  |  |                              |           |
| nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSet { | 2 entries                                  |                              |           |
| NZP-CSI-RS-ResourceSet[1]  | NZP-CSI-RS-ResourceSet for TRS             | entry 1                      |           |
| NZP-CSI-RS-ResourceSet[2]  | NZP-CSI-RS-ResourceSet for CSI Acquisition | entry 2                      |           |
| }  |  |                              |           |
| csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {                      | 1 entry                                    |                              |           |
| CSI-IM-Resource[1]   | CSI-IM-Resource                            |                              |           |
| }  |  |                              |           |
| csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSets)) OF CSI-IM-ResourceSet {             | 1 entry                                    |                              |           |
| CSI-IM-ResourceSet[1]  | CSI-IM-ResourceSet                         |                              |           |
| }  |  |                              |           |
| csi-SSB-ResourceSetToAddModList  | Not present                                |                              |           |
| csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {      | 3 entries                                  |                              |           |
| CSI-ResourceConfig[1]  | CSI-ResourceConfig for TRS                 | entry 1                      |           |
| CSI-ResourceConfig[2]  | CSI-ResourceConfig for CSI Acquisition     | entry 2                      |           |
| CSI-ResourceConfig[3]  | CSI-IM-ResourceConfig                      | entry 3                      |           |
| }  |  |                              |           |
| }  |  |                              |           |

## CSI-ReportConfig

**Table 5.4.2.4-12: CSI-ReportConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2                                       |   |         |           |
|--|---|---------|-----------|
| Information Element  | Value/remark                                | Comment | Condition |
| CSI-ReportConfig ::= SEQUENCE {  |   |         |           |
| reportConfigId   | CSI-ReportConfigId                          |         |           |
| carrier  | ServCellIndex                               |         |           |
| resourcesForChannelMeasurement   | CSI-ResourceConfigId<br>for CSI Acquisition |         |           |
| csi-IM-ResourcesForInterference  | CSI-ResourceConfigId<br>for CSI-IM          |         |           |
| nzp-CSI-RS-ResourcesForInterference  | not present                                 |         |           |
| reportConfigType CHOICE {  |   |         |           |
| periodic SEQUENCE {  |   |         |           |
| reportSlotConfig   | CSI-<br>ReportPeriodicityAndOffs<br>et      |         |           |
| pucch-CSI-ResourceList SEQUENCE (SIZE<br>(1..maxNrofBWPs)) OF PUCCH-CSI-Resource { |   |         |           |
| PUCCH-CSI-Resource [1]   | PUCCH-CSI-Resource                          |         |           |
| }  |   |         |           |
| }  |   |         |           |
| reportQuantity CHOICE {  |   |         |           |
| cri-RI-PMI-CQI   | NULL,                                       |         | FR1       |
| }  |   |         |           |
| reportFreqConfiguration SEQUENCE {   |   |         |           |
| cqi-FormatIndicator  | widebandCQI                                 |         |           |
| pmi-FormatIndicator  | widebandPMI                                 |         |           |
| csi-ReportingBand CHOICE {   |   |         |           |
| subbands7  | '1111111'B                                  |         |           |
| }  |   |         |           |
| }  |   |         |           |
| timeRestrictionForChannelMeasurements  | notConfigured                               |         |           |
| timeRestrictionForInterferenceMeasurements   | notConfigured                               |         |           |
| codebookConfig   | CodebookConfig                              |         |           |
| dummy  | Not present                                 |         |           |
| groupBasedBeamReporting CHOICE {   |   |         |           |
| disabled SEQUENCE {  |   |         |           |
| nrofReportedRS   | not present                                 |         |           |
| }  |   |         |           |
| }  |   |         |           |
| cqi-Table  | table2                                      |         | FR1       |
| subbandSize  | value2                                      |         |           |
| non-PMI-PortIndication   | Not present                                 |         |           |
| }  |   |         |           |

## CSI-ReportPeriodicityAndOffset

**Table 5.4.2.4-13: CSI-ReportPeriodicityAndOffset**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CSI-ReportPeriodicityAndOffset ::= CHOICE {  |              |         |           |
| slots10                                      | 9            |         | FR1_TDD   |
| slots5                                       | 0            |         | FR1_FDD   |
| }  |              |         |           |

## PUCCH-CSI-Resource

**Table 5.4.2.4-14: PUCCH-CSI-Resource**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PUCCH-CSI-Resource ::= SEQUENCE {            |              |         |           |
| uplinkBandwidthPartId                        | BWP-id       |         | FR1       |
| pucch-Resource                               | 8            |         | FR1       |
| }  |              |         |           |

## CodebookConfig

**Table 5.4.2.4-15: CodebookConfig**

| Derivation Path: Table 4.6.3-25  |              |         |           |
|----------------------------------|--------------|---------|-----------|
| Information Element              | Value/remark | Comment | Condition |
| CodebookConfig ::= SEQUENCE {    |              |         |           |
| codebookType CHOICE {            |              |         |           |
| type1 SEQUENCE {                 |              |         |           |
| subType CHOICE {                 |              |         |           |
| type1-SinglePanel SEQUENCE {     |              |         |           |
| nrOfAntennaPorts CHOICE {        |              |         |           |
| two CHOICE {                     |              |         |           |
| twoTX-CodebookSubsetRestriction  | '010000'B    |         |           |
| }                                |              |         |           |
| }                                |              |         |           |
| type1-SinglePanel-ri-Restriction | '11111111'B  |         |           |
| }                                |              |         |           |
| }                                |              |         |           |
| codebookMode                     | 1            |         |           |
| }                                |              |         |           |
| }                                |              |         |           |
| }                                |              |         |           |

## 5.4.2.5 Message contents for PMI reporting requirements

## NZP-CSI-RS for Tracking

FFS

## CSI-RS-ResourceMapping

**Table 5.4.2.5-1: CSI-RS-ResourceMapping for TRS**

| Derivation Path: Table 4.6.3-45       |                         |                                       |           |
|---------------------------------------|-------------------------|---------------------------------------|-----------|
| Information Element                   | Value/remark            | Comment                               | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                         |                                       |           |
| frequencyDomainAllocation CHOICE {    |                         |                                       |           |
| row1                                  | 0001                    | $k_0=0$ for CSI-RS resource 1,2,3,4   | TRS       |
| }                                     |                         |                                       |           |
| firstOFDMSymbolInTimeDomain           | 4                       | $I_0 = 4$ for CSI-RS resource 1 and 3 | TRS       |
|                                       | 8                       | $I_0 = 8$ for CSI-RS resource 2 and 4 | TRS       |
| nrofPorts                             | p1                      | 1 for CSI-RS resource 1,2,3,4         | TRS       |
| cdm-Type                              | noCDM                   |                                       | TRS       |
| density CHOICE{                       |                         |                                       |           |
| three                                 | Null                    |                                       | TRS       |
| }                                     |                         |                                       |           |
| freqBand                              | CSI-FrequencyOccupation |                                       | TRS       |
| }                                     |                         |                                       |           |

NZP CSI-RS for CSI Acquisition

FFS

## CSI-RS-ResourceMapping

**Table 5.4.2.5-2: CSI-RS-ResourceMapping**

| Derivation Path: Table 4.6.3-45       |                         |                              |           |
|---------------------------------------|-------------------------|------------------------------|-----------|
| Information Element                   | Value/remark            | Comment                      | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                         |                              |           |
| frequencyDomainAllocation CHOICE {    |                         |                              |           |
| row4                                  | 001                     | $K_0 = 0$ , row4             | 4Tx       |
| other                                 | 001100                  | $K_0 = 4$ , $K_1 = 6$ , row8 | 8Tx       |
| }                                     |                         |                              |           |
| nrofPorts                             | p4                      |                              | 4Tx       |
|                                       | p8                      |                              | 8Tx       |
| firstOFDMSymbolInTimeDomain           | 13                      | $I_0 = 13$                   | 4Tx       |
|                                       | 5                       | $I_0 = 5$                    | 8Tx       |
| cdm-Type                              | fd-CDM2                 |                              | 4Tx       |
|                                       | cdm4-FD2-TD2            |                              | 8Tx       |
| density CHOICE {                      |                         |                              |           |
| one                                   | NULL                    |                              |           |
| }                                     |                         |                              |           |
| freqBand                              | CSI-FrequencyOccupation |                              |           |
| }                                     |                         |                              |           |

| Condition | Explanation   |
|-----------|---|
| 4Tx       | For test cases using 4 CSI-RS ports for NZP-CSI-RS for CSI acquisition. |
| 8Tx       | For test cases using 8 CSI-RS ports for NZP-CSI-RS for CSI acquisition. |

ZP CSI-RS for CSI Acquisition

FFS

CSI-RS-ResourceMapping

**Table 5.4.2.5-3: ZP CSI-RS-ResourceMapping**

| Derivation Path: Table 4.6.3-45       |                            |         |           |
|---------------------------------------|----------------------------|---------|-----------|
| Information Element                   | Value/remark               | Comment | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                            |         |           |
| frequencyDomainAllocation CHOICE {    |                            |         |           |
| other                                 | 000100                     | K0 = 4  |           |
| }                                     |                            |         |           |
| nrofPorts                             | p4                         |         |           |
| firstOFDMSymbolInTimeDomain           | 9                          | I0 = 9  |           |
| cdm-Type                              | fd-CDM2                    |         |           |
| density CHOICE {                      |                            |         |           |
| one                                   | NULL                       |         |           |
| }                                     |                            |         |           |
| freqBand                              | ZP CSI-FrequencyOccupation |         |           |
| }                                     |                            |         |           |

PDSCH-Config

**Table 5.4.2.5-4: PDSCH-Config**

| Derivation Path: Table 4.6.3-100             |                          |         |           |
|--|--------------------------|---------|-----------|
| Information Element                          | Value/remark             | Comment | Condition |
| PDSCH-Config ::= SEQUENCE {                  |                          |         |           |
| aperiodic-ZP-CSI-RS-ResourceSetsToAddModList | Ap-ZP-CSI-RS-ResourceSet |         |           |
| p-ZP-CSI-RS-ResourceSet                      | Not present              |         |           |
| }  |                          |         |           |

Ap-ZP-CSI-RS-ResourceSet

**Table 5.4.2.5-5: Ap-ZP-CSI-RS-ResourceSet**

| Derivation Path: Table 4.6.3-87  |              |                                 |           |
|--|--------------|---------------------------------|-----------|
| Information Element  | Value/remark | Comment                         | Condition |
| aperiodic-ZP-CSI-RS-ResourceSetsToAddModList ::= SEQUENCE {  |              |                                 |           |
| zp_CSI-RS_ResourceSetId  | 0            |                                 |           |
| zp-CI-RS-ResourceldList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-Resourceld{ | 1 entry      |                                 |           |
| ZP-CSI-RS-Resourceld[1]  | 0            | entry 1<br>ZP CSI-RS resource 1 |           |
| }  |              |                                 |           |
| }  |              |                                 |           |

## CSI-ResourceConfig

**Table 5.4.2.5-6: CSI-ResourceConfig for CSI Acquisition**

| Derivation Path: Table 4.6.3-41   |              |         |           |
|---|--------------|---------|-----------|
| Information Element   | Value/remark | Comment | Condition |
| CSI-ResourceConfig ::= SEQUENCE {   |              |         |           |
| csi-ResourceConfigId  | 1            |         |           |
| csi-RS-ResourceSetList CHOICE {   |              |         |           |
| nzp-CSI-RS-SSB SEQUENCE {   |              |         |           |
| nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) | 1 entry      |         |           |
| OF NZP-CSI-RS-ResourceSetId {   |              |         |           |
| NZP-CSI-RS-ResourceSetId[1]   | 1            | entry 1 |           |
| }   |              |         |           |
| csi-SSB-ResourceSetList   | Not present  |         |           |
| }   |              |         |           |
| }   |              |         |           |
| bwp-Id  | BWP-Id       |         |           |
| resourceType  | aperiodic    |         |           |
| }   |              |         |           |

## CSI-IM Configuration

FFS

## CSI-IM-Resource

**Table 5.4.2.5-7: CSI-IM-Resource**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |                         |         |           |
|--|-------------------------|---------|-----------|
| Information Element                          | Value/remark            | Comment | Condition |
| CSI-IM-Resource ::= SEQUENCE {               |                         |         |           |
| csi-IM-Resourceld                            | CSI-IM-Resourceld       |         |           |
| csi-IM-ResourceElementPattern CHOICE {       |                         |         |           |
| Pattern0 SEQUENCE {                          |                         |         |           |
| subcarrierLocation-p0                        | s4                      |         |           |
| symbolLocation-p0                            | 9                       |         | FR1       |
| }  |                         |         |           |
| }  |                         |         |           |
| freqBand                                     | CSI-FrequencyOccupation |         |           |
| periodicityAndOffset                         | Not present             |         |           |
| }  |                         |         |           |

## CSI-IM-Resourceld

**Table 5.4.2.5-8: CSI-IM-Resourceld**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CSI-IM-Resourceld                            | 0            |         |           |

## CSI-IM-ResourceSet

**Table 5.4.2.5-9: CSI-IM-ResourceSet**

| Derivation Path: TS 38.331 [6], clause 6.3.2                            |                      |         |           |
|---|----------------------|---------|-----------|
| Information Element   | Value/remark         | Comment | Condition |
| CSI-IM-ResourceSet ::= SEQUENCE {                                       |                      |         |           |
| csi-IM-ResourceSetId  | CSI-IM-ResourceSetId |         |           |
| csi-IM-Resources SEQUENCE<br>(SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) { | 1 entry              |         |           |
| CSI-IM-Resourceld[1]  | CSI-IM-Resourceld    | entry 1 |           |
| }   |                      |         |           |
| }   |                      |         |           |

## CSI-IM-ResourceSetId

**Table 5.4.2.5-10: CSI-IM-ResourceSetId**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CSI-IM-ResourceSetId                         | 0            |         |           |

## CSI-IM-ResourceConfig

**Table 5.4.2.5-11: CSI-IM-ResourceConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2  |                      |         |           |
|---|----------------------|---------|-----------|
| Information Element   | Value/remark         | Comment | Condition |
| CSI-ResourceConfig ::= SEQUENCE {   |                      |         |           |
| csi-ResourceConfigId  | CSI-ResourceConfigId |         |           |
| csi-RS-ResourceSetList CHOICE {   |                      |         |           |
| csi-IM-ResourceSetList SEQUENCE (SIZE<br>(1..maxNrofCSI-IM-ResourceSetsPerConfig)) OF<br>CSI-IM-ResourceSetId { | 1 entry              |         |           |
| csi-IM-ResourceSetId[0]   | 0                    |         |           |
| }   |                      |         |           |
| }   |                      |         |           |
| bwp-Id  | BWP-Id               |         |           |
| resourceType  | aperiodic            |         |           |
| }   |                      |         |           |

## CSI-MeasConfig

**Table 5.4.2.5-12: CSI-MeasConfig**

| Derivation Path: Table 4.6.3-38  |  |                              |           |
|--|--|------------------------------|-----------|
| Information Element  | Value/remark                               | Comment                      | Condition |
| CSI-MeasConfig ::= SEQUENCE {  |  |                              |           |
| nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {          | 5 entries                                  |                              |           |
| NZP-CSI-RS-Resource[1]   | NZP-CSI-RS-Resource for TRS (1)            | entry 1<br>CSI-RS resource 1 |           |
| NZP-CSI-RS-Resource[2]   | NZP-CSI-RS-Resource for TRS (2)            | entry 2<br>CSI-RS resource 2 |           |
| NZP-CSI-RS-Resource[3]   | NZP-CSI-RS-Resource for TRS (3)            | entry 3<br>CSI-RS resource 3 |           |
| NZP-CSI-RS-Resource[4]   | NZP-CSI-RS-Resource for TRS (4)            | entry 4<br>CSI-RS resource 4 |           |
| NZP-CSI-RS-Resource[5]   | NZP-CSI-RS-Resource for CSI Acquisition    | entry 5<br>CSI-RS resource 5 |           |
| }  |  |                              |           |
| nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSet { | 2 entries                                  |                              |           |
| NZP-CSI-RS-ResourceSet[1]  | NZP-CSI-RS-ResourceSet for TRS             | entry 1                      |           |
| NZP-CSI-RS-ResourceSet[2]  | NZP-CSI-RS-ResourceSet for CSI Acquisition | entry 2                      |           |
| }  |  |                              |           |
| csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {                      | 1 entry                                    |                              |           |
| CSI-IM-Resource[1]   | CSI-IM-Resource                            |                              |           |
| }  |  |                              |           |
| csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSets)) OF CSI-IM-ResourceSet {             | 1 entry                                    |                              |           |
| CSI-IM-ResourceSet[1]  | CSI-IM-ResourceSet                         |                              |           |
| }  |  |                              |           |
| csi-SSB-ResourceSetToAddModList  | Not present                                |                              |           |
| csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {      | 3 entries                                  |                              |           |
| CSI-ResourceConfig[1]  | CSI-ResourceConfig for TRS                 | entry 1                      |           |
| CSI-ResourceConfig[2]  | CSI-ResourceConfig for CSI Acquisition     | entry 2                      |           |
| CSI-ResourceConfig[3]  | CSI-IM-ResourceConfig                      | entry 3                      |           |
| }  |  |                              |           |
| }  |  |                              |           |

## CSI-ReportConfig

**Table 5.4.2.5-13: CSI-ReportConfig**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |   |         |           |
|--|---|---------|-----------|
| Information Element                          | Value/remark                                | Comment | Condition |
| CSI-ReportConfig ::= SEQUENCE {              |   |         |           |
| reportConfigId                               | CSI-ReportConfigId                          |         |           |
| carrier                                      | ServCellIndex                               |         |           |
| resourcesForChannelMeasurement               | CSI-ResourceConfigId<br>for CSI Acquisition |         |           |
| csi-IM-ResourcesForInterference              | CSI-ResourceConfigId<br>for CSI-IM          |         |           |
| nzp-CSI-RS-ResourcesForInterference          | not present                                 |         |           |
| reportConfigType CHOICE {                    |   |         |           |
| aperiodic SEQUENCE {                         |   |         |           |
| reportSlotOffsetList SEQUENCE {              | 2 entry                                     |         |           |
| reportSlotOffsetList[1]                      | 4   | FDD_4Tx |           |
| reportSlotOffsetList[1]                      | 5   | FDD_8Tx |           |
| reportSlotOffsetList[1]                      | 8   | TDD     |           |
| reportSlotOffsetList[2]                      | 4   | FDD_4Tx |           |
| reportSlotOffsetList[2]                      | 5   | FDD_8Tx |           |
| reportSlotOffsetList[2]                      | 8   | TDD     |           |
| }  |   |         |           |
| }  |   |         |           |
| reportQuantity CHOICE {                      |   |         |           |
| cri-RI-PMI-CQI                               | NULL  |         |           |
| }  |   |         |           |
| reportFreqConfiguration SEQUENCE {           |   |         |           |
| cqi-FormatIndicator                          | widebandCQI                                 |         |           |
| pmi-FormatIndicator                          | widebandPMI                                 |         |           |
| csi-ReportingBand CHOICE {                   |   |         |           |
| subbands7                                    | '1111111'B                                  |         |           |
| }  |   |         |           |
| }  |   |         |           |
| timeRestrictionForChannelMeasurements        | notConfigured                               |         |           |
| timeRestrictionForInterferenceMeasurements   | notConfigured                               |         |           |
| codebookConfig                               | CodebookConfig                              |         |           |
| dummy  | Not present                                 |         |           |
| groupBasedBeamReporting CHOICE {             |   |         |           |
| disabled SEQUENCE {                          |   |         |           |
| nrofReportedRS                               | not present                                 |         |           |
| }  |   |         |           |
| }  |   |         |           |
| cqi-Table                                    | table1                                      |         |           |
| subbandSize                                  | value2                                      |         |           |
| non-PMI-PortIndication                       | Not present                                 |         |           |
| }  |   |         |           |

## CodebookConfig

**Table 5.4.2.5-14: CodebookConfig**

| Derivation Path: Table 4.6.3-25       |                            |         |            |
|---------------------------------------|----------------------------|---------|------------|
| Information Element                   | Value/remark               | Comment | Condition  |
| CodebookConfig ::= SEQUENCE {         |                            |         |            |
| codebookType CHOICE {                 |                            |         |            |
| type1 SEQUENCE {                      |                            |         |            |
| subType CHOICE {                      |                            |         |            |
| type1-SinglePanel SEQUENCE {          |                            |         |            |
| nrOfAntennaPorts CHOICE {             |                            |         |            |
| moreThanTwo SEQUENCE {                |                            |         |            |
| n1-n2 CHOICE {                        |                            |         |            |
| two-one-Type1-SinglePanel-Restriction | '11111111'B                |         |            |
| }                                     |                            |         |            |
| type1-SinglePanel-                    |                            |         |            |
| codebookSubsetRestriction-i2          | Not present                |         |            |
| }                                     |                            |         |            |
| type1-SinglePanel-ri-Restriction      | '00000001'B<br>'00000010'B |         | 4Tx<br>8Tx |
| }                                     |                            |         |            |
| codebookMode                          | 1                          |         |            |
| }                                     |                            |         |            |
| }                                     |                            |         |            |
| }                                     |                            |         |            |

## CSI-AperiodicTriggerStateList

**Table 5.4.2.5-15: CSI-AperiodicTriggerStateList**

| Derivation Path: Table 4.6.3-32   |              |         |           |
|---|--------------|---------|-----------|
| Information Element   | Value/remark | Comment | Condition |
| CSI-AperiodicTriggerStateList ::= SEQUENCE (SIZE(1..maxNrOfCSI-AperiodicTriggers)) OF CSI-AperiodicTriggerState {             | 1 entry      |         |           |
| CSI-AperiodicTriggerState[1] SEQUENCE {   |              | entry 1 |           |
| associatedReportConfigInfoList SEQUENCE (SIZE(1..maxNrofReportConfigPerAperiodicTrigger)) OF CSI-AssociatedReportConfigInfo { | 1 entry      |         |           |
| CSI-AssociatedReportConfigInfo[1] SEQUENCE {  |              | entry 1 |           |
| reportConfigId  | 0            |         |           |
| resourcesForChannel CHOICE {  |              |         |           |
| nzp-CSI-RS SEQUENCE {   |              |         |           |
| resourceSet   | 1            |         |           |
| qcl-info SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF TCI-StateId {  | 1 entry      |         |           |
| TCI-StateId[1]  | 1            | entry 1 |           |
| }   |              |         |           |
| }   |              |         |           |
| }   |              |         |           |
| csi-IM-ResourcesforInterference   | 1            |         |           |
| nzp-CSI-RS-ResourcesforInterference   | Not present  |         |           |
| }   |              |         |           |
| }   |              |         |           |
| }   |              |         |           |

### 5.4.2.6 Message contents for RI reporting requirements

NZP-CSI-RS for Tracking

CSI-RS-ResourceMapping

**Table 5.4.2.6-1: CSI-RS-ResourceMapping for TRS**

| Derivation Path: Table 4.6.3-45       |                         |                                       |           |
|---------------------------------------|-------------------------|---------------------------------------|-----------|
| Information Element                   | Value/remark            | Comment                               | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                         |                                       |           |
| frequencyDomainAllocation CHOICE {    |                         |                                       |           |
| row1                                  | 0001                    | $k_0=0$ for CSI-RS resource 1,2,3,4   | TRS       |
| }                                     |                         |                                       |           |
| firstOFDMSymbolInTimeDomain           | 4                       | $l_0 = 4$ for CSI-RS resource 1 and 3 | TRS       |
|                                       | 8                       | $l_0 = 8$ for CSI-RS resource 2 and 4 | TRS       |
| nrofPorts                             | p1                      | 1 for CSI-RS resource 1,2,3,4         | TRS       |
| cdm-Type                              | noCDM                   |                                       | TRS       |
| density CHOICE{                       |                         |                                       |           |
| three                                 | Null                    |                                       | TRS       |
| }                                     |                         |                                       |           |
| freqBand                              | CSI-FrequencyOccupation |                                       | TRS       |
| }                                     |                         |                                       |           |

NZP CSI-RS for CSI Acquisition

CSI-RS-ResourceMapping

**Table 5.4.2.6-2: CSI-RS-ResourceMapping**

| Derivation Path: Table 4.6.3-45       |                         |                  |           |
|---------------------------------------|-------------------------|------------------|-----------|
| Information Element                   | Value/remark            | Comment          | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                         |                  |           |
| frequencyDomainAllocation CHOICE {    |                         |                  |           |
| row4                                  | 001                     | $K_0 = 0$ , row4 | 4Tx       |
| other                                 | 001000                  | $K_0 = 6$ , row3 | 2Tx       |
| }                                     |                         |                  |           |
| nrofPorts                             | p4                      |                  | 4Tx       |
|                                       | p2                      |                  | 2Tx       |
| firstOFDMSymbolInTimeDomain           | 13                      | $l_0 = 13$       | 2Tx, 4Tx  |
| cdm-Type                              | fd-CDM2                 |                  | 2Tx, 4Tx  |
| density CHOICE {                      |                         |                  |           |
| one                                   | NULL                    |                  |           |
| }                                     |                         |                  |           |
| freqBand                              | CSI-FrequencyOccupation |                  |           |
| }                                     |                         |                  |           |

| Condition | Explanation   |
|-----------|---|
| 2Tx       | For test cases using 2 CSI-RS ports for NZP-CSI-RS for CSI acquisition. |
| 4Tx       | For test cases using 4 CSI-RS ports for NZP-CSI-RS for CSI acquisition. |

**Table 5.4.2.6-3: CSI-ResourcePeriodicityAndOffset for CSI Acquisition**

| Derivation Path: Table 4.6.3-43               |              |         |           |
|---|--------------|---------|-----------|
| Information Element                           | Value/remark | Comment | Condition |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |              |         |           |
| Slots5  | 1            |         | FDD       |
| Slots10                                       | 1            |         | TDD       |
| }   |              |         |           |

ZP CSI-RS for CSI Acquisition

CSI-RS-ResourceMapping

**Table 5.4.2.6-4: ZP CSI-RS-ResourceMapping**

| Derivation Path: Table 4.6.3-45       |                            |              |           |
|---------------------------------------|----------------------------|--------------|-----------|
| Information Element                   | Value/remark               | Comment      | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                            |              |           |
| frequencyDomainAllocation CHOICE {    |                            |              |           |
| other                                 | 000100                     | K0 = 4, row5 |           |
| }                                     |                            |              |           |
| nrofPorts                             | p4                         |              |           |
| firstOFDMSymbolInTimeDomain           | 9                          | I0 = 9       |           |
| cdm-Type                              | fd-CDM2                    |              |           |
| density CHOICE {                      |                            |              |           |
| one                                   | NULL                       |              |           |
| }                                     |                            |              |           |
| freqBand                              | ZP CSI-FrequencyOccupation |              |           |
| }                                     |                            |              |           |

CSI-ResourcePeriodicityAndOffset

**Table 5.4.2.6-5: ZP CSI-ResourcePeriodicityAndOffset**

| Derivation Path: Table 4.6.3-43               |              |         |           |
|---|--------------|---------|-----------|
| Information Element                           | Value/remark | Comment | Condition |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |              |         |           |
| Slots5  | 1            |         | FDD       |
| Slots10                                       | 1            |         | TDD       |
| }   |              |         |           |

PDSCH-Config

**Table 5.4.2.6-6: PDSCH-Config**

| Derivation Path: Table 4.6.3-100     |                         |         |           |
|--------------------------------------|-------------------------|---------|-----------|
| Information Element                  | Value/remark            | Comment | Condition |
| PDSCH-Config ::= SEQUENCE {          |                         |         |           |
| p-ZP-CSI-RS-ResourceSetsToAddModList | p-ZP-CSI-RS-ResourceSet |         |           |
| }                                    |                         |         |           |

## p-ZP-CSI-RS-ResourceSet

**Table 5.4.2.6-7: p-ZP-CSI-RS-ResourceSet**

| Derivation Path: Table 4.6.3-87   |              |                                 |           |
|---|--------------|---------------------------------|-----------|
| Information Element   | Value/remark | Comment                         | Condition |
| p-ZP-CSI-RS-ResourceSetsToAddModList ::= SEQUENCE {   |              |                                 |           |
| zp_CSI-RS_ResourceSetId   | 0            |                                 |           |
| zp-CSI-RS-ResourceldList SEQUENCE (SIZE (1..maxNrofZP-CSI-RS-ResourcesPerSet)) OF ZP-CSI-RS-Resourceld{ | 1 entry      |                                 |           |
| ZP-CSI-RS-Resourceld[1]   | 0            | entry 1<br>ZP CSI-RS resource 1 |           |
| }   |              |                                 |           |
| }   |              |                                 |           |

## CSI-ResourceConfig

**Table 5.4.2.6-8: CSI-ResourceConfig for CSI Acquisition**

| Derivation Path: Table 4.6.3-41   |              |         |           |
|---|--------------|---------|-----------|
| Information Element   | Value/remark | Comment | Condition |
| CSI-ResourceConfig ::= SEQUENCE {   |              |         |           |
| csi-ResourceConfigId  | 1            |         |           |
| csi-RS-ResourceSetList CHOICE {   |              |         |           |
| nzp-CSI-RS-SSB SEQUENCE {   |              |         |           |
| nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId { | 1 entry      |         |           |
| NZP-CSI-RS-ResourceSetId[1]   | 1            | entry 1 |           |
| }   |              |         |           |
| csi-SSB-ResourceSetList   | Not present  |         |           |
| }   |              |         |           |
| }   |              |         |           |
| bwp-Id  | BWP-Id       |         |           |
| resourceType  | periodic     |         |           |
| }   |              |         |           |

## CSI-IM Configuration

## CSI-IM-Resource

**Table 5.4.2.6-9: CSI-IM-Resource**

| Derivation Path: Table 4.6.3-34        |                                  |         |           |
|--|----------------------------------|---------|-----------|
| Information Element                    | Value/remark                     | Comment | Condition |
| CSI-IM-Resource ::= SEQUENCE {         |                                  |         |           |
| csi-IM-Resourceld                      | CSI-IM-Resourceld                |         |           |
| csi-IM-ResourceElementPattern CHOICE { |                                  |         |           |
| Pattern0 SEQUENCE {                    |                                  |         |           |
| subcarrierLocation-p0                  | s4                               |         |           |
| symbolLocation-p0                      | 9                                |         | FR1       |
| }                                      |                                  |         |           |
| }                                      |                                  |         |           |
| freqBand                               | CSI-FrequencyOccupation          |         |           |
| periodicityAndOffset                   | CSI-ResourcePeriodicityAndOffset |         |           |
| }                                      |                                  |         |           |

**Table 5.4.2.6-10: CSI-ResourcePeriodicityAndOffset**

| Derivation Path: Table 4.6.3-43               |              |         |           |
|---|--------------|---------|-----------|
| Information Element                           | Value/remark | Comment | Condition |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |              |         |           |
| Slots5  | 1            |         | FDD       |
| Slots10                                       | 1            |         | TDD       |
| }   |              |         |           |

## CSI-IM-Resourceld

**Table 5.4.2.6-11: CSI-IM-Resourceld**

| Derivation Path: Table 4.6.3-35 |              |         |           |
|---------------------------------|--------------|---------|-----------|
| Information Element             | Value/remark | Comment | Condition |
| CSI-IM-Resourceld               | 0            |         |           |

## CSI-IM-ResourceSet

**Table 5.4.2.6-12: CSI-IM-ResourceSet**

| Derivation Path: Table 4.6.3-36                                      |                      |         |           |
|--|----------------------|---------|-----------|
| Information Element  | Value/remark         | Comment | Condition |
| CSI-IM-ResourceSet ::= SEQUENCE {                                    |                      |         |           |
| csi-IM-ResourceSetId   | CSI-IM-ResourceSetId |         |           |
| csi-IM-Resources SEQUENCE {SIZE(1..maxNrofCSI-IM-ResourcesPerSet)) { | 1 entry              |         |           |
| CSI-IM-Resourceld[1]   | CSI-IM-Resourceld    | entry 1 |           |
| }  |                      |         |           |
| }  |                      |         |           |

## CSI-IM-ResourceSetId

**Table 5.4.2.6-13: CSI-IM-ResourceSetId**

| Derivation Path: Table 4.6.3-37 |              |         |           |
|---------------------------------|--------------|---------|-----------|
| Information Element             | Value/remark | Comment | Condition |
| CSI-IM-ResourceSetId            | 0            |         |           |

## CSI-IM-ResourceConfig

**Table 5.4.2.6-14: CSI-IM-ResourceConfig**

| Derivation Path: Table 4.6.3-41  |                      |         |           |
|--|----------------------|---------|-----------|
| Information Element  | Value/remark         | Comment | Condition |
| CSI-ResourceConfig ::= SEQUENCE {  |                      |         |           |
| csi-ResourceConfigId   | CSI-ResourceConfigId |         |           |
| csi-RS-ResourceSetList CHOICE {  |                      |         |           |
| csi-IM-ResourceSetList SEQUENCE ( <b>SIZE</b><br>(1..maxNrofCSI-IM-ResourceSetsPerConfig)) <b>OF</b><br>CSI-IM-ResourceSetId { | 1 entry              |         |           |
| csi-IM-ResourceSetId[0]  | 0                    |         |           |
| }  |                      |         |           |
| }  |                      |         |           |
| bwp-Id   | BWP-Id               |         |           |
| resourceType   | periodic             |         |           |
| }  |                      |         |           |

## CSI-MeasConfig

**Table 5.4.2.6-15: CSI-MeasConfig**

| Derivation Path: Table 4.6.3-38  |  |                              |           |
|--|--|------------------------------|-----------|
| Information Element  | Value/remark                               | Comment                      | Condition |
| CSI-MeasConfig ::= SEQUENCE {  |  |                              |           |
| nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {          | 5 entries                                  |                              |           |
| NZP-CSI-RS-Resource[1]   | NZP-CSI-RS-Resource for TRS (1)            | entry 1<br>CSI-RS resource 1 |           |
| NZP-CSI-RS-Resource[2]   | NZP-CSI-RS-Resource for TRS (2)            | entry 2<br>CSI-RS resource 2 |           |
| NZP-CSI-RS-Resource[3]   | NZP-CSI-RS-Resource for TRS (3)            | entry 3<br>CSI-RS resource 3 |           |
| NZP-CSI-RS-Resource[4]   | NZP-CSI-RS-Resource for TRS (4)            | entry 4<br>CSI-RS resource 4 |           |
| NZP-CSI-RS-Resource[5]   | NZP-CSI-RS-Resource for CSI Acquisition    | entry 5<br>CSI-RS resource 5 |           |
| }  |  |                              |           |
| nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSet { | 2 entries                                  |                              |           |
| NZP-CSI-RS-ResourceSet[1]  | NZP-CSI-RS-ResourceSet for TRS             | entry 1                      |           |
| NZP-CSI-RS-ResourceSet[2]  | NZP-CSI-RS-ResourceSet for CSI Acquisition | entry 2                      |           |
| }  |  |                              |           |
| csi-IM-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-Resources)) OF CSI-IM-Resource {                      | 1 entry                                    |                              |           |
| CSI-IM-Resource[1]   | CSI-IM-Resource                            |                              |           |
| }  |  |                              |           |
| csi-IM-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofCSI-IM-ResourceSets)) OF CSI-IM-ResourceSet {             | 1 entry                                    |                              |           |
| CSI-IM-ResourceSet[1]  | CSI-IM-ResourceSet                         |                              |           |
| }  |  |                              |           |
| csi-SSB-ResourceSetToAddModList  | Not present                                |                              |           |
| csi-ResourceConfigToAddModList SEQUENCE (SIZE (1..maxNrofCSI-ResourceConfigurations)) OF CSI-ResourceConfig {      | 3 entries                                  |                              |           |
| CSI-ResourceConfig[1]  | CSI-ResourceConfig for TRS                 | entry 1                      |           |
| CSI-ResourceConfig[2]  | CSI-ResourceConfig for CSI Acquisition     | entry 2                      |           |
| CSI-ResourceConfig[3]  | CSI-IM-ResourceConfig                      | entry 3                      |           |
| }  |  |                              |           |
| }  |  |                              |           |

## CSI-ReportConfig

**Table 5.4.2.6-16: CSI-ReportConfig**

| Derivation Path: Table 4.6.3-39  |   |         |           |
|--|---|---------|-----------|
| Information Element  | Value/remark                                | Comment | Condition |
| CSI-ReportConfig ::= SEQUENCE {  |   |         |           |
| reportConfigId   | CSI-ReportConfigId                          |         |           |
| carrier  | ServCellIndex                               |         |           |
| resourcesForChannelMeasurement   | CSI-ResourceConfigId<br>for CSI Acquisition |         |           |
| csi-IM-ResourcesForInterference  | CSI-ResourceConfigId<br>for CSI-IM          |         |           |
| nzp-CSI-RS-ResourcesForInterference  | not present                                 |         |           |
| reportConfigType CHOICE {  |   |         |           |
| periodic SEQUENCE {  |   |         |           |
| reportSlotConfig   | CSI-<br>ReportPeriodicityAndOffs<br>et      |         |           |
| pucch-CSI-ResourceList SEQUENCE (SIZE<br>(1..maxNrofBWPs)) OF PUCCH-CSI-Resource { |   |         |           |
| PUCCH-CSI-Resource [1]   | PUCCH-CSI-Resource                          |         |           |
| }  |   |         |           |
| }  |   |         |           |
| reportQuantity CHOICE {  |   |         |           |
| cri-RI-PMI-CQI   | NULL,                                       |         | FR1       |
| }  |   |         |           |
| reportFreqConfiguration SEQUENCE {   |   |         |           |
| cqi-FormatIndicator  | widebandCQI                                 |         |           |
| pmi-FormatIndicator  | widebandPMI                                 |         |           |
| csi-ReportingBand CHOICE {   |   |         |           |
| subbands7  | '1111111'B                                  |         |           |
| }  |   |         |           |
| }  |   |         |           |
| timeRestrictionForChannelMeasurements  | notConfigured                               |         |           |
| timeRestrictionForInterferenceMeasurements   | notConfigured                               |         |           |
| codebookConfig   | CodebookConfig                              |         |           |
| dummy  | Not present                                 |         |           |
| groupBasedBeamReporting CHOICE {   |   |         |           |
| disabled SEQUENCE {  |   |         |           |
| nrofReportedRS   | not present                                 |         |           |
| }  |   |         |           |
| }  |   |         |           |
| cqi-Table  | table2                                      |         | FR1       |
| subbandSize  | value2                                      |         |           |
| non-PMI-PortIndication   | Not present                                 |         |           |
| }  |   |         |           |

## CodebookConfig

**Table 5.4.2.6-17: CodebookConfig**

| Derivation Path: Table 4.6.3-25  |  |         |   |
|----------------------------------|--|---------|---|
| Information Element              | Value/remark                                     | Comment | Condition   |
| CodebookConfig ::= SEQUENCE {    |  |         |   |
| codebookType CHOICE {            |  |         |   |
| type1 SEQUENCE {                 |  |         |   |
| subType CHOICE {                 |  |         |   |
| type1-SinglePanel SEQUENCE {     |  |         |   |
| nrOfAntennaPorts CHOICE {        |  |         |   |
| two CHOICE {                     |  |         |   |
| twoTX-CodebookSubsetRestriction  | '010000'B<br>'010011'B<br>'000011'B<br>'111111'B |         | Fixed rank2,<br>2x2, 2x4<br><br>Follow rank,<br>2x2, 2x4<br><br>Fixed rank1,<br>2x2, 2x4<br><br>4x4 |
| }                                |  |         |   |
| }                                |  |         |   |
| type1-SinglePanel-ri-Restriction | '11111111'B<br>'00000010'B<br>'00001111'B        |         | 2x2, 2x4<br><br>Fixed rank2,<br>4x4<br><br>Follow RI,<br>4x4  |
| }                                |  |         |   |
| }                                |  |         |   |
| codebookMode                     | 1  |         |   |
| }                                |  |         |   |
| }                                |  |         |   |

## CSI-ReportPeriodicityAndOffset

**Table 5.4.2.4-18: CSI-ReportPeriodicityAndOffset**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| CSI-ReportPeriodicityAndOffset ::= CHOICE {  |              |         |           |
| slots10                                      | 9            |         | FR1_TDD   |
| slots5                                       | 0            |         | FR1_FDD   |
| }  |              |         |           |

## PUCCH-CSI-Resource

**Table 5.4.2.4-19: PUCCH-CSI-Resource**

| Derivation Path: TS 38.331 [6], clause 6.3.2 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| PUCCH-CSI-Resource ::= SEQUENCE {            |              |         |           |
| uplinkBandwidthPartId                        | BWP-id       |         | FR1       |
| pucch-Resource                               | 8            |         | FR1       |
| }  |              |         |           |

## 5.5 Common procedures for RF testing

### 5.5.1 Procedure to configure SCC for NR RF CA testing

#### 5.5.1.1 Scope

The purpose of this procedure is to establish one or more SCC for NR CA testing.

#### 5.5.1.2 Procedure description

##### 5.5.1.2.1 Initial conditions

UE is operating in NR RRC\_CONNECTED state on NR Cell 1 without any SCell configured.

System Simulator:

- SS configures the number of SCells used by the test case using NR parameters for NR Cell 2 for SCC1, NR Cell 3 for SCC2, NR Cell 4 for SCC3 etc. as specified in Table 4.4.2-2.
- System information combination NR-2 as defined in clause 4.4.3.1.2 is used in all NR cells.

#### 5.5.1.2.2 Procedure sequence

**Table 5.5.1.2.2-1: Procedure to configure SCC**

| St | Procedure  | Message Sequence |                                      | TP | Verdict |
|----|--|------------------|--------------------------------------|----|---------|
|    |  | U - S            | Message                              |    |         |
| 1  | The SS transmits an RRCCoreConfiguration message including sCellToAddModList with SCell addition for the SCC under test. | <--              | NR RRC: RRCCoreConfiguration         | -  | -       |
| 2  | The UE transmits an RRCCoreConfigurationComplete message.  | -->              | NR RRC: RRCCoreConfigurationComplete | -  | -       |

#### 5.5.1.2.3 Specific message contents

**Table 5.5.1.2.3-1: RRCCoreConfiguration-SCell(n)**

| Derivation Path: Table 4.6.1-13 with condition SCell_add |                          |                                   |           |
|--|--------------------------|-----------------------------------|-----------|
| Information Element                                      | Value/remark             | Comment                           | Condition |
| RRCCoreConfiguration ::= SEQUENCE {                      |                          |                                   |           |
| criticalExtensions CHOICE {                              |                          |                                   |           |
| rrcReconfiguration ::= SEQUENCE {                        |                          |                                   |           |
| nonCriticalExtension SEQUENCE {                          |                          |                                   |           |
| masterCellGroup  | CellGroupConfig-SCell(n) | n is number of SCell to be added. |           |
| }  |                          |                                   |           |
| }  |                          |                                   |           |
| }  |                          |                                   |           |
| }  |                          |                                   |           |

**Table 5.5.1.2.3-2: CellGroupConfig-SCell(n) (Table 5.5.1.2.3-1)**

| Derivation Path: Table 4.6.3-19 with condition SCell_add              |   |                                 |           |
|---|---|---------------------------------|-----------|
| Information Element   | Value/remark                                      | Comment                         | Condition |
| CellGroupConfig ::= SEQUENCE {  |   |                                 |           |
| sCellToAddModList SEQUENCE (SIZE (1..maxNrofSCells)) OF SCellConfig { | n entries   | n the number of SCC to be added |           |
| SCellConfig[k, k=1..n] SEQUENCE {                                     |   | entry (1..n)                    |           |
| sCellIndex  |   |                                 |           |
| sCellConfigCommon   | ServingCellConfigComm on with condition SCell_add |                                 |           |
| }   |   |                                 |           |
| }   |   |                                 |           |

## 5.5.2 Procedure to configure SCC for EN-DC RF CA testing

### 5.5.2.1 Scope

The purpose of this procedure is to establish one or more SCC for EN-DC CA testing.

### 5.5.2.2 Procedure description

#### 5.5.2.2.1 Initial conditions

The UE is in RRC\_CONNECTED state.

#### 5.5.2.2.2 Procedure sequence

**Table 5.5.2.2.2-1: Procedure to configure SCC**

| St      | Procedure  | Message Sequence |   | TP | Verdict |
|---------|--|------------------|---|----|---------|
|         |  | U - S            | Message   |    |         |
| 1       | The SS transmits an <i>RRCConnectionReconfiguration</i> message using n.   | <--              | RRC:<br><i>RRCConnectionReconfiguration</i>         | -  | -       |
| 2       | The UE transmits an <i>RRCConnectionReconfigurationComplete</i> message.   | -->              | RRC:<br><i>RRCConnectionReconfigurationComplete</i> | -  | -       |
| -       | EXCEPTION: Steps 3a1 to 3a3 describe the SS sequence depending on procedure parameters; the "lower case letter" identifies a step sequence that take place if a procedure parameter has a particular value | -                | -   | -  | -       |
| 3a1-3a3 | IF E-UTRA SCC > 0, same as TS 36.508 [2] table 5.2A.4-1, steps 1-3.  | -                | -   | -  | -       |

Note 1: n > 0 in step 1.

## 5.5.2.2.3 Specific message contents

**Table 5.5.2.2.3-1: RRCReconfiguration (step 1, Table 5.5.2.2.1)**

| Derivation Path: Table 4.6.1-13 with condition EN-DC_SCell_add |                     |                                 |           |
|--|---------------------|---------------------------------|-----------|
| Information Element  | Value/remark        | Comment                         | Condition |
| RRCReconfiguration ::= SEQUENCE {                              |                     |                                 |           |
| criticalExtensions CHOICE {                                    |                     |                                 |           |
| rrcReconfiguration ::= SEQUENCE {                              |                     |                                 |           |
| secondaryCellGroup   | CellGroupConfig (n) | n is number of SCC to be added. |           |
| }  |                     |                                 |           |
| }  |                     |                                 |           |
| }  |                     |                                 |           |

**Table 5.5.2.2.3-2: CellGroupConfig (n) (Table 5.5.2.2.3-1)**

| Derivation Path: Table 4.6.1-13 with condition SCell_add              |  |  |           |
|---|--|--|-----------|
| Information Element   | Value/remark                                     | Comment                                      | Condition |
| CellGroupConfig ::= SEQUENCE {  |  |  |           |
| sCellToAddModList SEQUENCE (SIZE (1..maxNrofSCells)) OF SCellConfig { | n entries  | n is equal to the number of SCCs to be added |           |
| SCellConfig[ k, k=1..n]   |  | entry (1..n)                                 |           |
| sCellIndex  |  |  |           |
| sCellConfigCommon   | ServingCellConfigCommon with condition SCell_add |  |           |
| sCellConfigDedicated  | ServingCellConfig                                |  |           |
| }   |  |  |           |
| }   |  |  |           |
| }   |  |  |           |

## 6 Test environments for Signalling test

### 6.1 Requirements of test equipment

#### 6.1.1 Requirements common for conducted and OTA tests

The requirements of test equipment specified in this subclause apply to Signalling test cases defined in TS 38.523-1 [12], in addition to the common requirements of test equipment specified in clause 4.2 of this specification.

Test equipment shall be able to simulate cells of Radio Access Technologies NR and E-UTRA. The number of cells to be simulated simultaneously by the test equipment shall not exceed the resources specified in Table 6.1-1

**Table 6.1-1: Maximum resources in terms of number / configuration of cells to be simulated simultaneously in a test setup**

| Simulation of   | Max. number of cells (NR) |     | Max. number of cells (E-UTRA) |
|---|---------------------------|-----|-------------------------------|
|   | Conducted                 | OTA |                               |
| NR single-mode networks (FDD or TDD)  | 4 cells                   | FFS | n/a                           |
| NR dual-mode networks (FDD and TDD)   | 4 cells                   | FFS | n/a                           |
| NR networks involving Carrier Aggregation   | 4 cells                   | FFS | n/a                           |
| NR dual connectivity (NR-DC)  | 4 cells                   | FFS | n/a                           |
| NR dual connectivity (EN-DC)  | 4 cells                   | FFS | 2 cells                       |
| NR dual connectivity (EN-DC) involving Carrier Aggregation  | 4 cells                   | FFS | 2 cells                       |
| Mixed E-UTRA / NR networks  | 4 cells                   | FFS | 2 cells                       |
| Note 1: No differentiation between cell configuration types (as defined in clause 6.3.1) here, because these types are only relevant to specific test cases and their TTCN-3 implementation.<br>Note 2: Only network scenarios specified in clauses 4.4.1 and 6.3.2.1 have been covered.<br>Note 3: In case of Carrier Aggregation, each cell can act as a SpCell, an SCell, or a standalone cell (not used as a CA component carrier).<br>Note 4: In order to support test case requirements for conducted and OTA test methods, the number of active cells at any given time should be minimised in order to ensure maximum re use of SS Tx/Rx resources. |                           |     |                               |

Exceptions to the requirements outlined above are possible but need special evidence to be provided explicitly in the test case prose and should be allowed only if the test case purpose cannot be met otherwise.

Due to limited power level range for FR2 OTA test methods, when defining test cases requirements, care shall be taken to ensure that the number of active cells is minimised as this has an impact to have distinguishable power level difference. Cells that are used in initial parts of test cases and are no longer required for the rest of the procedure shall be clearly defined as Non-suitable "Off" cell to facilitate re use of SS Tx/Rx resources

## 6.1.2 Requirements for conducted test method

No requirements are specified in addition to the common requirements described in clause 4.2 and clause 6.1.1.

## 6.1.3 Requirements for OTA test method

### 6.1.3.1 General

**Editor's Note:** The UE pre-configuration mentioned below to disable UL Tx diversity schemes shall be voided once a test methodology solution to minimize spectral flatness artefacts between TE and UE over all test points is defined.

The DFF or IFF based OTA test methodologies, defined in Annex B.1 should be used for Signalling test.

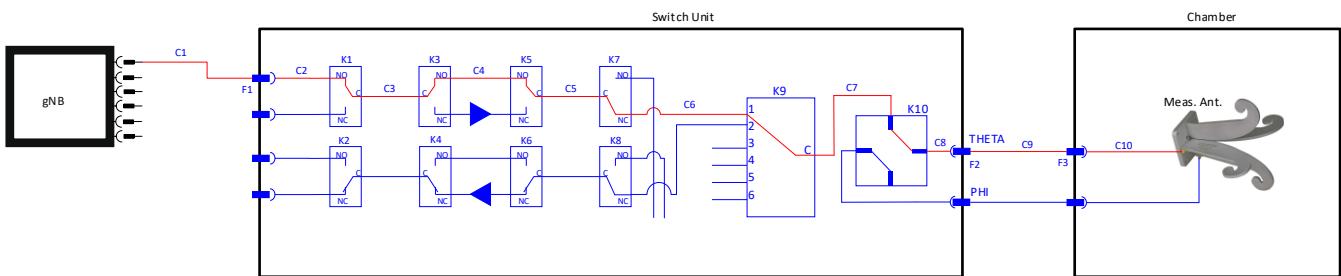
**NOTE:** For single cell test cases, usage of NF test methodology is not precluded.

Clause 6.1.3.2 describes a sample OTA measurement test setup and clause 6.1.3.3 describes approaches to select a UE orientation.

For conformance testing using the OTA test environment, the UE under test shall be pre-configured with UL Tx diversity schemes disabled to account for single polarization System Simulator (SS) in the test environment. The UE under test may transmit with dual polarization. This approach also applies to calibration stage..

### 6.1.3.2 Sample OTA Measurement Test Setup

Please refer to Figure 6.1.3.2-1 for a sample OTA measurement test setup.



**Figure 6.1.3.2-1: Sample OTA measurement setup**

NOTE: Figure 6.1.3.2-1 is for illustrative purposes only.

For 5G NR signalling test cases, depending on the dynamic range of measurements the system complexity can be reduced. In the switch unit, as shown in Figure 6.1.3.2-1, the switches K7, K8, K9, K10 can be removed. The amplifier (PA/LNA) is optional. For the "single cell" and "multiple cell" test cases, the gNB emulator can be directly connected to the feed horn.

### 6.1.3.3 Procedure for selecting UE Orientation and for calibration

Set calibrated power level at the centre of the quiet zone for each polarization individually [FFS].

Before starting the test, the UE orientation with which the test system can provide a wide enough dynamic range to perform the test scenarios needs to be identified in order to obtain sufficient link budget.

The UE orientation can be determined by either of the approaches below:

- Approach 1: UE vendor declares the direction in which the measurement has to be made. In this case, the declaration confirms that the Rx Beam peak conditions in FR2 specified in TS 38.133 [13] Annex B are met
- Approach 2: Perform an Rx-beam peak search

For Approach 2 an Rx beam peak search needs to be performed as per the procedure in TS 38.521-2 [15] Annex K, which finds the direction in which Rx Beam peak conditions in FR2 specified in TS 38.133 [13] Annex B are met.

RSRP measurements can be configured by SS in X2NR meas configurations using FFS preamble in NSA (Ex - RRC\_Connected with connectivity parameter E-UTRA with MCG Only bearer established and meas config enabled for event B1 (Ex-per TC 8.2.3.1.1 of TS 38.523-1)) and FFS preamble in SA modes.

When signal level calibrated with a reference antenna (only applicable to single-cell test cases without thresholds):

- The RSRP reported from the DUT is within [ $\pm$ FFSdB] of expected RSRP mentioned in Table 6.2.2.2-1.

When signal level calibrated with the RSRP-based calibration:

- Before starting the tests, Rx-beam peak directions need to be determined using Approach 1 or Approach 2 above. Rx beam peak direction may depend on the operating band under test. If Rx-beam peak directions for all the operating bands required for test scenarios are identical, three different levels in Table 6.2.2.2-2 can be used in the test scenarios.
- Rx-beam peak directions are decided to be 'identical', if the detected beam peak positions are direct neighbours on the measurement grid.

If Rx-beam peak directions are identical:

1. Position the UE so that the Rx beam peak direction is aligned towards the measurement antenna.
2. Make the UE report SS-RSRP at each frequency used in the test scenarios, while setting the downlink SS power at the centre of the quiet zone to -82dBm/SCS. Here, the SS-RSRP reported levels are denoted as  $P_{RSRP}(f)$ .
3. Calculate 'Delta(NRF)' for each carrier frequency used in the test case, using the equation:  $\Delta(NRF) = P_{RSRP}(f) + 82$ .

### 6.1.3.4 Handling of Thresholds

Where a threshold value is specified in the test case (value identified as  $TH_{test\ case}$ ) it is signalled to the UE with a value  $TH_{sig}$  according to table 6.1.3.4-1.

**Table 6.1.3.4-1: Handling of signalled threshold values**

| Type of Threshold                   | Signalled value  | Comment  |
|-------------------------------------|--|--|
| Absolute                            | $TH_{sig}(f) = TH_{test\ case} + \Delta(NRF_f)$  | $\Delta(NRF_f)$ value according to the frequency of the cell being compared to the threshold                                       |
| Relative, intra-frequency           | $TH_{sig}(f) = TH_{test\ case}$  |  |
| Relative, inter-frequency           | $a3\text{-}Offset_{sig} = a3\text{-}Offset_{test\ case} + \Delta(NRF_n) - \Delta(NRF_p)$ | $\Delta(NRF_p)$ is the Delta value for the SpCell frequency<br>$\Delta(NRF_n)$ is the Delta value for the neighbour cell frequency |
| Relative, inter-frequency, Event A6 | $a6\text{-}Offset_{sig} = a6\text{-}Offset_{test\ case} + \Delta(NRF_n) - \Delta(NRF_s)$ | $\Delta(NRF_s)$ is the Delta value for the SCell frequency<br>$\Delta(NRF_n)$ is the Delta value for the neighbour cell frequency  |

### 6.1.4 Requirements for timer tolerances

The timer tolerances specified for the test environment in this subclause apply to all Signalling test cases defined in TS 38.523-1 [12] unless otherwise specified.

All the timers used during testing are within a tolerance margin given by the equation below. If for a specific test a different tolerance value is required, then this should be specified in the relevant test document (i.e. the document where the test is described).

Timer tolerance = 10%.

## 6.2 Reference test conditions

### 6.2.1 Physical Channel Allocations

#### 6.2.1.1 Antennas

If the UE has two or more Rx antennas, the same downlink signal is applied to each one, except if MIMO is tested. All UE Rx antennas shall be connected.

If the UE has one Rx antenna, the downlink signal is applied to it.

#### 6.2.1.2 Downlink physical channels and physical signals

In general for signalling test cases the power allocation for downlink physical channels and signals is specified in relation to a reference cell power.

Unless specifically specified otherwise in a signalling test case prose, all cells use only one beam.

In case of only one beam per cell this reference cell power is the EPRE of the secondary synchronization signal (SSS) and referred to as “SS/PBCH SSS EPRE”.

In case of more than one beam per cell the power levels of the different SS/PBCH blocks may be different what makes it difficult to specify the EPRES of other physical channels and signals relative to the EPRE of any SSS. Therefore for multiple beams test cases the power levels are specified relative to the reference cell power.

For single beam per cell test cases the power allocation of downlink physical channels for signalling test cases is specified in table 6.2.1.2-1, for multiple beams per cell test cases the power allocation is specified in table 6.2.1.2-2.

**Table 6.2.1.2-1: Power allocation for OFDM symbols and reference signals for signalling test cases (single beam)**

| Parameter                         | Unit    | Value                  | Comment   |
|-----------------------------------|---------|------------------------|---|
| SSS transmit power                | dBm/SCS | Test specific (Note 1) | referred to as "SS/PBCH SSS EPRE"                                     |
| EPRE ratio of PSS to SSS          | dB      | 0                      |   |
| EPRE ratio of PBCH DMRS to SSS    | dB      | 0                      |   |
| EPRE ratio of PBCH to PBCH DMRS   | dB      | 0                      |   |
| EPRE ratio of PDCCH DMRS to SSS   | dB      | 0                      |   |
| EPRE ratio of PDCCH to PDCCH DMRS | dB      | 0                      |   |
| EPRE ratio of PDSCH DMRS to SSS   | dB      | 0                      |   |
| EPRE ratio of PDSCH to PDSCH DMRS | dB      | -3                     | To reduce interference from PDSCH of intra-frequency neighbour cells. |
| EPRE ratio of PTRS to PDSCH       | dB      | 3                      | i.e. the EPRE ratio of PTRS to SSS is 0dB                             |

Note 1: Power level chosen to align with cell power level as specified in clause 6.2.2.

**Table 6.2.1.2-2: Power allocation for OFDM symbols and reference signals for signalling test cases (multiple beam)**

| Parameter   | Unit    | Value                  | Comment  |
|---|---------|------------------------|--|
| Reference cell power EPRE <sub>CellRef</sub>                      | dBm/SCS | Test specific (Note 1) |  |
| EPRE ratio of SSS <sub>SSB#N</sub> to EPRE <sub>CellRef</sub>     | dB      | Test specific (Note 2) | power of SSS within SSB with index N   |
| EPRE ratio of PSS <sub>SSB#N</sub> to SSS <sub>SSB#N</sub>        | dB      | 0                      | power of PSS within SSB with index N   |
| EPRE ratio of PBCH DMRS <sub>SSB#N</sub> to SSS <sub>SSB#N</sub>  | dB      | 0                      | power of PBCH DMRS within SSB with index N   |
| EPRE ratio of PBCH <sub>SSB#N</sub> to PBCH DMRS <sub>SSB#N</sub> | dB      | 0                      | power of PBCH within SSB with index N  |
| EPRE ratio of PDCCH DMRS to EPRE <sub>CellRef</sub>               | dB      | 0                      | (Note 3)   |
| EPRE ratio of PDCCH to PDCCH DMRS                                 | dB      | 0                      |  |
| EPRE ratio of PDSCH DMRS to EPRE <sub>CellRef</sub>               | dB      | 0                      | (Note 3)   |
| EPRE ratio of PDSCH to PDSCH DMRS                                 | dB      | -3                     | To reduce interference from PDSCH of intra-frequency neighbour cells.                          |
| EPRE ratio of PTRS to PDSCH                                       | dB      | 3                      | i.e. the EPRE ratio of PTRS to EPRE <sub>CellRef</sub> is 0dB                                  |
| EPRE ratio of CSI-RS <sub>N</sub> to EPRE <sub>CellRef</sub>      | dB      | Test specific (Note 2) | power of CSI-RS with index N; CSI-RS configured if required by a test case in TS 38.523-1 [12] |

Note 1: Power level chosen to align with cell power level as specified in clause 6.2.2.

Note 2: Test cases may specify "OFF" in which case the attenuation shall result in an absolute EPRE value being equal or less than the power level specified for a non-suitable "Off" cell in clause 6.2.2.

Note 3: In general the UE cannot distinguish from which beam DL data is sent  $\Rightarrow$  PDCCH and PDSCH are considered as cell specific rather than beam specific.

## 6.2.2 Signal levels

### 6.2.2.1 Signal Levels for conducted testing

For NR FR1 cell, the downlink power settings in Table 6.2.2.1-1 and 6.2.2.1-2 are used unless otherwise specified in a test case.

**Table 6.2.2.1-1: Default Downlink power levels for FR1 NR cell (5MHz – 25MHz)**

|   | SCS(kHz) | Unit             | Channel bandwidth |       |       |       |       |
|---|----------|------------------|-------------------|-------|-------|-------|-------|
|   |          |                  | 5MHz              | 10MHz | 15MHz | 20MHz | 25MHz |
| Channel BW Power  | 15       | dBm              | -63               | -60   | -58   | -57   | -56   |
|   | 30       | dBm              | -67               | -63   | -61   | -60   | -59   |
|   | 60       | dBm              | N/A               | -67   | -65   | -63   | -62   |
| SS/PBCH SSS EPRE  | All      | dBm/SCS (Note 3) | -88               | -88   | -88   | -88   | -88   |
| Note 1: The channel bandwidth powers are informative, based on -88 dBm/ SCS(SubCarrier Spacing) SS/PBCH SSS EPRE, then scaled according to the number of RBs and rounded to the nearest integer dBm value. Full RE allocation with no boost or deboost is assumed.<br>Note 2: The power level is specified at each UE Rx antenna.<br>Note 3: DL level is applied for any of the Subcarrier Spacing configuration ( $\mu$ ) with the same power spectrum density of -88 dBm/SCS(SubCarrier Spacing). |          |                  |                   |       |       |       |       |

**Table 6.2.2.1-2: Default Downlink power levels for FR1 NR cell (30MHz – 100MHz)**

|   | SCS(kHz) | Unit             | Channel bandwidth |       |       |       |       |       |        |
|---|----------|------------------|-------------------|-------|-------|-------|-------|-------|--------|
|   |          |                  | 30MHz             | 40MHz | 50MHz | 60MHz | 80MHz | 90MHz | 100MHz |
| Channel BW Power  | 15       | dBm              | -55               | -54   | -53   | N/A   | N/A   | N/A   | N/A    |
|   | 30       | dBm              | -58               | -57   | -56   | -55   | -54   | -53   | -53    |
|   | 60       | dBm              | -61               | -60   | -59   | -58   | -57   | -56   | -56    |
| SS/PBCH SSS EPRE  | All      | dBm/SCS (Note 3) | -88               | -88   | -88   | -88   | -88   | -88   | -88    |
| Note 1: The channel bandwidth powers are informative, based on -88dBm/SCS(SubCarrier Spacing) SS/PBCH SSS EPRE, then scaled according to the number of RBs and rounded to the nearest integer dBm value. Full RE allocation with no boost or deboost is assumed.<br>Note 2: The power level is specified at each UE Rx antenna.<br>Note 3: DL level is applied for any of the Subcarrier Spacing configuration ( $\mu$ ) with a power spectrum density of -88dBm/SCS(SubCarrier Spacing). |          |                  |                   |       |       |       |       |       |        |

With simultaneous transmission of 24 RBs, a maximum of -78dBm/SCS SS/PBCH SSS EPRE can be allocated as cell power level.

The default settings of suitable cells and non-suitable cells for NR are specified in table 6.2.2.1-3.

Cells which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.1-3.

**Table 6.2.2.1-3: Default settings of suitable / non-suitable cells**

| Power level type   | NR<br>(Note 1-3) |             | E-UTRAN             |
|--|------------------|-------------|---------------------|
|  | Unit             | Power level |                     |
| Serving cell   | dBm/SCS          | -88         | Table 6.2.2.1-1 [2] |
| Suitable neighbour intra-frequency cell  | dBm/SCS          | -94         | Table 6.2.2.1-1 [2] |
| Suitable neighbour inter-frequency cell  | dBm/SCS          | -99         | Table 6.2.2.1-1 [2] |
| Non-suitable cell  | dBm/SCS          | -115        | Table 6.2.2.1-1 [2] |
| Non-suitable "Off" cell  | dBm/SCS          | $\leq -145$ | Table 6.2.2.1-1 [2] |
| Note 1: The power level is specified in terms of SS/PBCH SSS EPRE instead of RSRP as RSRP is a measured value and cannot be directly controlled by the Full RE allocation with no boost or deboost is assumed. SS.<br>Note 2: The power level is specified at each UE Rx antenna.<br>Note 3: DL level is applied for any of the Subcarrier Spacing configuration ( $\mu$ ) with the same power spectrum density of -88dBm/SCS.<br>Note 4: The default settings assume that the UE is making relative measurements of neighbour cells compared to the serving cell. |                  |             |                     |

The default signal level uncertainty is specified in table 6.2.2.1-4 for any level specified, unless a tighter uncertainty is specified by a test case in TS 38.523-1 [12].

**Table 6.2.2.1-4: SS signal level uncertainty**

|   | Absolute signal level uncertainty for each cell | Relative signal level uncertainty between multiple cells |
|---|---|--|
| Intra-frequency   | +/-3 dB at each test port                       | +/-3 dB  |
| Inter-frequency   | +/-3 dB at each test port                       | See Note 1   |
| Note 1: For Inter-frequency cells the relative signal level uncertainty between multiple cells is determined by the absolute uncertainty of each cell, and does not have any additional constraint. |   |  |

SS/PBCH SSS EPRE setting should be equal to or higher than -115 dBm except for Non-suitable "Off" cell. The figure is chosen to ensure that for all bands the DL signal is within the RSRP measurement range specified in TS 38.133 [13], taking into account the SS default absolute signal level uncertainty.

NOTE: (The power spectral density of a white noise source; specified in TS 38.133 [13]) can be assumed to be - Infinity [dBm/SCS] for all intra and inter frequency test cases. It is applicable to both idle mode and connected mode in TS 38.523-1 [12], unless otherwise specified in specific test cases.

### 6.2.2.1.1 Measurement accuracy and side conditions

RSRP measurement accuracy in RRC\_CONNECTED state is specified in table 6.2.2.1.1-1, derived from TS 38.133 [13] clauses 10.1.2 and 10.1.4 selecting Normal condition with maximum Io less than -50 dBm/BW<sub>Channel</sub>. The ranges and side conditions in TS 38.133 [13] clauses 10.1.2 and 10.1.4 apply. This measurement accuracy is applicable to connected mode test cases specified in TS 38.523-1 [12]. For the serving cell and suitable neighbour cells, the following side conditions shall be satisfied including the effect of signal level uncertainty.

- RSRP  $\geq -124$  dBm
- RSRP  $\hat{E}_s/I_{ot} > -6$  dB
- Io: 117.5 dBm/SCS for 15kHz SCS and -114.5 dBm/SCS for 15kHz SCS dBm/SCS ... -50 dBm/BW<sub>Channel</sub> (for absolute and relative RSRP measurement accuracy).

RSRP measurement accuracy in RRC\_CONNECTED state is specified in table 6.2.2.1.1-1, derived from TS 38.133 [13] clauses 10.1.2 and 10.1.4 selecting Normal condition.

**Table 6.2.2.1.1-1: RSRP measurement accuracy in RRC\_CONNECTED state**

|                 | Absolute RSRP measurement accuracy | Relative RSRP measurement accuracy |
|-----------------|------------------------------------|------------------------------------|
| Intra-frequency | +/-8 dB                            | +/-3 dB                            |
| Inter-frequency | +/-8 dB                            | +/-4.5 dB                          |

### 6.2.2.2 Signal Levels for OTA testing

**Editor's Note:** It is FFS whether some or all of the restrictions listed in the working assumptions below will be removed.

The power levels defined in this clause are based on the following assumptions:

- No more than one E-UTRA cell is configured in the test case and this E-UTRA cell uses an uncalibrated OTA link with no power level change.
- No more than one NR FR1 cell is configured in the test case and this NR FR1 cell uses an uncalibrated OTA link with no power level change.
- AWGN is not configured in the test case

For NR FR2 cell, the downlink power settings in Table 6.2.2.2-1 are used unless otherwise specified in a test case.

**Table 6.2.2.2-1: Default Downlink power levels for FR2 NR cell (50MHz - 400MHz)**

|  | SCS(kHz) | Unit    | Channel bandwidth |        |        |        |
|--|----------|---------|-------------------|--------|--------|--------|
|  |          |         | 50MHz             | 100MHz | 200MHz | 400MHz |
| Channel BW Power   | 60       | dBm     | FFS               | FFS    | FFS    | FFS    |
|  | 120      | dBm     | -57               | -57    | -57    | -57    |
| SS/PBCH SSS EPRE   | All      | dBm/SCS | -82               | -82    | -82    | -82    |
| Note 1: The channel bandwidth powers are informative, based on -82 dBm/SCS SS/PBCH SSS EPRE, then scaled according to the number of RBs and rounded to the nearest integer dBm value. A maximum RE allocation of 24 simultaneously transmitted RBs with no boost or deboost is assumed.<br>Note 2: The power level is specified at the centre of quiet zone. |          |         |                   |        |        |        |

The default settings of suitable cells and non-suitable cells for NR FR2 are specified in table 6.2.2.2-2.

NR FR2 cells which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.2-2.

**Table 6.2.2.2-2: Default settings of suitable / non-suitable FR2 NR cells**

| Power level type   | NR (Note 1-3) |             |
|--|---------------|-------------|
|  | Unit          | Power level |
| Serving cell   | dBm/SCS       | -82         |
| Suitable neighbour intra-frequency cell  | dBm/SCS       | -91         |
| Suitable neighbour inter-frequency cell  | dBm/SCS       | -91         |
| Non-suitable cell  | dBm/SCS       | -100        |
| Non-suitable "Off" cell  | dBm/SCS       | $\leq -139$ |
| Note 1: The power level is specified in terms of SS/PBCH SSS EPRE instead of RSRP as RSRP is a measured value and cannot be directly controlled by the SS.<br>Note 2: The power level is specified at the centre of quiet zone.<br>Note 3: DL level is applied for any of the Subcarrier Spacing configuration ( $\mu$ ) with the same power spectrum density in dBm/SCS (SubCarrier Spacing). |               |             |

For E-UTRA cell with FR2 NR, since the LTE OTA link is uncalibrated in the signalling test setup, the table 6.2.2.2-3 provides only suggestive value. It is left to the TE vendor to ensure that LTE cell power level fulfils the cell selection criteria.

**Table 6.2.2.2-3: Default Downlink power levels for E-UTRA cells with NR FR2**

|  | Unit      | Channel bandwidth |       |       |        |        |        |
|--|-----------|-------------------|-------|-------|--------|--------|--------|
|  |           | 1.4 MHz           | 3 MHz | 5 MHz | 10 MHz | 15 MHz | 20 MHz |
| Number of RBs  |           | 6                 | 15    | 25    | 50     | 75     | 100    |
| Channel BW Power   | dBm       | -77               | -73   | -71   | -68    | -66    | -65    |
| RS EPRE  | dBm/15kHz | -96               | -96   | -96   | -96    | -96    | -96    |
| Note 1: The channel bandwidth powers are informative, based on -96 dBm/15kHz RS_EPRE, then scaled according to the number of RBs and rounded to the nearest integer dBm value. Full RE allocation with no boost or deboost is assumed. |           |                   |       |       |        |        |        |
| Note 2: The power level is specified at the centre of quiet zone.  |           |                   |       |       |        |        |        |

The default settings of suitable cells and non-suitable cells for E-UTRA with FR2 NR are specified in table 6.2.2.2-4.

E-UTRA Cells with FR2 NR which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.2-4.

**Table 6.2.2.2-4: Default settings of suitable / non-suitable E-UTRA cells with NR FR2**

| Power level type  | E-UTRAN<br>(Note 1-2) |             |
|---|-----------------------|-------------|
|   | Unit                  | Power level |
| Serving cell  | dBm/15KHz             | -96         |
| Suitable neighbour intra-frequency cell   | dBm/15KHz             | TBD         |
| Suitable neighbour inter-frequency cell   | dBm/15KHz             | TBD         |
| Non-suitable cell   | dBm/15KHz             | TBD         |
| Non-suitable "Off" cell   | dBm/15KHz             | TBD         |
| Note 1: The power level is specified in terms of cell-specific RS EPRE instead of RSRP as RSRP is a measured value and cannot be directly controlled by the SS. |                       |             |
| Note 2: The power level is specified at the centre of quiet zone.   |                       |             |

The Test system default signal level uncertainty is specified in tables 6.2.2.2-5 and 6.2.2.2-6 for any level specified, unless a tighter uncertainty is specified by a test case in TS 38.523-1 [12].

**Table 6.2.2.2-5: SS Absolute FR2 NR signal level uncertainty**

|                   | Absolute signal level uncertainty   |
|-------------------|-------------------------------------|
| At each frequency | +/-6 dB at centre of the quiet zone |

**Table 6.2.2.2-6: SS Relative FR2 NR signal level uncertainty**

|                   | Relative signal level uncertainty between any two SS EPRE levels at the same frequency |
|-------------------|--|
| At each frequency | +/-2.0 dB  |

For NR cell in FR1 with FR2 NR, since the NR FR1 OTA link is uncalibrated in the signalling test setup, -88dBm/SCS should be applied as defined in the table 6.2.2.1-1 and table 6.2.2.1-2. -88dBm/SCS is suggested value and it is left to the TE vendor to ensure that NR cell power level fulfils the cell selection criteria.

The default settings of suitable cells and non-suitable cells for NR in FR1 with FR2 NR are specified in table 6.2.2.2-7.

NR Cells in FR1 with FR2 NR which are expected to be undetectable for UE under test shall fulfil the condition of non-suitable "Off" cell in table 6.2.2.2-7.

**Table 6.2.2.2-7: Default settings of suitable / non-suitable NR cells in FR1 with NR FR2**

| Power level type   | NR<br>(Note 1-2) |             |
|--|------------------|-------------|
|  | Unit             | Power level |
| Serving cell   | dBm/SCS          | -88         |
| Suitable neighbour intra-frequency cell  | dBm/SCS          | TBD         |
| Suitable neighbour inter-frequency cell  | dBm/SCS          | TBD         |
| Non-suitable cell  | dBm/SCS          | TBD         |
| Non-suitable "Off" cell  | dBm/SCS          | TBD         |
| Note 1: The power level is specified in terms of SS/PBCH SSS EPRE instead of RSRP as RSRP is a measured value and cannot be directly controlled by the SS. |                  |             |
| Note 2: The power level is specified at the centre of quiet zone.  |                  |             |

## 6.2.3 Default test frequencies

**Editor's note:** For FR2 test frequencies using 100 MHz default channel bandwidth it is FFS if 100MHz channel bandwidth can be used for FR2 multicell protocol testing.

### 6.2.3.1 Test frequencies for NR standalone signalling testing

The default channel bandwidth for signalling test is specified per NR band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

For signalling test cases, the mapping of frequency ranges to NR test frequencies are as follows:

- for band with only one test frequency (e.g. n51): Low Range (NRf1);
- for band with up to two test frequencies: Low Range (NRf1) and High Range (NRf2);
- for band with up to three test frequencies: Low Range (NRf1), Mid Range (NRf2) and High Range (NRf3);
- for band with up to four test frequencies: Low Range (NRf1), Mid Low Range (NRf2), Mid High Range (NRf3) and High Range (NRf4);

The signalling test frequencies NRf5, NRf6, NRf7 are mapped respectively as NRf1, NRf2, NRf3 on the operating band for inter-band.

The test frequencies, subcarrier spacing, default channel bandwidth, SS/PBCH block and CORESET#0 parameters for signalling is specified in Table 6.2.3.1-1 (FDD FR1 BW 5MHz), Table 6.2.3.1-2 (FDD FR1 BW 10MHz), Table 6.2.3.1-3 (TDD FR1 BW 5MHz), Table 6.2.3.1-4 (TDD FR1 BW 10MHz), Table 6.2.3.1-4A (TDD FR1 BW 60MHz), Table 6.2.3.1-5 (TDD FR1 BW 100MHz), Table 6.2.3.1-6 (TDD FR2 BW 100MHz) and Table 6.2.3.1-7 (NR FDD FR1 SUL bands).

Table 6.2.3.1-1: Test frequencies for NR FDD FR1 bands using 5 MHz channel bandwidth

| NR Band | SCS [kHz] | CBW [MHz] | carrierBandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN]  | point A [MHz] | absoluteFrequencyPointA [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |    |
|---------|-----------|-----------|-------------------------|----------|----------------------|---|---------------|---------------------------------|--------------------------------|--------------------|------|------------------------------|-----------|---------------------------------|--|-------------------------------------|----|
| n5      | 15        | 5         | 25                      | Downlink | Low, High            | Same values as for Low and High range in clause 4.3.1.1.15 for bandwidth=5 MHz and SCS=15 kHz.        |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Mid-Low              | 878.2   | 175640        | 873.79                          | 174758                         | 12                 | 15   | 2197                         | 175730    | 0                               | 1                                      | 2 (4)                               | 17 |
|         |           |           |                         |          | Mid-High             | 884.8   | 176960        | 878.23                          | 175646                         | 24                 |      | 2212                         | 176930    | 8                               | 1                                      | 0 (0)                               | 25 |
|         |           |           |                         | Uplink   | Low, High            | Same values as for Low and High range in clause 4.3.1.1.15 for bandwidth=5 MHz and SCS=15 kHz.        |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Mid-Low              | 833.2   | 166640        | 824.47                          | 164894                         | 36                 | -    | -                            | -         | -                               | -                                      | -                                   | -  |
|         |           |           |                         |          | Mid-High             | 839.8   | 167960        | 817.03                          | 163406                         | 114                | -    | -                            | -         | -                               | -                                      | -                                   | -  |
|         |           |           |                         |          | Low, High            | Same values as for Low and High range in clause 4.3.1.1.1.8 for bandwidth=5 MHz and SCS=15 kHz.       |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         | n8        | 15        | 5                       | Downlink | Mid-Low              | 937.5   | 187500        | 933.09                          | 186618                         | 12                 | 15   | 2343                         | 187470    | 8                               | 1                                      | 0 (0)                               | 13 |
|         |           |           |                         |          | Mid-High             | 947.5   | 189500        | 940.93                          | 188186                         | 24                 |      | 2368                         | 189410    | 0                               | 0                                      | 0 (0)                               | 24 |
|         |           |           |                         |          | Low, High            | Same values as for Low and High range in clause 4.3.1.1.8 for bandwidth=5 MHz and SCS=15 kHz.         |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         | Uplink   | Mid-Low              | 892.5   | 178500        | 883.77                          | 176754                         | 36                 | -    | -                            | -         | -                               | -                                      | -                                   | -  |
|         |           |           |                         |          | Mid-High             | 902.5   | 180500        | 879.73                          | 175946                         | 114                | -    | -                            | -         | -                               | -                                      | -                                   | -  |
|         | n12       | 15        | 5                       | 25       | Low, Mid, High       | Same values as for Low, Mid and High range in clause 4.3.1.1.1.12 for bandwidth=5 MHz and SCS=15 kHz. |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Uplink               | Same values as for Low, Mid and High range in clause 4.3.1.1.1.12 for bandwidth=5 MHz and SCS=15 kHz. |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
| n14     | 15        | 5         | 25                      | Downlink | Low, High            | Same values as for Low and High range in clause 4.3.1.1.1.14 for bandwidth=5 MHz and SCS=15 kHz.      |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Low, High            | Same values as for Low and High range in clause 4.3.1.1.1.14 for bandwidth=5 MHz and SCS=15 kHz.      |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
| n20     | 15        | 5         | 25                      | Downlink | Low, High            | Same values as for Low and High range in clause 4.3.1.1.1.20 for bandwidth=5 MHz and SCS=15 kHz.      |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Mid-Low              | 801.8   | 160360        | 797.39                          | 159478                         | 12                 | 15   | 2003                         | 160330    | 8                               | 1                                      | 0 (0)                               | 13 |
|         |           |           |                         |          | Mid-High             | 810.2   | 162040        | 803.63                          | 160726                         | 24                 |      | 2024                         | 162010    | 8                               | 1                                      | 0 (0)                               | 25 |
|         |           |           |                         | Uplink   | Low, High            | Same values as for Low and High range in clause 4.3.1.1.1.20 for bandwidth=5 MHz and SCS=15 kHz.      |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Mid-Low              | 842.8   | 168560        | 834.07                          | 166814                         | 36                 | -    | -                            | -         | -                               | -                                      | -                                   | -  |
|         |           |           |                         |          | Mid-High             | 851.2   | 170240        | 828.43                          | 165686                         | 114                | -    | -                            | -         | -                               | -                                      | -                                   | -  |
|         |           |           |                         |          | Low, High            | Same values as for Low and High range in clause 4.3.1.1.1.26 for bandwidth=5 MHz and SCS=15 kHz.      |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
| n26     | 15        | 5         | 25                      | Downlink | Mid-Low              | 871.5   | 174300        | 867.09                          | 173418                         | 12                 | 15   | 2178                         | 174270    | 8                               | 1                                      | 0 (0)                               | 13 |
|         |           |           |                         |          | Mid-High             | 881.5   | 176300        | 874.93                          | 174986                         | 24                 |      | 2203                         | 176210    | 0                               | 0                                      | 0 (0)                               | 24 |

|   |    |   |    |                    |                   |  |        |        |        |     |    |      |        |   |   |       |    |   |  |
|---|----|---|----|--------------------|-------------------|--|--------|--------|--------|-----|----|------|--------|---|---|-------|----|---|--|
|   |    |   |    | Uplink             | Low,<br>High      | Same values as for Low and High range in clause 4.3.1.1.26 for bandwidth=5 MHz and SCS=15 kHz.                             |        |        |        |     |    |      |        |   |   |       |    |   |  |
|   |    |   |    |                    | Mid-Low           | 826.5  | 165300 | 817.77 | 163554 | 36  | -  | -    | -      | - | - | -     | -  | - |  |
|   |    |   |    |                    | Mid-High          | 836.5  | 167300 | 813.73 | 162746 | 114 | -  | -    | -      | - | - | -     | -  | - |  |
| n29   | 15 | 5 | 25 | Downlink<br>(SDL)  | Low,<br>High      | Same values as for Low and High range in clause 4.3.1.1.29 for bandwidth=5 MHz and SCS=15 kHz.                             |        |        |        |     |    |      |        |   |   |       |    |   |  |
| n30   | 15 | 5 | 25 | Downlink<br>Uplink | Low,<br>High      | Same values as for Low and High range in clause 4.3.1.1.30 for bandwidth=5 MHz and SCS=15 kHz.                             |        |        |        |     |    |      |        |   |   |       |    |   |  |
|   |    |   |    |                    | Low,<br>High      | Same values as for Low and High range in clause 4.3.1.1.30 for bandwidth=5 MHz and SCS=15 kHz.                             |        |        |        |     |    |      |        |   |   |       |    |   |  |
| n70   | 15 | 5 | 25 | Downlink<br>Uplink | Low, Mid,<br>High | Same values as for Low, Mid and High range in clause 4.3.1.1.70 for DL bandwidth=5 MHz, UL bandwidth=5 MHz and SCS=15 kHz. |        |        |        |     |    |      |        |   |   |       |    |   |  |
|   |    |   |    |                    | Low, Mid,<br>High | Same values as for Low, Mid and High range in clause 4.3.1.1.70 for DL bandwidth=5 MHz, UL bandwidth=5 MHz and SCS=15 kHz. |        |        |        |     |    |      |        |   |   |       |    |   |  |
| n71   | 15 | 5 | 25 | Downlink           | Low,<br>High      | Same values as for Low and High range in clause 4.3.1.1.71 for bandwidth=5 MHz and SCS=15 kHz.                             |        |        |        |     |    |      |        |   |   |       |    |   |  |
|   |    |   |    |                    | Mid-Low           | 629.5  | 125900 | 625.09 | 125018 | 12  | 15 | 1573 | 125810 | 0 | 0 | 0 (0) | 12 |   |  |
|   |    |   |    |                    | Mid-High          | 639.5  | 127900 | 632.93 | 126586 | 24  |    | 1598 | 127930 | 4 | 1 | 1 (2) | 27 |   |  |
|   |    |   |    | Uplink             | Low,<br>High      | Same values as for Low and High range in clause 4.3.1.1.71 for bandwidth=5 MHz and SCS=15 kHz.                             |        |        |        |     |    |      |        |   |   |       |    |   |  |
|   |    |   |    |                    | Mid-Low           | 675.5  | 135100 | 666.77 | 133354 | 36  | -  | -    | -      | - | - | -     | -  |   |  |
|   |    |   |    |                    | Mid-High          | 685.5  | 137100 | 662.73 | 132546 | 114 | -  | -    | -      | - | - | -     | -  |   |  |
| n76   | 15 | 5 | 25 | Downlink<br>(SDL)  | Low               | Same values as for Low range in clause 4.3.1.1.76 for bandwidth=5 MHz and SCS=15 kHz.                                      |        |        |        |     |    |      |        |   |   |       |    |   |  |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2. |    |   |    |                    |                   |  |        |        |        |     |    |      |        |   |   |       |    |   |  |

Table 6.2.3.1-2: Test frequencies for NR FDD FR1 bands using 10 MHz channel bandwidth

| NR Band | SCS [kHz] | CBW [MHz] | carrierBandwidth [PRBs] | Range    | Carrier centre [MHz] | Carrier centre [ARFCN]   | point A [MHz] | absoluteFrequencyPointA [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |    |
|---------|-----------|-----------|-------------------------|----------|----------------------|--|---------------|---------------------------------|--------------------------------|--------------------|------|------------------------------|-----------|---------------------------------|--|-------------------------------------|----|
| n1      | 15        | 10        | 52                      | Downlink | Low, High            | Same values as for Low and High range in clause 4.3.1.1.1 for bandwidth=10 MHz and SCS=15 kHz. |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Mid-Low              | 2131.7   | 426340        | 2124.86                         | 424972                         | 12                 | 15   | 5321                         | 425770    | 2                               | 0                                      | 0 (0)                               | 12 |
|         |           |           |                         |          | Mid-High             | 2148.3   | 429660        | 2139.3                          | 427860                         | 24                 |      | 5364                         | 429150    | 10                              | 1                                      | 0 (0)                               | 25 |
|         |           |           |                         | Uplink   | Low, High            | Same values as for Low and High range in clause 4.3.1.1.1 for bandwidth=10 MHz and SCS=15 kHz. |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Mid-Low              | 1941.7   | 388340        | 1930.54                         | 386108                         | 36                 | -    | -                            | -         | -                               | -                                      | -                                   |    |
|         |           |           |                         |          | Mid-High             | 1958.3   | 391660        | 1933.1                          | 386620                         | 114                | -    | -                            | -         | -                               | -                                      | -                                   |    |
|         |           |           |                         |          | Low, High            | Same values as for Low and High range in clause 4.3.1.1.2 for bandwidth=10 MHz and SCS=15 kHz. |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Mid-Low              | 1951.7   | 390340        | 1944.86                         | 388972                         | 12                 | 15   | 4871                         | 389770    | 2                               | 0                                      | 0 (0)                               | 12 |
|         |           |           |                         |          | Mid-High             | 1968.3   | 393660        | 1959.3                          | 391860                         | 24                 |      | 4914                         | 393150    | 10                              | 1                                      | 0 (0)                               | 25 |
|         |           |           |                         | Uplink   | Low, High            | Same values as for Low and High range in clause 4.3.1.1.2 for bandwidth=10 MHz and SCS=15 kHz. |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Mid-Low              | 1871.7   | 374340        | 1860.54                         | 372108                         | 36                 | -    | -                            | -         | -                               | -                                      | -                                   |    |
|         |           |           |                         |          | Mid-High             | 1888.3   | 377660        | 1863.1                          | 372620                         | 114                | -    | -                            | -         | -                               | -                                      | -                                   |    |
|         |           |           |                         |          | Low, High            | Same values as for Low and High range in clause 4.3.1.1.3 for bandwidth=10 MHz and SCS=15 kHz. |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Mid-Low              | 1831.7   | 366340        | 1824.86                         | 364972                         | 12                 | 15   | 4571                         | 365770    | 2                               | 0                                      | 0 (0)                               | 12 |
|         |           |           |                         |          | Mid-High             | 1853.3   | 370660        | 1844.3                          | 368860                         | 24                 |      | 4625                         | 370090    | 2                               | 0                                      | 0 (0)                               | 24 |
|         |           |           |                         | Uplink   | Low, High            | Same values as for Low and High range in clause 4.3.1.1.3 for bandwidth=10 MHz and SCS=15 kHz. |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Mid-Low              | 1736.7   | 347340        | 1725.54                         | 345108                         | 36                 | -    | -                            | -         | -                               | -                                      | -                                   |    |
|         |           |           |                         |          | Mid-High             | 1758.3   | 351660        | 1733.1                          | 346620                         | 114                | -    | -                            | -         | -                               | -                                      | -                                   |    |
|         |           |           |                         |          | Low, High            | Same values as for Low and High range in clause 4.3.1.1.7 for bandwidth=10 MHz and SCS=15 kHz. |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Mid-Low              | 2645   | 529000        | 2638.16                         | 527632                         | 12                 | 15   | 6605                         | 528490    | 10                              | 1                                      | 0 (0)                               | 13 |
|         |           |           |                         |          | Mid-High             | 2665   | 533000        | 2656                            | 531200                         | 24                 |      | 6658                         | 532610    | 2                               | 1                                      | 2 (4)                               | 29 |
|         |           |           |                         | Uplink   | Low, High            | Same values as for Low and High range in clause 4.3.1.1.7 for bandwidth=10 MHz and SCS=15 kHz. |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Mid-Low              | 2525   | 505000        | 2513.84                         | 502768                         | 36                 | -    | -                            | -         | -                               | -                                      | -                                   |    |
|         |           |           |                         |          | Mid-High             | 2545   | 509000        | 2519.8                          | 503960                         | 114                | -    | -                            | -         | -                               | -                                      | -                                   |    |
|         |           |           |                         |          | Low, High            | Same values as for Low and High range in clause 4.3.1.25 for bandwidth=10 MHz and SCS=15 kHz.  |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |          | Mid-Low              | 1953.3   | 390660        | 1946.46                         | 389292                         | 12                 | 15   | 4878                         | 390270    | 2                               | 1                                      | 2 (4)                               | 17 |
|         |           |           |                         |          | Mid-High             | 1971.7   | 394340        | 1962.7                          | 392540                         | 24                 |      | 4924                         | 393890    | 6                               | 1                                      | 1 (2)                               | 27 |

|     |    |    |    |                 |              |   |        |         |        |     |    |      |        |    |   |       |    |   |  |
|-----|----|----|----|-----------------|--------------|---|--------|---------|--------|-----|----|------|--------|----|---|-------|----|---|--|
|     |    |    |    | Uplink          | Low,<br>High | Same values as for Low and High range in clause 4.3.1.1.25 for bandwidth=10 MHz and SCS=15 kHz.                         |        |         |        |     |    |      |        |    |   |       |    |   |  |
|     |    |    |    |                 | Mid-Low      | 1873.3  | 374660 | 1862.14 | 372428 | 36  | -  | -    | -      | -  | - | -     | -  | - |  |
|     |    |    |    |                 | Mid-High     | 1891.7  | 378340 | 1866.5  | 373300 | 114 | -  | -    | -      | -  | - | -     | -  | - |  |
| n28 | 15 | 10 | 52 | Downlink        | Low,<br>High | Same values as for Low and High range in clause 4.3.1.1.28 for bandwidth=10 MHz and SCS=15 kHz.                         |        |         |        |     |    |      |        |    |   |       |    |   |  |
|     |    |    |    |                 | Mid-Low      | 774.7   | 154940 | 767.86  | 153572 | 12  | 15 | 1930 | 154370 | 2  | 0 | 0 (0) | 12 |   |  |
|     |    |    |    |                 | Mid-High     | 786.3   | 157260 | 777.3   | 155460 | 24  |    | 1959 | 156750 | 10 | 1 | 0 (0) | 25 |   |  |
|     |    |    |    | Uplink          | Low,<br>High | Same values as for Low and High range in clause 4.3.1.1.28 for bandwidth=10 MHz and SCS=15 kHz.                         |        |         |        |     |    |      |        |    |   |       |    |   |  |
|     |    |    |    |                 | Mid-Low      | 719.7   | 143940 | 708.54  | 141708 | 36  | -  | -    | -      | -  | - | -     | -  |   |  |
|     |    |    |    |                 | Mid-High     | 731.3   | 146260 | 706.1   | 141220 | 114 | -  | -    | -      | -  | - | -     | -  |   |  |
| n65 | 15 | 10 | 52 | Downlink        | Low,<br>High | Same values as for Low and High range in clause 4.3.1.65 for bandwidth=10 MHz and SCS=15 kHz.                           |        |         |        |     |    |      |        |    |   |       |    |   |  |
|     |    |    |    |                 | Mid-Low      | 2141.7  | 428340 | 2134.86 | 426972 | 12  | 15 | 5349 | 427950 | 2  | 1 | 2 (4) | 17 |   |  |
|     |    |    |    |                 | Mid-High     | 2168.3  | 433660 | 2159.3  | 431860 | 24  |    | 5414 | 433210 | 6  | 1 | 1 (2) | 27 |   |  |
|     |    |    |    | Uplink          | Low,<br>High | Same values as for Low and High range in clause 4.3.1.65 for bandwidth=10 MHz and SCS=15 kHz.                           |        |         |        |     |    |      |        |    |   |       |    |   |  |
|     |    |    |    |                 | Mid-Low      | 1951.7  | 390340 | 1940.54 | 388108 | 36  | -  | -    | -      | -  | - | -     | -  |   |  |
|     |    |    |    |                 | Mid-High     | 1978.3  | 395660 | 1953.1  | 390620 | 114 | -  | -    | -      | -  | - | -     | -  |   |  |
| n66 | 15 | 10 | 52 | Downlink        | Low,<br>High | Same values as for Low and High range in clause 4.3.1.1.66 for DL bandwidth=10 MHz, UL bandwidth=10 MHz and SCS=15 kHz. |        |         |        |     |    |      |        |    |   |       |    |   |  |
|     |    |    |    |                 | Mid-Low      | 2141.7  | 428340 | 2134.86 | 426972 | 12  | 15 | 5349 | 427950 | 2  | 1 | 2 (4) | 17 |   |  |
|     |    |    |    |                 | Mid-High     | 2168.3  | 433660 | 2159.3  | 431860 | 24  |    | 5414 | 433210 | 6  | 1 | 1 (2) | 27 |   |  |
|     |    |    |    | Uplink          | Low,<br>High | Same values as for Low and High range in clause 4.3.1.1.66 for DL bandwidth=10 MHz, UL bandwidth=10 MHz and SCS=15 kHz. |        |         |        |     |    |      |        |    |   |       |    |   |  |
|     |    |    |    |                 | Mid-Low      | 1741.7  | 348340 | 1730.54 | 346108 | 36  | -  | -    | -      | -  | - | -     | -  |   |  |
|     |    |    |    |                 | Mid-High     | 1768.3  | 353660 | 1743.1  | 348620 | 114 | -  | -    | -      | -  | - | -     | -  |   |  |
| n74 | 15 | 10 | 52 | Downlink        | Low,<br>High | Same values as for Low and High range in clause 4.3.1.1.74 for bandwidth=5 MHz and SCS=15 kHz.                          |        |         |        |     |    |      |        |    |   |       |    |   |  |
|     |    |    |    |                 | Mid-Low      | 1491  | 298200 | 1484.16 | 296832 | 12  | 15 | 3720 | 297630 | 2  | 0 | 0 (0) | 12 |   |  |
|     |    |    |    |                 | Mid-High     | 1502  | 300400 | 1493    | 298600 | 24  |    | 3749 | 300010 | 2  | 1 | 2 (4) | 29 |   |  |
|     |    |    |    | Uplink          | Low,<br>High | Same values as for Low and High range in clause 4.3.1.1.74 for bandwidth=5 MHz and SCS=15 kHz.                          |        |         |        |     |    |      |        |    |   |       |    |   |  |
|     |    |    |    |                 | Mid-Low      | 1443  | 288600 | 1431.84 | 286368 | 36  | -  | -    | -      | -  | - | -     | -  |   |  |
|     |    |    |    |                 | Mid-High     | 1454  | 290800 | 1428.8  | 285760 | 114 | -  | -    | -      | -  | - | -     | -  |   |  |
| n75 | 15 | 10 | 52 | (SDL)<br>Note 2 | Low,<br>High | Same values as for Low and High range in clause 4.3.1.1.75 for bandwidth=10 MHz and SCS=15 kHz.                         |        |         |        |     |    |      |        |    |   |       |    |   |  |
|     |    |    |    |                 | Mid-Low      | 1462  | 292400 | 1455.16 | 291032 | 12  | 15 | -    | 291824 | 31 | - | 0     | -  |   |  |
|     |    |    |    |                 | Mid-High     | 1487  | 297400 | 1478    | 295600 | 24  |    | -    | 296824 | 31 | - | 0     | -  |   |  |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Note 2: FR1 carrier without any coreset is indicated in the MIB by setting  $k_{SSB} = 31$ ,  $controlResourceSetZero = 0$  and  $searchSpaceZero = 0$  (TS 38.213 [22], clause 13).

**Table 6.2.3.1-3: Test frequencies for NR TDD FR1 bands using 5 MHz channel bandwidth**

| NR Band | SCS [kHz] | CBW [MHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPointA [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1   |
|---------|-----------|-----------|-------------------------|-------------------|----------------------|------------------------|---------------|---------------------------------|--------------------------------|--------------------|------|------------------------------|-----------|---------------------------------|--|---|
| n34     | 15        | 5         | 25                      | Downlink & Uplink | Low, Mid, High       |                        |               |                                 |                                |                    |      |                              |           |                                 |  | Same values as for Low, Mid and High range in clause 4.3.1.1.12 for bandwidth=5 MHz and SCS=15 kHz. |
| n51     | 15        | 5         | 25                      | Downlink & Uplink | Low                  |                        |               |                                 |                                |                    |      |                              |           |                                 |  | Same values as for Low range in clause 4.3.1.1.51 for bandwidth=5 MHz and SCS=15 kHz.               |
| n53     | 15        | 5         | 25                      | Downlink & Uplink | Low, High            |                        |               |                                 |                                |                    |      |                              |           |                                 |  | Same values as for Low and High range in clause 4.3.1.1.53 for bandwidth=5 MHz and SCS=15 kHz.      |

Table 6.2.3.1-4: Test frequencies for NR TDD FR1 bands using 10 MHz channel bandwidth

| NR Band | SCS [kHz] | CBW [MHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] | Carrier centre [ARFCN]  | point A [MHz] | absoluteFrequencyPointA [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |    |
|---------|-----------|-----------|-------------------------|-------------------|----------------------|---|---------------|---------------------------------|--------------------------------|--------------------|------|------------------------------|-----------|---------------------------------|--|-------------------------------------|----|
| n38     | 15        | 10        | 52                      | Downlink & Uplink | Low, High            | Same values as for Low and High range in clause 4.3.1.1.38 for bandwidth=10 MHz and SCS=15 kHz. |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |                   | Mid-Low              | 2588.3  | 517660        | 2581.46                         | 516292                         | 12                 | 30   | 6470                         | 517690    | 10                              | 0                                      | 1 (6)                               | 18 |
|         |           |           |                         |                   | Mid-High             | 2601.7  | 520340        | 2592.7                          | 518540                         | 24                 |      | 6505                         | 520370    | 10                              | 0                                      | 1 (6)                               | 30 |
| n39     | 15        | 10        | 52                      | Downlink & Uplink | Low, High            | Same values as for Low and High range in clause 4.3.1.1.39 for bandwidth=10 MHz and SCS=15 kHz. |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |                   | Mid-Low              | 1895  | 379000        | 1888.16                         | 377632                         | 12                 | 30   | 4736                         | 378970    | 2                               | 3                                      | 0 (2)                               | 17 |
|         |           |           |                         |                   | Mid-High             | 1905  | 381000        | 1896                            | 379200                         | 24                 |      | 4761                         | 380910    | 6                               | 1                                      | 0 (2)                               | 27 |
| n40     | 15        | 10        | 52                      | Downlink & Uplink | Low, High            | Same values as for Low and High range in clause 4.3.1.1.40 for bandwidth=10 MHz and SCS=15 kHz. |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |                   | Mid-Low              | 2335  | 467000        | 2328.16                         | 465632                         | 12                 | 30   | 5839                         | 467090    | 6                               | 2                                      | 1 (6)                               | 20 |
|         |           |           |                         |                   | Mid-High             | 2365  | 473000        | 2356                            | 471200                         | 24                 |      | 5914                         | 473090    | 6                               | 2                                      | 1 (6)                               | 32 |
| n48     | 15        | 10        | 52                      | Downlink & Uplink | Low, High            | Same values as for Low and High range in clause 4.3.1.48 for bandwidth=10 MHz and SCS=15 kHz.   |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |                   | Mid-Low              | 3601.665  | 640111        | 3594.825                        | 639655                         | 12                 | 30   | 7917                         | 640128    | 5                               | 1                                      | 1 (6)                               | 19 |
|         |           |           |                         |                   | Mid-High             | 3648.33   | 643222        | 3639.33                         | 642622                         | 24                 |      | 7949                         | 643200    | 2                               | 2                                      | 0 (2)                               | 28 |
| n50     | 15        | 10        | 52                      | Downlink & Uplink | Low, High            | Same values as for Low and High range in clause 4.3.1.1.50 for bandwidth=10 MHz and SCS=15 kHz. |               |                                 |                                |                    |      |                              |           |                                 |  |                                     |    |
|         |           |           |                         |                   | Mid-Low              | 1462  | 292400        | 1455.16                         | 291032                         | 12                 | 30   | 3655                         | 292370    | 2                               | 3                                      | 0 (2)                               | 17 |
|         |           |           |                         |                   | Mid-High             | 1487  | 297400        | 1478                            | 295600                         | 24                 |      | 3716                         | 297370    | 2                               | 3                                      | 0 (2)                               | 29 |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22] for all bands in the table. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 6.2.3.1-4A: Test frequencies for NR TDD FR1 bands using 60 MHz channel bandwidth

| NR Band | SCS [kHz] | CBW [MHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPointA [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |  |
|---------|-----------|-----------|-------------------------|-------------------|----------------------|------------------------|---------------|---------------------------------|--------------------------------|--------------------|------|------------------------------|-----------|---------------------------------|--|-------------------------------------|--|
| n41     | 30        | 60        | 162                     | Downlink & Uplink | Low, Mid, High       |                        |               |                                 |                                |                    |      |                              |           |                                 |  |                                     | Same values as for Low, Mid and High range in clause 4.3.1.1.41 for bandwidth=60 MHz and SCS=30 kHz. |

Table 6.2.3.1-5: Test frequencies for NR TDD FR1 bands using 100 MHz channel bandwidth

| NR Band | SCS [kHz] | CBW [MHz] | carrierBandwidth [PRBs] | Range             | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absoluteFrequencyPointA [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absoluteFrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |  |
|---------|-----------|-----------|-------------------------|-------------------|----------------------|------------------------|---------------|---------------------------------|--------------------------------|--------------------|------|------------------------------|-----------|---------------------------------|--|-------------------------------------|--|
| n77     | 30        | 100       | 273                     | Downlink & Uplink | Low, High            |                        |               |                                 |                                |                    |      |                              |           |                                 |  |                                     | Same values as for Low and High range in clause 4.3.1.1.77 for bandwidth=100 MHz and SCS=30 kHz. |
|         |           |           |                         |                   | Mid-Low              | 3616.68                | 641112        | 3563.22                         | 637548                         | 12                 | 30   | 7896                         | 638112    | 12                              | 0                                      | 1 (1)                               | 26   |
|         |           |           |                         |                   | Mid-High             | 3883.32                | 658888        | 3825.54                         | 655036                         | 24                 |      | 8081                         | 655872    | 20                              | 0                                      | 0 (0)                               | 48   |
| n78     | 30        | 100       | 273                     | Downlink & Uplink | Low, High            |                        |               |                                 |                                |                    |      |                              |           |                                 |  |                                     | Same values as for Low and High range in clause 4.3.1.1.78 for bandwidth=100 MHz and SCS=30 kHz. |
|         |           |           |                         |                   | Mid-Low              | 3483.33                | 632222        | 3429.87                         | 628658                         | 12                 | 30   | 7804                         | 629280    | 22                              | 0                                      | 3 (3)                               | 30   |
|         |           |           |                         |                   | Mid-High             | 3616.68                | 641112        | 3558.9                          | 637260                         | 24                 |      | 7896                         | 638112    | 12                              | 0                                      | 1 (1)                               | 50   |
| n79     | 30        | 100       | 273                     | Downlink & Uplink | Low, High            |                        |               |                                 |                                |                    |      |                              |           |                                 |  |                                     | Same values as for Low and High range in clause 4.3.1.1.79 for bandwidth=100 MHz and SCS=30 kHz. |
|         |           |           |                         |                   | Mid-Low              | 4616.67                | 707778        | 4563.21                         | 704214                         | 12                 | 30   | 8592                         | 704928    | 18                              | 6                                      | 1 (4)                               | 38   |
|         |           |           |                         |                   | Mid-High             | 4783.35                | 718890        | 4725.57                         | 715038                         | 24                 |      | 8720                         | 717216    | 18                              | 54                                     | 1 (4)                               | 160  |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-4 in TS 38.213 [22] for all bands in the table except for band n79 where Table 13-6 apply. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 6.2.3.1-6: Test frequencies for NR TDD FR2 bands using 100 MHz channel bandwidth

| NR Band | SCS [kHz] | CBW [MHz] | carrier bandwidth [PRBs] | Range             | Carrier centre [MHz] | Carrier centre [ARFCN]   | point A [MHz] | absolute FrequencyPoint A[ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSCN | absolute FrequencySSB [ARFCN] | $k_{\text{SSB}}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) Note 1 | offsetToPointA (SIB1) [PRBs] Note 1 |    |
|---------|-----------|-----------|--------------------------|-------------------|----------------------|--|---------------|----------------------------------|--------------------------------|--------------------|------|-------------------------------|------------------|---------------------------------|--|-------------------------------------|----|
| n257    | 120       | 100       | 66                       | Downlink & Uplink | Low, High            | Same values as for Low and High range in clause 4.3.1.2.1.1 for bandwidth=100 MHz and SCS=120 kHz. |               |                                  |                                |                    |      |                               |                  |                                 |  |                                     |    |
|         |           |           |                          |                   | Mid-Low              | 27516.6  | 2071109       | 27451.8                          | 2070029                        | 12                 | 120  | 22444                         | 2070811          | 7                               | 6                                      | 1 (4)                               | 44 |
|         |           |           |                          |                   | Mid-High             | 28483.32   | 2087221       | 28401.24                         | 2085853                        | 24                 |      | 22500                         | 2086939          | 3                               | 7                                      | 1 (4)                               | 70 |
| n258    | 120       | 100       | 66                       | Downlink & Uplink | Low, High            | Same values as for Low and High range in clause 4.3.1.2.1.2 for bandwidth=100 MHz and SCS=120 kHz. |               |                                  |                                |                    |      |                               |                  |                                 |  |                                     |    |
|         |           |           |                          |                   | Mid-Low              | 25350  | 2034999       | 25285.2                          | 2033919                        | 12                 | 120  | 22318                         | 2034523          | 2                               | 3                                      | 0 (0)                               | 30 |
|         |           |           |                          |                   | Mid-High             | 26400  | 2052499       | 26317.92                         | 2051131                        | 24                 |      | 22379                         | 2052091          | 0                               | 2                                      | 1 (4)                               | 60 |
| n259    | 120       | 100       | 66                       | Downlink & Uplink | Low, High            | Same values as for Low and High range in clause 4.3.1.2.1.3 for bandwidth=100 MHz and SCS=120 kHz. |               |                                  |                                |                    |      |                               |                  |                                 |  |                                     |    |
|         |           |           |                          |                   | Mid-Low              | 40850.04   | 2293333       | 40785.24                         | 2292253                        | 12                 | 120  | 23215                         | 2292859          | 3                               | 3                                      | 0 (0)                               | 30 |
|         |           |           |                          |                   | Mid-High             | 42150  | 2314999       | 42067.92                         | 2313631                        | 24                 |      | 23290                         | 2314459          | 6                               | 0                                      | 0 (0)                               | 48 |
| n260    | 120       | 100       | 66                       | Downlink & Uplink | Low, High            | Same values as for Low and High range in clause 4.3.1.2.1.4 for bandwidth=100 MHz and SCS=120 kHz. |               |                                  |                                |                    |      |                               |                  |                                 |  |                                     |    |
|         |           |           |                          |                   | Mid-Low              | 38016.6  | 2246109       | 37951.8                          | 2245029                        | 12                 | 120  | 23051                         | 2245627          | 11                              | 2                                      | 0 (0)                               | 28 |
|         |           |           |                          |                   | Mid-High             | 38983.32   | 2262221       | 38901.24                         | 2260853                        | 24                 |      | 23107                         | 2261755          | 7                               | 3                                      | 0 (0)                               | 54 |
| n261    | 120       | 100       | 66                       | Downlink & Uplink | Low, High            | Same values as for Low and High range in clause 4.3.1.2.1.5 for bandwidth=100 MHz and SCS=120 kHz. |               |                                  |                                |                    |      |                               |                  |                                 |  |                                     |    |
|         |           |           |                          |                   | Mid-Low              | 27800.04   | 2075833       | 27735.24                         | 2074753                        | 12                 | 120  | 22460                         | 2075419          | 9                               | 1                                      | 1 (4)                               | 34 |
|         |           |           |                          |                   | Mid-High             | 28050  | 2079999       | 27967.92                         | 2078631                        | 24                 |      | 22474                         | 2079451          | 2                               | 0                                      | 0 (0)                               | 48 |

Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.

Table 6.2.3.1-7: Test frequencies for NR FDD FR1 SUL bands

| NR Band | SCS [kHz] | CBW [MHz] | <i>carrierBandwidth [PRBs]</i> | Range  |                | Carrier centre [MHz]  | Carrier centre [ARFCN] | point A [MHz] | <i>AbsoluteFrequencyPointA [ARFCN]</i> | <i>offsetToCarrier [Carrier PRBs]</i> |
|---------|-----------|-----------|--------------------------------|--------|----------------|---|------------------------|---------------|--|---------------------------------------|
| n80     | 15        | 10        | 52                             | Uplink | Low, Mid, High | Same values as for Low, Mid and High range in clause 4.3.1.1.180-1 for bandwidth=10 MHz and SCS=15 kHz. |                        |               |  |                                       |
| n81     | 15        | 10        | 52                             | Uplink | Low, Mid, High | Same values as for Low, Mid and High range in clause 4.3.1.1.181-1 for bandwidth=10 MHz and SCS=15 kHz. |                        |               |  |                                       |
| n82     | 15        | 10        | 52                             | Uplink | Low, Mid, High | Same values as for Low, Mid and High range in clause 4.3.1.1.182-1 for bandwidth=10 MHz and SCS=15 kHz. |                        |               |  |                                       |
| n83     | 15        | 10        | 52                             | Uplink | Low, Mid, High | Same values as for Low, Mid and High range in clause 4.3.1.1.183-1 for bandwidth=10 MHz and SCS=15 kHz. |                        |               |  |                                       |
| n84     | 15        | 10        | 52                             | Uplink | Low, Mid, High | Same values as for Low, Mid and High range in clause 4.3.1.1.184-1 for bandwidth=10 MHz and SCS=15 kHz. |                        |               |  |                                       |
| n86     | 15        | 10        | 52                             | Uplink | Low, Mid, High | Same values as for Low, Mid and High range in clause 4.3.1.1.186-1 for bandwidth=10 MHz and SCS=15 kHz. |                        |               |  |                                       |

### 6.2.3.2 Test frequencies for EN-DC band combinations for signalling testing

#### 6.2.3.2.1 General

The default channel bandwidths for EN-DC signalling test are specified per NR and E-UTRA band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

#### 6.2.3.2.2 E-UTRA 1CC and NR 1CC

For EN-DC Inter-band case with E-UTRA 1CC and NR 1CC (one E-UTRA band and one NR band) the EN-DC configurations are specified in clause 4.3.1.4.1.2 for EN-DC with NR FR1 and 4.3.1.5.1.2 for EN-DC with NR FR2.

The E-UTRA and NR test frequencies are specified in TS 36.508 [2], clause 6.2.3.1 for the E-UTRA band (E-UTRA f1, f2, f3 and f4); and in clause 6.2.3.1 for the NR band (NRf1, NRf2, NRf3, NRf4) and for the secondary NR band (NRf5, NRf6, NRf7) of the secondary EN-DC inter-band configuration.

For EN-DC Intra-band Contiguous case with E-UTRA 1CC and NR 1CC the EN-DC configurations and the test frequencies are specified in Table 6.2.3.2-1.

For EN-DC Intra-band Non-Contiguous with E-UTRA 1CC and NR 1CC case the EN-DC configurations and test frequencies are specified in Table 6.2.3.2-2.

For EN-DC Intra-Band Contiguous and EN-DC Intra-Band Non-Contiguous cases with E-UTRA 1CC and NR 1CC the mapping of frequency ranges to NR test frequencies NRf1, NRf2, NRf3, and NRf4 to PSCell; and to E-UTRA test frequencies f1, f2, f3, and f4 for PCell are as follows:

- for band combinations with only one test frequency: Low Range (NRf1, f1);
- for band combinations with up to two frequencies: Low Range (NRf1, f1), High Range (NRf2, f2);
- for band combinations with up to three frequencies: Mid Range (NRf3, f3), Low Range (NRf1, f1) and High Range (NRf2, f2);
- for band combinations with up to four frequencies: Mid-Low Range (NRf3, f3), High Range (NRf2, f2), Low Range (NRf1, f1) and Mid-High Range (NRf4, f4).

**Table 6.2.3.2.2-1: Test frequencies for EN-DC Intra-band Contiguous configurations with E-UTRA 1CC and NR 1CC**

| EN-DC channel bandwidth combination | CC         | Bandwidth [MHz] | carrierBandwidth [PRBs] | Range             |                | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) | offsetToPointA (SIB1) [PRBs] |
|-------------------------------------|------------|-----------------|-------------------------|-------------------|----------------|-----------------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|-----------|---------------------------------|---------------------------------|------------------------------|
| DC_(n)41AA                          | E-UTRA CC1 | 20              | 100                     | Downlink & Uplink | Low, High      |                             |                        |               |                                   |                                 |                    |       |                               |           |                                 |                                 |                              |
|                                     | NR CC1     | 60              | 162                     | Downlink & Uplink | Low, High      |                             |                        |               |                                   |                                 |                    |       |                               |           |                                 |                                 |                              |
| DC_(n)71AA                          | E-UTRA CC1 | 5               | 25                      | Downlink          | Low, Mid, High |                             |                        |               |                                   |                                 |                    |       |                               |           |                                 |                                 |                              |
|                                     |            |                 |                         | Uplink            | Low, Mid, High |                             |                        |               |                                   |                                 |                    |       |                               |           |                                 |                                 |                              |
|                                     | NR         | 5               | 25                      | Downlink          | Low, Mid, High |                             |                        |               |                                   |                                 |                    |       |                               |           |                                 |                                 |                              |
|                                     |            |                 |                         | Uplink            | Low, Mid, High |                             |                        |               |                                   |                                 |                    |       |                               |           |                                 |                                 |                              |

**Table 6.2.3.2.2-2: Test frequencies for EN-DC Intra-Band Non-Contiguous configurations with E-UTRA 1CC and NR 1CC**

| EN-DC channel bandwidth combination | CC         | Bandwidth [MHz] | carrierBandwidth [PRBs] | Range             |     | Carrier centre [MHz] Note 2 | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) | offsetToPointA (SIB1) [PRBs] |
|-------------------------------------|------------|-----------------|-------------------------|-------------------|-----|-----------------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|-------------------------------|-----------|---------------------------------|---------------------------------|------------------------------|
| DC_41A_n4_1A                        | E-UTRA CC1 | 20              | 100                     | Downlink & Uplink | Low |                             |                        |               |                                   |                                 |                    |       |                               |           |                                 |                                 |                              |
|                                     | NR CC1     | 60              | 162                     | Downlink & Uplink | Low |                             |                        |               |                                   |                                 |                    |       |                               |           |                                 |                                 |                              |

### 6.2.3.2.3 E-UTRA 1CC and NR CA 2CC

For EN-DC Inter-band case with E-UTRA 1CC and NR CA 2CC the EN-DC configurations are specified in clauses 4.3.1.4.1.2 (two bands) and 4.3.1.4.1.3 (three bands) for EN-DC and NR CA 2CC with FR1 bands, 4.3.1.5.1.2 (two bands) and 4.3.1.5.1.3 (three bands) for EN-DC with NR CA 2CC with FR2 bands and 4.3.1.6.1.2 for EN-DC and NR CA 2CC with FR1 and FR2 bands.

For EN-DC Inter-band case (3 bands), the E-UTRA test frequencies are specified in TS 36.508 [2], clause 6.2.3.1 for the E-UTRA band (E-UTRA f1) and the NR test frequencies are specified in clause 6.2.3.1 for the NR band used as PSCell (NRf1, NRf2, NRf3, NRf4) and for the NR band used as SCell (NRf5, NRf6, NRf7).

For EN-DC Inter-band case (2 bands) with NR Intra-band contiguous CA 2CC and NR Intra-band non-contiguous CA 2CC, the E-UTRA test frequencies are specified in TS 36.508 [2], clause 6.2.3.1 for the E-UTRA band (E-UTRA f1) and the NR test frequencies are specified in clause 6.2.3.4 for the NR CA CC1 used as PSCell (NRf1, NRf3) and for the NR CA CC2 used as SCell (NRf2, NRf4,).

For EN-DC Intra-band Contiguous case with E-UTRA 1CC and NR CA 2CC the EN-DC configurations and the test frequencies are specified in Table 6.2.3.2.3-1.

For EN-DC Intra-band Non-Contiguous case with E-UTRA 1CC and NR 2CC the EN-DC configurations and test frequencies are specified in Table 6.2.3.2.3-2.

For EN-DC Intra-Band Contiguous and EN-DC Intra-Band Non-Contiguous cases with E-UTRA 1CC and NR CA 2CC the mapping of frequency ranges to NR test frequencies NRf1 for PSCell (CC1) and NRf2 for SCell (CC2); and to E-UTRA test frequency f1 for PCell is:

- for band combinations with only one test frequency: Low Range (NRf1=CC1, NRf2=CC2, f1); and
- for band combinations with up to two frequencies: Low Range (NRf1=CC1, NRf2=CC2, f1), High Range (NRf3=CC1, NRf4=CC2, f2).

Editor's note: No EN-DC Intra-band Contiguous configurations with NR CA 2CC have yet been introduced in TS 38.101-3.

**Table 6.2.3.2.3-1: Test frequencies for EN-DC Intra-band Contiguous configurations with E-UTRA 1CC and NR CA 2CC**

FFS

Editor's note: No EN-DC Intra-band Non-Contiguous configurations with NR CA 2CC have yet been introduced in TS 38.101-3.

**Table 6.2.3.3-2: Test frequencies for EN-DC Intra-Band Non-Contiguous configurations with E-UTRA 1CC and NR CA 2CC**

FFS

### 6.2.3.3 Test frequencies for NR and E-UTRA Inter-RAT signalling testing

For NR and E-UTRA Inter-RAT testing, it is assumed that the NR and E-UTRA bands under test are different in order to avoid unnecessary interferences:

- for NR bands, the frequencies NRf1, NRf2, NRf3 and NRf4 are mapped as per clause 6.2.3.1
- for E-UTRA bands, the signalling test frequencies E-UTRA f1, E-UTRA f2, E-UTRA f3 and E-UTRA f4 are mapped respectively on f1, f2, f3 and f4 as per TS 36.508 [2] clause 6.2.3.1.

### 6.2.3.4 Test frequencies for NR CA configurations for signalling testing

The default channel bandwidths for NR CA signalling test are specified per NR band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

For NR CA Inter-band case (2 bands) the NR CA configurations are specified in clause 4.3.1.1.2 and NR test frequencies are specified in clause 6.2.3.1 for the NR band used as PCell (NRf1, NRf2, NRf3, NRf4) and for the NR band used as Scell (NRf5, NRf6, NRf7).

For NR CA Intra-band Contiguous case (2 CCs) the NR CA configurations and the test frequencies are specified in Table 6.2.3.4-1 for FR1 and in Table 6.2.3.4-2 for FR2. For NR CA Intra-band Non-Contiguous (2 CCs) case the NR CA configurations and test frequencies are specified in Table 6.2.3.4-3 for FR1 and in Table 6.2.3.4-4 for FR2.

For NR CA Intra-Band Contiguous case (2 CCs) and NR CA Intra-Band Non-Contiguous case (2 CCs) the mapping of frequency ranges to NR test frequencies NRf1, NRf2, NRf3, and NRf4 and PCell (CC1) and SCell (CC2) are as follows:

- for Intra-band configurations with only one test frequency: Low Range (NRf1=CC1 and NRf2=CC2); and
- for Intra-band configurations with up to two frequencies: Low Range (NRf1=CC1 and NRf2=CC2), High Range (NRf3=CC1 and NRf4=CC2).

**Table 6.2.3.4-1: Test frequencies for NR CA Intra-band Contiguous configurations with FR1**

| NR CA configuration | CC       | CBW [MHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2  | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs ] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) | offsetTo PointA (SIB1) [PRBs] |
|---------------------|----------|-----------|--------------------------|-------------------|------|--|------------------------|---------------|-----------------------------------|----------------------------------|--------------------|-------|-------------------------------|-----------|---------------------------------|---------------------------------|-------------------------------|
| CA_n41C             | CC1, CC2 | 60+60     | 162+162                  | Downlink & Uplink | Low  | Same values as for Low range in Table 4.3.1.1.3.41.1-1 for CBW combination 60+60 and SCS=30 kHz.             |                        |               |                                   |                                  |                    |       |                               |           |                                 |                                 |                               |
| CA_n66B             | CC1      | 10+       | 52+                      | Downlink          | Low  | Same values as for Low range in Table 4.3.1.1.3.66.1-1 for CBW combination 10+15 and SCS=15 kHz.             |                        |               |                                   |                                  |                    |       |                               |           |                                 |                                 |                               |
|                     | CC2      | 15        | 79                       | & Uplink          | High |  |                        |               |                                   |                                  |                    |       |                               |           |                                 |                                 |                               |
| CA_n78C             | CC1, CC2 | 100+100   | 273+273                  | Downlink & Uplink | Low  | Same values as for Low and High ranges in Table 4.3.1.1.3.78.1-1 for CBW combination 100+100 and SCS=30 kHz. |                        |               |                                   |                                  |                    |       |                               |           |                                 |                                 |                               |
| High                |          |           |                          |                   |      |  |                        |               |                                   |                                  |                    |       |                               |           |                                 |                                 |                               |

**Table 6.2.3.4-2: Test frequencies for NR CA Intra-band Contiguous configurations with FR2**

| NR CA configuration | CC       | CBW [MHz] | carrier Bandwidth [PRBs] | Range             |      | Carrier centre [MHz] Note 2  | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs ] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORE SET#0 Index (Offset [RBs]) | offsetTo PointA (SIB1) [PRBs] |
|---------------------|----------|-----------|--------------------------|-------------------|------|--|------------------------|---------------|-----------------------------------|----------------------------------|--------------------|-------|-------------------------------|-----------|---------------------------------|---------------------------------|-------------------------------|
| CA_n257G            | CC1, CC2 | 100+100   | 66+66                    | Downlink & Uplink | Low  | Same values as for Low and High ranges in Table 4.3.1.2.3.1.6-3 for CBW combination 100+100 and SCS=120 kHz. |                        |               |                                   |                                  |                    |       |                               |           |                                 |                                 |                               |
| CA_n260G            | CC1, CC2 | 100+100   | 66+66                    | Downlink & Uplink | High | Same values as for Low and High ranges in Table 4.3.1.2.3.4.6-2 for CBW combination 100+100 and SCS=120 kHz. |                        |               |                                   |                                  |                    |       |                               |           |                                 |                                 |                               |
|                     |          |           |                          |                   | Low  |  |                        |               |                                   |                                  |                    |       |                               |           |                                 |                                 |                               |
| CA_n261G            | CC1, CC2 | 100+100   | 66+66                    | Downlink & Uplink | Low  | Same values as for Low and High ranges in Table 4.3.1.2.3.5.6-2 for CBW combination 100+100 and SCS=120 kHz. |                        |               |                                   |                                  |                    |       |                               |           |                                 |                                 |                               |
| High                |          |           |                          |                   |      |  |                        |               |                                   |                                  |                    |       |                               |           |                                 |                                 |                               |

**Table 6.2.3.4-3: Test frequencies for NR CA Intra-Band Non-Contiguous configurations with FR1**

| NR CA configuration | CC          | CBW [MHz] | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz]<br>Note 2 | Carrier centre [ARFCN]  | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs ] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 Index [RBs] | CORE SET#0 Index (Offset [RBs]) | offsetTo PointA (SIB1) [PRBs] |
|---------------------|-------------|-----------|--------------------------|-------------------|--------------------------------|---|---------------|-----------------------------------|----------------------------------|--------------------|-------|-------------------------------|-----------|---------------------------------------|---------------------------------|-------------------------------|
| CA_n66(2A)          | CC1,<br>CC2 | 10+10     | 52+52                    | Downlink & Uplink | Low<br>High                    | Same values as for Low and High ranges in Table 4.3.1.1.5.66-1 for CBW combination 10+10. |               |                                   |                                  |                    |       |                               |           |                                       |                                 |                               |

**Table 6.2.3.4-4: Test frequencies for NR CA Intra-Band Non-Contiguous configurations with FR2**

| NR CA configuration | CC         | CBW [MHz]  | carrier Bandwidth [PRBs] | Range             | Carrier centre [MHz]<br>Note 2 | Carrier centre [ARFCN]  | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offset ToCarrier [Carrier PRBs ] | SS block SCS [kHz] | GSC N | absolute FrequencySSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 Index [RBs] | CORE SET#0 Index (Offset [RBs]) | offsetTo PointA (SIB1) [PRBs] |
|---------------------|------------|------------|--------------------------|-------------------|--------------------------------|---|---------------|-----------------------------------|----------------------------------|--------------------|-------|-------------------------------|-----------|---------------------------------------|---------------------------------|-------------------------------|
| CA_n261(2A)         | CC1<br>CC2 | 100<br>100 | 66<br>66                 | Downlink & Uplink | Low<br>High                    | Same values as for Low and High ranges in Table 4.3.1.1.5.66-1 for CBW combination 100+100 and SCS=120 kHz. |               |                                   |                                  |                    |       |                               |           |                                       |                                 |                               |

### 6.2.3.5 Test frequencies for MFBI signalling testing

For signalling test cases, the mapping of MFBI frequency ranges to NR test frequencies are as follows: Low Range (NRf1), Mid Range (NRf2) and High Range (NRf3).

The test frequencies, subcarrier spacing, default channel bandwidth, SS/PBCH block and CORESET#0 parameters for signalling are specified in Table 6.2.3.5-1.

**Table 6.2.3.5-1: Test frequencies for MFBI NR bands in FR1**

| NR Band | MFBI overlapping NR Band | SCS [kHz] | Band width [MHz] | carrier bandwidth [PRBs] | Range             | Carrier centre [MHz] | Carrier centre [ARFCN]  | point A [MHz] | absoluteFrequency PointA [ARFCN] | offsetToCarrier [Carrier PRBs] | SS block SCS [kHz] | GS CN | absoluteFrequency SSB [ARFCN] | $k_{SSB}$ | Offset Carrier CORE SET#0 [RBs] | CORESET #0 Index (Offset [RBs]) | offsetToPoint A (SIB1) [PRBs] |
|---------|--------------------------|-----------|------------------|--------------------------|-------------------|----------------------|---|---------------|----------------------------------|--------------------------------|--------------------|-------|-------------------------------|-----------|---------------------------------|---------------------------------|-------------------------------|
| n2      |                          |           |                  |                          |                   |                      |   |               |                                  |                                |                    |       |                               |           |                                 |                                 |                               |
| n2      | n25                      | 15        | 10               | 52                       | Downlink          | Low, Mid, High       | Same values as for Low, Mid and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.   |               |                                  |                                |                    |       |                               |           |                                 |                                 |                               |
|         |                          |           |                  |                          | Uplink            | Low, Mid, High       | Same values as for Low, Mid and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.   |               |                                  |                                |                    |       |                               |           |                                 |                                 |                               |
| n25     | n2                       | 15        | 10               | 52                       | Downlink          | Low, Mid, High       | Same values as for Low, Mid and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.   |               |                                  |                                |                    |       |                               |           |                                 |                                 |                               |
|         |                          |           |                  |                          | Uplink            | Low, Mid, High       | Same values as for Low, Mid and High range in clause 4.3.1.1.1.2 for bandwidth=10 MHz and SCS=15 kHz.   |               |                                  |                                |                    |       |                               |           |                                 |                                 |                               |
| n38     | n41                      | 15        | 10               | 52                       | Downlink & Uplink | Low, Mid, High       | Same values as for Low, Mid and High range in clause 4.3.1.1.1.38 for bandwidth=10 MHz and SCS=15 kHz.  |               |                                  |                                |                    |       |                               |           |                                 |                                 |                               |
| n41     | n38                      | 15        | 10               | 52                       | Downlink & Uplink | Low, Mid, High       | Same values as for Low, Mid and High range in clause 4.3.1.1.1.38 for bandwidth=10 MHz and SCS=15 kHz.  |               |                                  |                                |                    |       |                               |           |                                 |                                 |                               |
| n77     | n78                      | 30        | 100              | 273                      | Downlink & Uplink | Low, Mid, High       | Same values as for Low, Mid and High range in clause 4.3.1.1.1.78 for bandwidth=100 MHz and SCS=30 kHz. |               |                                  |                                |                    |       |                               |           |                                 |                                 |                               |
| n78     | n77                      | 30        | 100              | 273                      | Downlink & Uplink | Low, Mid, High       | Same values as for Low, Mid and High range in clause 4.3.1.1.1.78 for bandwidth=100 MHz and SCS=30 kHz. |               |                                  |                                |                    |       |                               |           |                                 |                                 |                               |

Table 6.2.3.5-2: Test frequencies for MFBI NR bands in FR2

| NR Band   | MFBI overl appin g NR Band | SC S [kHz] | Band width [MHz] | carrie rBan dwidt h [PRBs] | Range              | Carrier centre [MHz] | Carrier centre [ARFCN]  | point A [MHz] | absolute Frequen cyPoint A[ARFC N] | offs etT oCa rrier [Car rier PR Bs] | SS blo ck SC S [kHz] | GSCN | absolute Frequen cySSB [ARFCN] | $k_{SSB}$ | Offse t Carri er COR ESET #0 [RBs] Note 2 | COR ESET #0 Index (Offs et [RBs]) Note 1 | offset ToPo intA (SIB1 ) [PRB s] Note 1 |      |  |
|---|----------------------------|------------|------------------|----------------------------|--------------------|----------------------|---|---------------|------------------------------------|-------------------------------------|----------------------|------|--------------------------------|-----------|---|--|---|------|--|
| n257  | n258                       | 120        | 100              | 66                         | Downli nk & Uplink | Low                  | 26557.08  | 2055117       | 26509.56                           | 2054325                             | 0                    | 120  | 22388                          | 2054683   | 0   | 1 (4)                                    | 1                                       | 8    |  |
|   |                            |            |                  |                            |                    | Mid                  | 27006.36  | 2062605       | 26811.96                           | 2059365                             | 102                  |      | 22414                          | 2062171   | 0   | 1 (4)                                    | 1                                       | 212  |  |
|   |                            |            |                  |                            |                    | High                 | 27438.36  | 2069805       | 26665.08                           | 2056917                             | 504                  |      | 22439                          | 2069371   | 0   | 1 (4)                                    | 1                                       | 1016 |  |
| n257  | n261                       | 120        | 100              | 66                         | Downli nk & Uplink | Low, Mid, High       | Same values as for Low, Mid and High range in clause 4.3.1.2.1.5 for bandwidth=100 MHz and SCS=120 kHz. |               |                                    |                                     |                      |      |                                |           |   |  |   |      |  |
| n258  | n257                       | 120        | 100              | 66                         | Downli nk & Uplink | Low                  | 26557.08  | 2055117       | 26509.56                           | 2054325                             | 0                    | 120  | 22388                          | 2054683   | 11  | 0  | 1 (4)                                   | 8    |  |
|   |                            |            |                  |                            |                    | Mid                  | 27006.36  | 2062605       | 26811.96                           | 2059365                             | 102                  |      | 22414                          | 2062171   | 11  | 0  | 1 (4)                                   | 212  |  |
|   |                            |            |                  |                            |                    | High                 | 27438.36  | 2069805       | 26665.08                           | 2056917                             | 504                  |      | 22439                          | 2069371   | 11  | 0  | 1 (4)                                   | 1016 |  |
| n261  | n257                       | 120        | 100              | 66                         | Downli nk & Uplink | Low, Mid, High       | Same values as for Low, Mid and High range in clause 4.3.1.2.1.5 for bandwidth=100 MHz and SCS=120 kHz. |               |                                    |                                     |                      |      |                                |           |   |  |   |      |  |
| <p>Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-1 in TS 38.213 [22]. The value of CORESET#0 Index is signalled in controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2.</p> <p>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the lowest subcarrier of CORESET#0. It corresponds to the parameter <math>\Delta F_{\text{OffsetCORESET-0-Carrier}}</math> in Annex C expressed in number of common RBs.</p> |                            |            |                  |                            |                    |                      |   |               |                                    |                                     |                      |      |                                |           |   |  |   |      |  |

### 6.2.3.6 Test frequencies for NR DC configurations for signalling testing

The default channel bandwidths for NR DC signalling test are specified per NR band. The test frequencies are defined so that no frequency overlapping takes place, in order to avoid unnecessary inter-frequency interference.

For NR DC (2 bands, 2CC) the NR DC configurations are specified in clause 4.3.1.3.2.1 for 1CC FR1 and 1CC FR2. NR test frequencies are specified in clause 6.2.3.1 for the NR band used as PCell (NRf1, NRf2, NRf3, NRf4) and for the NR band used as PSCell (NRf5, NRf6, NRf7).

For NR DC with NR intra-band contiguous CA (2 bands, 3CC) the NR DC configurations are specified in clause 4.3.1.3.2.1 for 1CC FR1 and 2CC FR2. NR test frequencies are specified in clause 6.2.3.1 for the NR FR1 band used as PCell (NRf1) and in Table 6.2.3.4-2 for NR intra-band contiguous CA as PSCell (CC1, NRf5) and SCell (CC2, NRf6).

## 6.3 Reference system configurations

### 6.3.1 Cell configurations

**Editor's Note:** To define different types of SS cell configurations. It may be similar as defined in 3GPP TS 36.508 [2], clause 6.3.3 and 6.3.4 i.e. full, minimum uplink, broadcast only and virtual cell configuration. But details are FFS and depending on different connectivity options (MR-DC and SA).

#### 6.3.1.1 Intra-frequency neighbouring cell list in SIB3 for NR cells

Intra-frequency neighbouring cell list for signalling test cases is defined in table 6.3.1.1-1. This table is referred to in the default contents of IE *intraFreqNeighCellList* in *SIB3* defined in table 4.6.2-2.

**Table 6.3.1.1-1: Intra-frequency neighbouring cell lists for NR cells**

| cell ID    | Test Frequency | number of entries | intra-frequency neighbouring cell list |           |            |
|------------|----------------|-------------------|--|-----------|------------|
|            |                |                   | physCellId[n]                          | 1         | 1          |
| NR Cell 1  | NRf1           | 3                 | NR Cell 2                              | NR Cell 4 | NR Cell 11 |
| NR Cell 2  | NRf1           | 3                 | NR Cell 1                              | NR Cell 4 | NR Cell 11 |
| NR Cell 4  | NRf1           | 3                 | NR Cell 1                              | NR Cell 2 | NR Cell 11 |
| NR Cell 11 | NRf1           | 3                 | NR Cell 1                              | NR Cell 2 | NR Cell 4  |
| NR Cell 3  | NRf2           | 1                 | NR Cell 23                             | -         | -          |
| NR Cell 23 | NRf2           | 1                 | NR Cell 3                              | -         | -          |

**Editor's Note:** The intra-frequency NR neighbouring cell list for signalling NAS test cases when cells are on same PLMN is FFS.

#### 6.3.1.2 Inter-frequency carrier frequency list in SIB4 for NR cells

Inter-frequency NR carrier frequency list for signalling test cases is defined in table 6.3.1.2-1. This table is referred to in the default contents of IE *interFreqCarrierFreqList* in *SIB4* defined in table 4.6.2-3.

**Table 6.3.1.2-1: Inter-frequency carrier frequency lists for NR cells**

| cell ID  | Test Frequency   | number of entries | interFreqCarrierFreqList |      |      |
|--|------------------|-------------------|--------------------------|------|------|
|  |                  |                   | dl-CarrierFreq[n]        |      |      |
|  |                  |                   | 1                        | 2    | 3    |
| NR Cell 1<br>NR Cell 2<br>NR Cell 4<br>NR Cell 11  | NRf1<br>(Note 2) | 3                 | NRf2                     | NRf3 | NRf5 |
| NR Cell 3<br>NR Cell 23  | NRf2<br>(Note 2) | 3                 | NRf1                     | NRf3 | NRf5 |
| NR Cell 6  | NRf3<br>(Note 2) | 3                 | NRf1                     | NRf2 | NRf5 |
| NR Cell 10   | NRf5<br>(Note 3) | 3                 | NRf1                     | NRf2 | NRf3 |
| Note 1: Depending on the Band under test, NRf3 may not be applicable.<br>Note 2: In case of Test frequency NRf1, NRf2 and NRf3, dl-CarrierFreq NRf5 as part of inter-frequency list is applicable only in case of multi-band scenarios.<br>Note 3: Test frequency NRf5 is applicable only in case of multi-band scenarios. |                  |                   |                          |      |      |

Editor's Note: The inter-frequency NR carrier frequency list for signalling NAS test cases when cells are on same PLMN is FFS.

### 6.3.1.3 E-UTRA carrier frequency list in SIB5 for NR cells

The frequency mapping of E-UTRA cells are defined as per TS 36.508 [2] clause 4.4.2 and TS 36.508 [2] clause 6.3.2 for NGC NAS test cases, E-UTRA frequency mapping is according to clause 6.2.3.3. E-UTRA carrier frequency list for signalling test cases is defined in table 6.3.1.3-1. This table is referred to in the default contents of IE *carrierFreqListEUTRA* in *SIB5* defined in table 4.6.2-4.

**Table 6.3.1.3-1: E-UTRA carrier frequency lists for NR cells**

| interFreqCarrierFreqList   |                |
|--|----------------|
| number of entries  | carrierFreq[n] |
|  | 1              |
| 1  | E-UTRA f1      |
| 2  | E-UTRA f2      |
| 3  | E-UTRA f3      |
| 4  | E-UTRA f4      |
| Note 1: E-UTRAf1, E-UTRAf2, E-UTRAf3, E-UTRAf4 are according to clause 6.2.3.3<br>Note 2: Depending on the Band under test, E-UTRA f2 or E-UTRA f3 or E-UTRA f4 may not be applicable. |                |

**Table 6.3.1.3-2: Void**

### 6.3.2 Default configurations for NAS test cases

The default configurations specified in this subclause apply only to NAS test cases. They apply to all NAS test cases unless otherwise specified.

#### 6.3.2.1 Simulated network scenarios for NAS test cases

Simulated network scenarios for NAS test cases to be tested are specified in the pre-test conditions of each individual test case.

Any combination is allowed with the following restrictions:

- NGC Cell B shall not be used if NGC Cell D is used
- a maximum 3 cells on the same frequency can be used, i.e. only 3 cells out of NGC Cell A, NGC Cell B, NGC Cell C and NGC Cell D may be used simultaneously in each individual test case when cells in the test case are in different PLMNs (refer to Table 6.3.2.2-3).

### 6.3.2.2 Simulated NAS cells

Simulated NAS cells and default NAS parameters are specified in Table 6.3.2.2-1. Unless otherwise specified in a test case, default radio parameters of the NAS cells are specified as per Table 6.3.2.2-2.

Unless otherwise specified, the default parameters specified in clause 4.4.2 will also apply to all NAS cells.

**Table 6.3.2.2-1: Default NAS parameters for simulated NAS cells**

| NAS cell ID | Tracking Area |          |     | TA# list<br>(Note 1) | 5G-GUTI (Note 2) |            |             | 5G-TMSI |  |  |
|-------------|---------------|----------|-----|----------------------|------------------|------------|-------------|---------|--|--|
|             | TA#           | PLMN     |     |                      | AMF Identifier   |            |             |         |  |  |
|             |               | MCC      | MNC |                      | AMF Region ID    | AMF Set ID | AMF Pointer |         |  |  |
| NGC Cell A  | TAI-1         | (Note 3) |     | 1                    | TAI-1            | 254        | 1           | 1       |  |  |
| NGC Cell B  | TAI-2         | (Note 3) |     | 2                    | TAI-2            | 254        | 1           | 1       |  |  |
| NGC Cell C  | TAI-3         | (Note 3) |     | 3                    | TAI-3            | 252        | 1           | 1       |  |  |
| NGC Cell D  | TAI-4         | (Note 3) |     | 4                    | TAI-4            | 252        | 1           | 1       |  |  |
| NGC Cell E  | TAI-12        | 002      | 101 | 3                    | TAI-12           | 244        | 1           | 1       |  |  |
| NGC Cell F  | TAI-11        | 003      | 101 | 2                    | TAI-11           | 239        | 1           | 1       |  |  |
| NGC Cell G  | TAI-7         | (Note 4) | 02  | 1                    | TAI-7            | 238        | 1           | 1       |  |  |
| NGC Cell H  | TAI-8         | (Note 4) | 02  | 2                    | TAI-8            | 237        | 1           | 1       |  |  |
| NGC Cell I  | TAI-9         | 002      | 101 | 1                    | TAI-9            | 244        | 1           | 1       |  |  |
| NGC Cell J  | TAI-10        | 003      | 101 | 1                    | TAI-10           | 236        | 1           | 1       |  |  |

Note 1: The value(s) in the column TA# list indicates TAI(s) included in the response messages of the registration procedure for initial access or mobility (REGISTRATION ACCEPT) when the UE performs the registration procedure on a corresponding cell.

Note 2: The value in the column 5G-GUTI indicates GUTI included in the response messages of the registration procedure (REGISTRATION ACCEPT) when the UE performs the registration procedure on a corresponding cell.

Note 3: Set to the same Mobile Country Code and Mobile Network Code stored in EF<sub>IMSI</sub> on the test USIM card (subclause 4.8.3).

Note 4: Set to the same Mobile Country Code stored in EF<sub>IMSI</sub> on the test USIM card (subclause 4.8.3).

**Table 6.3.2.2-2: Default radio parameters for simulated NAS cells when cells are in same PLMN and access stratum is NR**

| NAS cell ID | Frequency | NR Cell ID<br>(Note 1) |
|-------------|-----------|------------------------|
| NGC Cell A  | NRf1      | NR Cell 1              |
| NGC Cell B  | NRf1      | NR Cell 2              |
| NGC Cell C  | NRf1      | NR Cell 4              |
| NGC Cell D  | NRf1      | NR Cell 11             |
| NGC Cell E  | NA        | NA                     |
| NGC Cell F  | NRf2      | NR Cell 3              |
| NGC Cell G  | NA        | NA                     |
| NGC Cell H  | NA        | NA                     |
| NGC Cell I  | NA        | NA                     |
| NGC Cell J  | NRf2      | NR Cell 12             |

Note 1: Default NR parameters for simulated NR cells are as specified in Table 4.4.2-2.  
 Note 2: For signalling tests, simultaneous co-existence of NGC Cells B and D is not allowed (in line with Table 4.4.2-1)

**Table 6.3.2.2-3: Default PLMN and radio parameters for simulated NAS cells when cells are in different PLMNs and access stratum is NR**

| NAS cell ID | PLMN                        | Frequency | NR Cell ID<br>(Note 1) |
|-------------|-----------------------------|-----------|------------------------|
| NGC Cell A  | MCC/MNC=MCC/MNC in USIM     | NRf1      | NR Cell 1              |
| NGC Cell B  | MCC/MNC=MCC/MNC in USIM     | NRf1      | NR Cell 2              |
| NGC Cell C  | MCC/MNC=MCC/MNC in USIM     | NRf1      | NR Cell 4              |
| NGC Cell D  | MCC/MNC=MCC/MNC in USIM     | NRf1      | NR Cell 11             |
| NGC Cell E  | MCC=002<br>MNC=101          | NRf2      | NR Cell 3              |
| NGC Cell F  | MCC=003<br>MNC=101          | NRf4      | NR Cell 14             |
| NGC Cell G  | MCC = MCC in USIM<br>MNC=02 | NRf2      | NR Cell 12             |
| NGC Cell H  | MCC = MCC in USIM<br>MNC=02 | NRf2      | NR Cell 23             |
| NGC Cell I  | MCC=002<br>MNC=101          | NRf3      | NR Cell 6              |
| NGC Cell J  | MCC=002<br>MNC=101          | NRf3      | NR Cell 13             |

Note 1: Default NR parameters for simulated NR cells are as specified in Table 4.4.2-2  
 Note 2: for signalling tests, simultaneous co-existence of NGC Cells B and D is not allowed (In line with Table 4.4.2-1)

## 6.4 Signalling Test Case specific USIM Configurations

### 6.4.1 General

The default USIM fields are specified in section 4.8.3. Specific USIM fields are set according to the USIM configuration specified in the tables below. PLMN settings are defined in TS 36.523-1 [42] Table 6.0.1-1.

Note: Changes to any existing USIM configuration can be done only if the change WILL NOT HAVE IMPACT on any of the tests which are referring to the configuration! To establish whether this might be the case, the test case author needs to review all tests in all RAN5 test specifications, which refer to the particular USIM configuration e.g. all test cases in TS 38.523-1 [12].

**Table 6.4.1-1: USIM Configuration 1**

| USIM field              | Priority    | Value  | Access Technology Identifier       |
|-------------------------|-------------|--|------------------------------------|
| EF <sub>IMSI</sub>      |             | The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.   |                                    |
| EF <sub>PLMNwAcT</sub>  | 1<br>2<br>3 | Default<br>PLMN17<br>PLMN16<br>Remaining mandatory entries use default values                    | Default<br>All specified<br>NG-RAN |
| EF <sub>OPLMNwACT</sub> | 1           | PLMN15<br>Remaining defined entries use default values   | All specified                      |
| EF <sub>HPLMNwAct</sub> | 1           | PLMN1  | NG-RAN                             |
| EF <sub>UST</sub>       |             | Services 20, 42, 43 and 74 are supported. Service 71 is not supported (there is no EHPLMN list). |                                    |
| EF <sub>HPPLMN</sub>    |             | 1 (6 minutes)  |                                    |

**Table 6.4.1-2: USIM Configuration 2**

| USIM field                | Priority | Value  | Access Technology Identifier |
|---------------------------|----------|--|------------------------------|
| EF <sub>5GS3GPPLOCI</sub> |          | PLMN4  |                              |
| EF <sub>PLMNwAcT</sub>    |          | Empty  |                              |
| EF <sub>IMSI</sub>        |          | The HPLMN (MCC+MNC) of the IMSI is set to PLMN1. |                              |
| EF <sub>UST</sub>         |          | Service n°71 and n°74 are "available"            |                              |
| EF <sub>EHPLMN</sub>      | 1<br>2   | PLMN15<br>PLMN1                                  |                              |
| EF <sub>LRPLMNSI</sub>    |          | 01   |                              |

**Table 6.4.1-3: USIM Configuration 3**

| USIM field                | Priority | Value  | Access Technology Identifier |
|---------------------------|----------|--|------------------------------|
| EF <sub>5GS3GPPLOCI</sub> |          | PLMN4  |                              |
| EF <sub>PLMNwAcT</sub>    |          | Empty  |                              |
| EF <sub>IMSI</sub>        |          | The HPLMN (MCC+MNC) of the IMSI is set to PLMN1. |                              |
| EF <sub>UST</sub>         |          | Service n°74 is "available"                      |                              |
| EF <sub>EHPLMN</sub>      |          | Empty  |                              |
| EF <sub>LRPLMNSI</sub>    |          | 01   |                              |

**Table 6.4.1-4: USIM configuration 4**

| USIM field              | Priority | Value   | Access Technology Identifier |
|-------------------------|----------|---|------------------------------|
| EF <sub>EHPLMN</sub>    | 1        | PLMN1<br>Remaining mandatory entries use default values |                              |
| EF <sub>PLMNwAcT</sub>  | 1        | PLMN2<br>Remaining mandatory entries use default values | NG-RAN                       |
| EF <sub>OPLMNwACT</sub> | 1        | PLMN3<br>Remaining mandatory entries use default values | NG-RAN                       |
| EF <sub>UST</sub>       |          | Services 20, 42 and 71 are supported.                   |                              |

**Table 6.4.1-5: USIM configuration 5**

| USIM field                | Priority | Value   | Access Technology Identifier |
|---------------------------|----------|---|------------------------------|
| EF <sub>5GS3GPPLOCI</sub> |          | PLMN4 (See preamble)                                    |                              |
| EF <sub>PLMNwAct</sub>    |          | Empty   |                              |
| EF <sub>IMSI</sub>        |          | The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.        |                              |
| EF <sub>UST</sub>         |          | Service 71 is not supported<br>Service 74 is supported. |                              |
| EF <sub>LRPLMNSI</sub>    |          | 00  |                              |
| EF <sub>EHPLMN</sub>      |          | 0xFF..FF  |                              |

**Table 6.4.1-6: USIM configuration 6**

| USIM field                | Priority | Value  | Access Technology Identifier |
|---------------------------|----------|--|------------------------------|
| EF <sub>5GS3GPPLOCI</sub> |          | PLMN1 (See preamble)   |                              |
| EF <sub>IMSI</sub>        |          | The HPLMN (MCC+MNC) of the IMSI is set to PLMN3.               |                              |
| EF <sub>PLMNwAct</sub>    | 1        | PLMN1<br>Remaining mandatory entries use default values        | NG-RAN                       |
| EF <sub>OPLMNwACT</sub>   | 1<br>2   | PLMN2<br>PLMN4<br>Remaining defined entries use default values | NG-RAN<br>NG-RAN             |
| EF <sub>UST</sub>         |          | Service 71 is not supported                                    |                              |

**Table 6.4.1-7: USIM configuration 7**

| USIM field              | Priority    | Value                     | Access technology        | Comment |
|-------------------------|-------------|---------------------------|--------------------------|---------|
| EF <sub>PLMNwAct</sub>  | 1<br>2      | PLMN13<br>PLMN13          | NG-RAN<br>E-UTRAN        |         |
| EF <sub>OPLMNwACT</sub> | 1<br>2<br>3 | PLMN2<br>PLMN14<br>PLMN13 | All<br>E-UTRAN<br>NG-RAN |         |

**Table 6.4.1-8: USIM configuration 8**

| USIM field              | Priority         | Value                                | Access technology                      | Comment |
|-------------------------|------------------|--------------------------------------|--|---------|
| EF <sub>OPLMNwACT</sub> | 1<br>2<br>3<br>4 | PLMN15<br>PLMN15<br>PLMN17<br>PLMN16 | NG-RAN<br>E-UTRAN<br>E-UTRAN<br>NG-RAN |         |

**Table 6.4.1-9: USIM configuration 9**

| USIM field             | Priority | Value           | Access technology | Comment  |
|------------------------|----------|-----------------|-------------------|--|
| EF <sub>PLMNwAct</sub> | 1<br>2   | PLMN1<br>PLMN15 | NG-RAN<br>E-UTRAN |  |
| EF <sub>HPPLMN</sub>   |          | 1(=6 min)       |                   | The HPLMN Search Period on the USIM shall be set to 6 minutes. |

**Table 6.4.1-10: USIM configuration 10**

| USIM field              | Priority | Value  | Access Technology Identifier |
|-------------------------|----------|--|------------------------------|
| EF <sub>OPLMNwACT</sub> | 1        | PLMN14                                       | NG-RAN                       |
|                         | 2        | PLMN13                                       | NG-RAN                       |
|                         | 3        | PLMN2  | NG-RAN                       |
|                         |          | Remaining defined entries use default values |                              |
| EF <sub>UST</sub>       |          | Service n°127 is "available"                 |                              |
| EF <sub>HPLMN</sub>     |          | 1(=6 min)                                    |                              |

**Table 6.4.1-11: USIM configuration 11**

| USIM field                | Priority | Value  | Access Technology Identifier |
|---------------------------|----------|--|------------------------------|
| EF <sub>5GS3GPPLOCI</sub> |          | PLMN1 (See preamble)   |                              |
| EF <sub>IMSI</sub>        |          | The HPLMN (MCC+MNC) of the IMSI is set to PLMN16.  |                              |
| EF <sub>PLMNwAct</sub>    | 1        | Default  | NG-RAN                       |
|                           | 2        | PLMN15   | NG-RAN                       |
| EF <sub>OPLMNwACT</sub>   | 1        | PLMN1  |                              |
|                           |          | Remaining defined entries use default values   |                              |
| EF <sub>HPLMNwAct</sub>   | 1        | PLMN16   | NG-RAN                       |
| EF <sub>UST</sub>         |          | Services 20, 42, 43, 74 and 96 are supported. Service 71 is not supported (there is no EHPLMN list). |                              |
| EF <sub>HPLMN</sub>       |          | 1 (6 minutes)  |                              |
| EF <sub>NASCONFIG</sub>   |          | MinimumPeriodicSearchTimer set to 7 minutes  |                              |

**Table 6.4.1-12: USIM configuration 12**

| USIM field              | Priority    | Value                     | Access technology           | Comment          |
|-------------------------|-------------|---------------------------|-----------------------------|------------------|
| EF <sub>PLMNwAct</sub>  |             | 3GPP TS 31.102, Annex E   |                             | The EF is empty. |
| EF <sub>OPLMNwACT</sub> | 1<br>2<br>3 | PLMN2<br>PLMN13<br>PLMN13 | NG-RAN<br>E-UTRAN<br>NG-RAN |                  |

**Table 6.4.1-13: USIM configuration 13**

| USIM field              | Priority    | Value                    | Access technology           | Comment |
|-------------------------|-------------|--------------------------|-----------------------------|---------|
| EF <sub>OPLMNwAct</sub> | 1<br>2<br>3 | PLMN2<br>PLMN2<br>PLMN13 | NG-RAN<br>E-UTRAN<br>NG-RAN |         |

**Table 6.4.1-14: Void**

**Table 6.4.1-15: USIM Configuration 15**

| USIM field          | Priority | Value  | Access Technology Identifier |
|---------------------|----------|--|------------------------------|
| EF <sub>IMSI</sub>  |          | The HPLMN (MCC+MNC) of the IMSI is set to PLMN1. |                              |
| EF <sub>FPLMN</sub> |          | PLMN2  |                              |

**Table 6.4.1-16: Void****Table 6.4.1-17: USIM Configuration 17**

| <b>USIM field</b>                           | <b>Priority</b> | <b>Value</b>   | <b>Access Technology Identifier</b> |
|---|-----------------|--|-------------------------------------|
| EF <sub>IMSI</sub>                          |                 | The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.   |                                     |
| EF <sub>PLMNwAcT</sub>                      | 1               | PLMN1  | NG-RAN                              |
| EF <sub>UST</sub>                           |                 | Service n°126 is "available".  |                                     |
| EF <sub>HPLMN</sub>                         |                 | PLMN1  |                                     |
| EF <sub>UAC_AIC</sub> and EF <sub>ACC</sub> |                 | For Bits b4 and b8 in byte 1 of EF <sub>ACC</sub> (defined in TS 31.102 clause 4.2.15), only single bit is set to 1. Bits b1 and b2 in byte 1 of EF <sub>UAC_AIC</sub> (defined in TS 31.102 clause 4.4.11.7), and all remaining bits of EF <sub>ACC</sub> and EF <sub>UAC_AIC</sub> are set to 0. |                                     |

**Table 6.4.1-18: USIM Configuration 18**

| <b>USIM field</b>       | <b>Priority</b> | <b>Value</b>   | <b>Access Technology Identifier</b> |
|-------------------------|-----------------|--|-------------------------------------|
| EF <sub>IMSI</sub>      |                 | The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.   |                                     |
| EF <sub>PLMNwAcT</sub>  | 1               | PLMN2  | NG-RAN                              |
| EF <sub>HPLMNwAcT</sub> | 1               | PLMN1  | NG-RAN                              |
| EF <sub>UST</sub>       |                 | Service n°126 (for UAC Access Identities Configuration) defined in TS 31.102 clause 4.2.8 is declared "available"                        |                                     |
| EF <sub>UAC_AIC</sub>   |                 | Bit b1 in byte 1 defined in TS 31.102 clause 4.4.11.7 is set to 1 and bit b2 in byte 1 is set to 0.                                      |                                     |
| EF <sub>ACC</sub>       |                 | For Bit b1 in byte 2 defined in TS 31.102 clause 4.2.15, only single bit set to 1. All remaining bits of byte 1 and byte 2 are set to 0. |                                     |

**Table 6.4.1-19: USIM Configuration 19**

| <b>USIM field</b>       | <b>Priority</b> | <b>Value</b>   | <b>Access Technology Identifier</b> |
|-------------------------|-----------------|--|-------------------------------------|
| EF <sub>IMSI</sub>      |                 | The HPLMN (MCC+MNC) of the IMSI is set to PLMN1.   |                                     |
| EF <sub>PLMNwAcT</sub>  | 1               | PLMN2  | NG-RAN                              |
| EF <sub>HPLMNwAcT</sub> | 1               | PLMN1  | NG-RAN                              |
| EF <sub>UST</sub>       |                 | Service n°126 (for UAC Access Identities Configuration) defined in TS 31.102 clause 4.2.8 is declared "available"                        |                                     |
| EF <sub>UAC_AIC</sub>   |                 | Bit b2 in byte 1 defined in TS 31.102 clause 4.4.11.7 is set to 1 and bit b1 in byte 1 is set to 0.                                      |                                     |
| EF <sub>ACC</sub>       |                 | For Bit b2 in byte 2 defined in TS 31.102 clause 4.2.15, only single bit set to 1. All remaining bits of byte 1 and byte 2 are set to 0. |                                     |

**Table 6.4.1-20: USIM Configuration 20**

| <b>USIM field</b> | <b>Priority</b> | <b>Value</b> | <b>Access Technology Identifier</b> |
|-------------------|-----------------|--------------|-------------------------------------|
| EF <sub>ECC</sub> |                 | 144, 117     |                                     |

**Table 6.4.1-21: USIM configuration 21**

| <b>USIM field</b>       | <b>Priority</b> | <b>Value</b>  | <b>Access Technology Identifier</b> |
|-------------------------|-----------------|---|-------------------------------------|
| EF <sub>OPLMNwACT</sub> | 1<br>2<br>3     | PLMN14<br>PLMN13<br>PLMN2<br>Remaining defined entries use default values | NG-RAN<br>NG-RAN<br>NG-RAN          |
| EF <sub>UST</sub>       |                 | Service n°127 is not "available"  |                                     |
| EF <sub>HPPLMN</sub>    |                 | 1(=6 min)   |                                     |

**Table 6.4.1-22: USIM Configuration 22**

| <b>USIM field</b> | <b>Priority</b> | <b>Value</b>  | <b>Access Technology Identifier</b> |
|-------------------|-----------------|---|-------------------------------------|
| EF <sub>UST</sub> |                 | Service n°19 and n°51 defined in TS 31.102 clause 4.2.8 is declared "service not available" |                                     |

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## 7 Test environments for RRM tests

### 7.0 General

#### 7.0.1 Single PDU configuration for RRM testing

For RRM test case execution on 5G SA UEs defined in TS 38.533 [18] 7.1 Requirements, IMS shall not be considered and UE's shall be able use RRC (IDLE, CONNECTED) preambles defined in TS 38.508-1 Section 4.5. Before entering RRC\_CONNECTED or RRC\_IDLE state during initial conditions or test procedure, it is recommended that UE is pre-configured with only 1 PDU (non-IMS) along with appropriate settings to ensure UE operates and stays on NR cell.

For EN-DC settings the corresponding requirement holds that IMS shall not be considered and it is recommended that UE is pre-configured with only 1PDU/1 PDN.

### 7.1 Test equipment requirements

#### 7.1.1 Void

#### 7.1.2 Void

#### 7.1.3 Requirements for OTA test method

##### 7.1.3.1 General

Editor's Note:

- The UE pre-configuration mentioned below to disable UL Tx diversity schemes shall be voided once a test methodology solution to minimize spectral flatness artefacts between TE and UE over all test points is defined.

For conformance testing using the OTA test environment, the UE under test shall be pre-configured with UL Tx diversity schemes disabled to account for single polarization System Simulator (SS) in the test environment. The UE under test may transmit with dual polarization.

##### 7.1.3.2 RRM baseline setup

The RRM baseline setup shall fulfil the capabilities detailed in this section.

The following permitted test setups are considered for OTA RRM testing:

- DFF test setup as described in Clause B.2.2.
- Simplified DFF test setup as described in Clause B.2.3.
- IFF test setup as described in Clause B.2.4.
- Enhanced IFF test setup based in the IFF test setup described in Clause B.2.4, with the enhancements described in this clause.
- IFF+DFF Hybrid teset setup as described in Clause B.2.2 for DFF TRxP(s) and B2.4 for IFF TRxP(s), with the enhancements described in this clause.

###### 7.1.3.2.1 General description

TRxPs and Cells:

- Up to 2 NR transmission reception points TRxPs are emulated.

## Support of interworking scenarios

- For test scenarios involving both, LTE and NR FR2 carriers, the test setup shall be capable to provide LTE link to the DUT. The emulated LTE cell provides a stable LTE signal without precise propagation modelling or path loss control between it and the DUT. No performance verification for and relative to LTE carriers is supported.
- For test scenarios involving both, NR FR1 and NR FR2 carriers, the test setup shall be capable to provide NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control. No performance verification for and relative to NR FR1 carriers is supported.

## Antennas, polarization, simultaneously active AoAs:

- N dual-polarized antennas transmitting the signals from the emulated gNB sources to the DUT.
- The antennas transmit into the test zone in such a way that signal polarization does not prevent the DUT receiving a consistent, predictable power level.
- $N \geq N_{MAX\_AoAs}$ , where  $N_{MAX\_AoAs}$  is the maximum number of simultaneously active (emulating signal) angles of arrival AoAs. The  $N_{MAX\_AoAs}$  for the different permitted test methods is:
  - For UE RRM baseline measurement setup based on DFF, the supported  $N_{MAX\_AoAs} = 2$ .
  - For UE RRM baseline measurement setup based on simplified DFF, the supported  $N_{MAX\_AoAs} = 1$ .
  - For UE RRM baseline measurement setup based on IFF, the supported  $N_{MAX\_AoAs} = 1$ .
  - For UE RRM baseline measurement setup based on enhanced IFF, the supported  $N_{MAX\_AoAs} = 2$ .
  - For UE RRM baseline measurement setup based on IFF+DFF, the supported  $N_{MAX\_AoAs} = 2$ .

## Angular Relationship:

- A positioning system such that an angular relationship with two axes of freedom is provided between the DUT and the test system antennas (or the setup should provide equivalent functionality).
- For  $N_{MAX\_AoAs} = 2$  the setup shall enable following relative angular relationships between the  $N_{MAX\_AoAs}$  simultaneously active AoAs:  $30^\circ, 60^\circ, 90^\circ, 120^\circ$  and  $150^\circ$ .
- For single active probe scenarios, in case that step change of AoA is required, the setup shall enable following relative angular change between initial and target AoA:  $30^\circ, 60^\circ, 90^\circ, 120^\circ$  and  $150^\circ$ .

Wanted and noise (AWGN) signals can be transmitted from one or both active probes. Test description will define the exact signal/noise/SNR/SINR level per TRxP at the reference point.

## Multiple DL transmission antenna ports:

- In case of multiple DL transmission antenna ports are required for RRM testing, the different antenna ports are mapped to different polarizations.

## Measurement Uncertainty:

- The threshold MU for the equivalence framework for RRM will be based on direct far field (DFF) test method for  $D \leq 5$  cm and on indirect far field (IFF) test method for  $D > 5$  cm. If the MTSU for the IFF test method for  $D \leq 5$  cm is finalized before DFF, the IFF MTSU shall be used as provisional threshold MU until DFF is completed.

### 7.1.3.2.2 Applicability criteria

The applicability criteria for the RRM measurement setup based on DFF is described in B.2.2.1.

The applicability criteria for the RRM measurement setup based on simplified DFF is described in B.2.3.1.

The applicability criteria for the RRM measurement setup based on IFF is described in B.2.4.1.

The applicability criteria for the RRM measurement setup based on enhanced IFF is described in B.2.4.1:

The applicability criteria for the RRM measurement setup based on IFF+DFF follows DFF as described in B.2.2.1:

### 7.1.3.2.3 Measurement distance and quiet zone

For RRM baseline measurement setup based on DFF:

- The measurement distance defined for the DFF UE RF test method described in B.2.2.4 applies.
- A DFF measurement setup has the centre of the Quiet Zone (QZ) located at the centre of the rotational axes (of DUT and measurement antenna). For the RRM measurement baseline setup based on DFF, the vertices of the N probes have to be aligned to the resulting centre of the QZ. The centre of the QZ is taken as the reference point for MU definition for each probe. The same QZ size as for DFF UE RF test method described in B.2.2.2 applies.

For RRM baseline measurement setup based on simplified DFF:

- The measurement distance defined for the simplified DFF UE RF test method described in B.2.3.4 applies.
- The same QZ size and definition as for simplified DFF UE RF test method described in B.2.3.2 applies.

For RRM baseline measurement setup based on IFF:

- The measurement distance defined for the IFF UE RF test method described in B.2.4.4 applies.
- The Quiet Zone definition for the IFF UE RF test method described in B.2.4.2 applies.

For RRM baseline measurement setup based on enhanced IFF:

- The measurement distance defined for the IFF UE RF test method described in B.2.4.4 applies.
- An IFF measurement setup has the centre of the Quiet Zone (QZ) located at the centre of the rotational axes (of DUT). For the RRM measurement baseline setup based on IFF, the reflectors have to be aligned to transmit a plane wave to the resulting centre of the QZ. The centre of the QZ is taken as the reference point for MU definition for each reflector. The QZ is a sphere of radius R. The size of the QZ defined in B.2.4.2 applies.

For RRM baseline measurement setup based on IFF+DFF:

- For IFF TRxPs, the measurement distance defined for the IFF UE RF test method described in B.2.4.4 applies.
- For DFF TRxPs, the measurement distance defined for the DFF UE RF test method described in B.2.2.4 applies.
- An IFF+DFF measurement setup has the centre of the Quiet Zone (QZ) located at the centre of the rotational axes (of DUT). For the RRM measurement baseline setup based on IFF+DFF, IFF reflectors have to be aligned to transmit a plane wave to the resulting centre of the QZ, and the vertices of the DFF probes have to be aligned to the resulting centre of the QZ. The centre of the QZ is taken as the reference point for MU definition for each reflector or probe. The QZ is a sphere of radius R. The size of the QZ defined in B.2.4.2 applies for IFF TRxPs and B.2.2.2 for DFF TRxPs.

### 7.1.3.2.4 Quality of the quiet zone

For RRM, the quality of the quiet zone validation defined in Annex O of TS 38.521-2 [15] needs to assess only the single-directional EIRP and EIS metrics. For measurement setups with multiple probes, the QoQZ procedure needs to be performed with all probes present and in the conditions used for RRM testing.

The quality of the quiet zone for the RRM measurement setup based on DFF is described in B.2.2.3. The QoQZ validation needs to be performed only with the reference probe P0.

The quality of the quiet zone for the RRM measurement setup based on simplified DFF is described in B.2.3.3.

The quality of the quiet zone for the RRM measurement setup based on IFF is described in B.2.4.3.

The quality of the quiet zone for the RRM measurement setup based on enhanced IFF is described in B.2.4.3. The QoQZ validation needs to be performed only with the reference reflector, P0, if same sized IFF reflectors are used..

The quality of the quiet zone for the RRM measurement setup based on IFF+DFF is described in B.2.4.3 for IFF probes and in B.2.2.3 for DFF probes. The QoQZ validation needs to be performed only with the one probe among all DFF probes and one probe among all IFF probes.

## 7.2 Reference test conditions

### 7.2.1 Signal levels

7.2.1.1 Void

7.2.1.2 Void

### 7.2.2 Physical layer parameters

#### 7.2.2.1 Downlink physical layer parameters

As defined in clause 4.3.6 with the following exceptions:

**Table 7.2.2.1-1: Physical layer parameters for DCI format 1\_1**

| Derivation Path: Table 4.3.6.1.2.2-1 |   |                 |
|--------------------------------------|---|-----------------|
| Parameter                            | Value   | Value in binary |
| PUCCH resource indicator             | <i>PUCCH-ResourceId[1] = 0 in pucch-ResourceSetID[1] as defined in Table 4.6.3-112 (Mapping as per Table 9.2.3-2 in TS 38.213 [22])</i> | “000”           |

### 7.2.3 Default test frequencies

#### 7.2.3.1 Default test frequencies FR1 NR operating bands

For FR1 NR operating bands the test frequencies for RRM testing are specified in clause 4.3.1.1.

#### 7.2.3.2 Default test frequencies FR2 operating bands

## 7.2.3.2.1

Reference test frequencies for NR operating band n257

**Table 7.2.3.2.1-1: Test frequencies for NR operating band n257 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)**

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range             |     | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  |
|---|--------------------------|-------------------|-----|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|
| 100   | 66                       | Downlink & Uplink | Mid | 28015.68             | 2079427                | 27968.16      | 2078635                           | 0                               | 120                | 22472 |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks 60 kHz subcarrier spacing for FR2.<br>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the low parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. |                          |                   |     |                      |                        |               |                                   |                                 |                    |       |

**Table 7.2.3.2.1-2: Test frequencies for NR operating band n257 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, SSB SCS=240kHz, kSSB=0 and Offset(RBs)=0)**

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range             |     | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  |
|--|--------------------------|-------------------|-----|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|
| 100  | 66                       | Downlink & Uplink | Mid | 28001.28             | 2079187                | 27953.76      | 2078395                           | 0                               | 240                | 22472 |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks 60 kHz subcarrier spacing for FR2.<br>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the low parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. |                          |                   |     |                      |                        |               |                                   |                                 |                    |       |

### 7.2.3.2.2 Reference test frequencies for NR operating band n258

**Table 7.2.3.2.2-1: Test frequencies for NR operating band n258 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)**

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range             |     | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  |
|--|--------------------------|-------------------|-----|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|
| 100  | 66                       | Downlink & Uplink | Mid | 25890.24             | 2044003                | 25842.72      | 2043211                           | 0                               | 120                | 22349 |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource block 60 kHz subcarrier spacing for FR2.<br>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the low parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. |                          |                   |     |                      |                        |               |                                   |                                 |                    |       |

**Table 7.2.3.2.2-2: Test frequencies for NR operating band n258 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, SSB SCS=240kHz, kSSB=0 and Offset(RBs)=0)**

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range             |     | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  |
|---|--------------------------|-------------------|-----|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|
| 100   | 66                       | Downlink & Uplink | Mid | 25893.12             | 2044051                | 25845.6       | 2043259                           | 0                               | 240                | 22350 |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource block 60 kHz subcarrier spacing for FR2.<br>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the low parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. |                          |                   |     |                      |                        |               |                                   |                                 |                    |       |

### 7.2.3.2.3 Reference test frequencies for NR operating band n259

**Table 7.2.3.2.3-1: Test frequencies for NR operating band n259 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)**

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range             |     | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  |
|--|--------------------------|-------------------|-----|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|
| 100  | 66                       | Downlink & Uplink | Mid | 41511.36             | 2304355                | 41463.84      | 2303563                           | 0                               | 120                | 23253 |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource block 60 kHz subcarrier spacing for FR2.<br>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the low parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. |                          |                   |     |                      |                        |               |                                   |                                 |                    |       |

**Table 7.2.3.2.3-2: Test frequencies for NR operating band n259 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, SSB SCS=240kHz, kSSB=0 and Offset(RBs)=0)**

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range             |     | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  |
|---|--------------------------|-------------------|-----|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|
| 100   | 66                       | Downlink & Uplink | Mid | 41514.24             | 2304403                | 41466.72      | 2303611                           | 0                               | 240                | 23254 |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks 60 kHz subcarrier spacing for FR2.<br>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the low parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. |                          |                   |     |                      |                        |               |                                   |                                 |                    |       |

#### 7.2.3.2.4

Reference test frequencies for NR operating band n260

**Table 7.2.3.2.4-1: Test frequencies for NR operating band n260 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)**

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range             |     | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  |
|--|--------------------------|-------------------|-----|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|
| 100  | 66                       | Downlink & Uplink | Mid | 38504.64             | 2254243                | 38457.12      | 2253451                           | 0                               | 120                | 23079 |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks 60 kHz subcarrier spacing for FR2.<br>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the low parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. |                          |                   |     |                      |                        |               |                                   |                                 |                    |       |

**Table 7.2.3.2.4-2: Test frequencies for NR operating band n260 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, SSB SCS=240kHz, kSSB=0 and Offset(RBs)=0)**

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range             |     | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  |
|---|--------------------------|-------------------|-----|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|
| 100   | 66                       | Downlink & Uplink | Mid | 38507.52             | 2254291                | 38460         | 2253499                           | 0                               | 240                | 23080 |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value controlResourceSetZero (pdcch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks 60 kHz subcarrier spacing for FR2.<br>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the low parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. |                          |                   |     |                      |                        |               |                                   |                                 |                    |       |

7.2.3.2.5 Reference test frequencies for NR operating band n260

**Table 7.2.3.2.5-1: Test frequencies for NR operating band n261 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz SSB SCS=120kHz, kSSB=0 and Offset(RBs)=0)**

| CBW [MHz]   | carrier Bandwidth [PRBs] | Range             |     | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  |
|---|--------------------------|-------------------|-----|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|
| 100   | 66                       | Downlink & Uplink | Low | 27929.28             | 2077987                | 27881.76      | 2077195                           | 0                               | 120                | 22467 |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-8 in TS 38.213 [22]. The value controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks 60 kHz subcarrier spacing for FR2.<br>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the low parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. |                          |                   |     |                      |                        |               |                                   |                                 |                    |       |

**Table 7.2.3.2.5-2: Test frequencies for NR operating band n261 (SCS 120 kHz,  $\Delta F_{\text{Raster}}$  120 kHz, SSB SCS=240kHz, kSSB=0 and Offset(RBs)=0)**

| CBW [MHz]  | carrier Bandwidth [PRBs] | Range             |     | Carrier centre [MHz] | Carrier centre [ARFCN] | point A [MHz] | absolute FrequencyPoint A [ARFCN] | offsetTo Carrier [Carrier PRBs] | SS block SCS [kHz] | GSCN  |
|--|--------------------------|-------------------|-----|----------------------|------------------------|---------------|-----------------------------------|---------------------------------|--------------------|-------|
| 100  | 66                       | Downlink & Uplink | Mid | 27932.16             | 2078035                | 27884.64      | 2077243                           | 0                               | 240                | 22468 |
| Note 1: The CORESET#0 Index and the associated CORESET#0 Offset refers to Table 13-10 in TS 38.213 [22]. The value controlResourceSetZero (pdccch-ConfigSIB1) in the MIB. The offsetToPointA IE is expressed in units of resource blocks 60 kHz subcarrier spacing for FR2.<br>Note 2: The parameter Offset Carrier CORESET#0 specifies the offset from the lowest subcarrier of the carrier and the low parameter $\Delta F_{\text{OffsetCORESET-0-Carrier}}$ in Annex C expressed in number of common RBs. |                          |                   |     |                      |                        |               |                                   |                                 |                    |       |

## 7.3 Default NG-RAN RRC message and information elements contents for RRM

### 7.3.1 Radio resource control information elements for RRM

As defined in clause 4.6.3 with the following exceptions:

— **TDD-UL-DL-Config**

**Table 7.3.1-1: TDD-UL-DL-Config**

| Derivation Path: Table 4.6.3-192      |                   |         |                          |
|---------------------------------------|-------------------|---------|--------------------------|
| Information Element                   | Value/remark      | Comment | Condition                |
| TDD-UL-DL-ConfigCommon ::= SEQUENCE { |                   |         |                          |
| referenceSubcarrierSpacing            | SubcarrierSpacing |         |                          |
| pattern1 SEQUENCE {                   |                   |         |                          |
| dl-UL-TransmissionPeriodicity         | ms0p625           |         | TDDConf.3.1              |
| ms5                                   |                   |         |                          |
| nrofDownlinkSlots                     | 3                 |         | TDDConf.2.1, TDDConf.3.1 |
|                                       | 1                 |         | TDDConf.1.1              |
| nrofDownlinkSymbols                   | 10                |         | TDDConf.1.1, TDDConf.3.1 |
|                                       | 6                 |         | TDDConf.2.1              |
| nrofUplinkSlots                       | 2                 |         | TDDConf.1.1              |
|                                       | 1                 |         | TDDConf.3.1              |
|                                       | 4                 |         | TDDConf.2.1              |
| nrofUplinkSymbols                     | 4                 |         | TDDConf.2.1              |
|                                       | 2                 |         | TDDConf.1.1, TDDConf.3.1 |
| dl-UL-TransmissionPeriodicity-v1530   | Not present       |         |                          |
|                                       | ms4               |         | TDDConf.1.1, TDDConf.2.1 |
| }                                     |                   |         |                          |
| pattern2                              | Not present       |         |                          |
| pattern2 SEQUENCE {                   |                   |         | TDDConf.1.1, TDDConf.2.1 |
| dl-UL-TransmissionPeriodicity         | ms1               |         | TDDConf.1.1, TDDConf.2.1 |
| nrofDownlinkSlots                     | 1                 |         | TDDConf.1.1              |
|                                       | 2                 |         | TDDConf.2.1              |
| nrofDownlinkSymbols                   | 0                 |         | TDDConf.1.1, TDDConf.2.1 |
| nrofUplinkSlots                       | 0                 |         | TDDConf.1.1, TDDConf.2.1 |
| nrofUplinkSymbols                     | 0                 |         | TDDConf.1.1, TDDConf.2.1 |
| }                                     |                   |         |                          |
| }                                     |                   |         |                          |

| Condition   | Explanation                            |
|-------------|--|
| TDDConf.1.1 | TDD UL/DL configuration for SCS=15kHz  |
| TDDConf.2.1 | TDD UL/DL configuration for SCS=30kHz  |
| TDDConf.3.1 | TDD UL/DL configuration for SCS=120kHz |

— **FilterCoefficient**

**Table 7.3.1-2: FilterCoefficient**

| Derivation Path: Table 4.6.3-57 |              |                          |           |
|---------------------------------|--------------|--------------------------|-----------|
| Information Element             | Value/remark | Comment                  | Condition |
| FilterCoefficient               | fc0          | L3 filtering is not used |           |

— **SSB-MTC**

**Table 7.3.1-3: SSB-MTC**

| Derivation Path: Table 4.6.3-185                                |              |         |                              |
|---|--------------|---------|------------------------------|
| Information Element   | Value/remark | Comment | Condition                    |
| SSB-MTC ::= SEQUENCE {<br>periodicityAndOffset CHOICE {<br>sf20 | 0            |         | SMTc.1,<br>SMTc.2            |
| sf20  | 10           |         | SMTc.4,<br>SMTc.5            |
| sf160   | 0            |         | SMTc.3                       |
| }   |              |         |                              |
| duration  | sf1          |         | SMTc.1,<br>SMTc.3,<br>SMTc.4 |
|   | sf5          |         | SMTc.2,<br>SMTc.5            |
| }   |              |         |                              |

| Condition | Explanation                                   |
|-----------|---|
| SMTc.n    | SMTc pattern n as defined in 38.533 Annex A.4 |

— **SubcarrierSpacing**

**Table 7.3.1-3a: SubcarrierSpacing**

| Derivation Path: Table 4.6.3-188 |              |         |  |
|----------------------------------|--------------|---------|--|
| Information Element              | Value/remark | Comment | Condition  |
| ssbSubcarrierSpacing             | kHz15        |         | SSB.1 FR1,<br>SSB.3 FR1<br>or SSB.5<br>FR1               |
|                                  | kHz30        |         | SSB.2 FR1,<br>SSB.4 FR1<br>or SSB.6<br>FR1               |
|                                  | kHz120       |         | SSB.1 FR2,<br>SSB.3 FR2,<br>SSB.5 FR2<br>or SSB.7<br>FR2 |
|                                  | kHz240       |         | SSB.2 FR2,<br>SSB.4 FR2,<br>SSB.6 FR2<br>or SSB.8<br>FR2 |

| Condition | Explanation  |
|-----------|--|
| SSB.n FR1 | SSB RMC n for FR1 as defined in 38.533 Annex A.3.1 |
| SSB.n FR2 | SSB RMC n for FR2 as defined in 38.533 Annex A.3.2 |

– *ServingCellConfigCommon*

**Table 7.3.1-4: *ServingCellConfigCommon***

| Derivation Path: Table 4.6.3-168       |  |   |                   |
|--|--|---|-------------------|
| Information Element                    | Value/remark   | Comment   | Condition         |
| ServingCellConfigCommon ::= SEQUENCE { |  |   |                   |
| ssb-PositionsInBurst CHOICE {          |  |   |                   |
| shortBitmap                            | 1000<br>1100   | 1 SS Block in low FR1 frequencies<br>2 SS Blocks in low FR1 frequencies   | LOW_FREQ          |
| mediumBitmap                           | 10000000<br>11000000   | 1 SS Block in high FR1 frequencies<br>2 SS Blocks in high FR1 frequencies | HIGH_FREQ         |
| longBitmap                             | 10000000000000000000000000000000<br>00000000000000000000000000000000<br>00000000000000000000000000000000<br>0000<br>11000000000000000000000000000000<br>00000000000000000000000000000000<br>00000000000000000000000000000000<br>0000 | 1 SS Block in FR2<br>2 SS Blocks in FR2                                   | FR2               |
| }                                      |  |   |                   |
| ssb-periodicityServingCell             | ms20   |   |                   |
| ssbSubcarrierSpacing                   | kHz15  |   |                   |
|  | kHz30  |   | SCS30kHz          |
|  | kHz120   |   | FR2               |
| }                                      | kHz240   |   | FR2 AND SCS240kHz |

| Condition | Explanation  |
|-----------|--|
| LOW_FREQ  | Frequency <= 2.4 GHz for TDD or Frequency <= 3 GHz for FDD                             |
| HIGH_FREQ | FR1 and (Frequency > 2.4 GHz for TDD or Frequency > 3 GHz for FDD or CASE_C)           |
| 2SSB      | The SSB pattern as defined in TS 38.533 [18] Annex A.3.1 contain 2 SSBs within a burst |
| SCS30kHz  | The SSB pattern as defined in TS 38.533 [18] Annex A.3.1 is for 30 kHz SCS             |
| SCS240kHz | The SSB pattern as defined in TS 38.533 [18] Annex A.3.1 is for 240 kHz SCS            |

– *ServingCellConfigCommonSIB*

**Table 7.3.1-5: *ServingCellConfigCommonSIB-RRM***

| Derivation Path: Table 4.6.3-169          |                              |  |           |
|---|------------------------------|--|-----------|
| Information Element                       | Value/remark                 | Comment  | Condition |
| ServingCellConfigCommonSIB ::= SEQUENCE { |                              |  |           |
| ssb-PositionsInBurst SEQUENCE {           |                              |  |           |
| inOneGroup                                | '1000 0000'B<br>'1100 0000'B | When carrier frequency <= 3 GHz for FDD or <= 2.4 GHz for TDD, only the 4 leftmost bits are valid; | 2SSB      |
| groupPresence                             | Not present<br>'1000 0000'B  |  | FR2       |
| }   |                              |  |           |
| }   |                              |  |           |

| Condition | Explanation                        |
|-----------|------------------------------------|
| FR2       | Frequency range 2                  |
| 2SSB      | For configuration with 2 SS Blocks |

- CSI-RS for Tracking, CSI reporting and beam management

**Table 7.3.1-6: CSI-MeasConfig for RRM**

| Derivation Path: Table 4.6.3-38   |   |   |                   |
|---|---|---|-------------------|
| Information Element   | Value/remark  | Comment   | Condition         |
| CSI-MeasConfig ::= SEQUENCE {   |   |   |                   |
| nzp-CSI-RS-ResourceToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-Resources)) OF NZP-CSI-RS-Resource {   | n <sub>1</sub> +n <sub>2</sub> +n <sub>3</sub> +n <sub>4</sub> +n <sub>5</sub> entries                                  | n <sub>1</sub> =1 if CSI-RS for CSI is configured in test case, n <sub>1</sub> =0 otherwise;<br>n <sub>2</sub> =2 if CSI-RS for BM is configured in test case, n <sub>2</sub> =0 otherwise;<br>n <sub>3</sub> =4 if TRS is configured in test case, n <sub>3</sub> =0 otherwise;<br>n <sub>4</sub> =4 if second resource set of TRS is configured in test case, n <sub>4</sub> =0 otherwise;<br>n <sub>5</sub> =2 if aperiodic CSI-RS for BM is configured in test case, n <sub>5</sub> =0 otherwise; |                   |
| NZP-CSI-RS-Resource[k, k=1..n <sub>1</sub> ]  | NZP-CSI-RS-Resource for CSI   | entry 1   | n <sub>1</sub> >0 |
| NZP-CSI-RS-Resource[k, k=n <sub>1</sub> +1.. n <sub>1</sub> +n <sub>2</sub> ]   | NZP-CSI-RS-Resource for BM (k-n <sub>1</sub> -1)  | entry ...   | n <sub>2</sub> >0 |
| NZP-CSI-RS-Resource[k, k= n <sub>1</sub> +n <sub>2</sub> +1.. n <sub>1</sub> +n <sub>2</sub> +n <sub>3</sub> ]  | NZP-CSI-RS-Resource for TRS (k-n <sub>1</sub> -n <sub>2</sub> )   | entry ...   | n <sub>3</sub> >0 |
| NZP-CSI-RS-Resource[k, k= n <sub>1</sub> +n <sub>2</sub> +n <sub>3</sub> +1.. n <sub>1</sub> +n <sub>2</sub> +n <sub>3</sub> +n <sub>4</sub> ]                                    | NZP-CSI-RS-Resource for TRS (k-n <sub>1</sub> -n <sub>2</sub> -n <sub>3</sub> ) with condition SECOND_SET               | entry ...   | n <sub>4</sub> >0 |
| NZP-CSI-RS-Resource[k, k= n <sub>1</sub> +n <sub>2</sub> +n <sub>3</sub> +n <sub>4</sub> +1.. n <sub>1</sub> +n <sub>2</sub> +n <sub>3</sub> +n <sub>4</sub> +n <sub>5</sub> ]    | NZP-CSI-RS-Resource for BM (k-n <sub>1</sub> -n <sub>2</sub> -n <sub>3</sub> -n <sub>4</sub> ) with condition APERIODIC | entry ...   | n <sub>5</sub> >0 |
| }   |   |   |                   |
| nzp-CSI-RS-ResourceSetToAddModList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSets)) OF NZP-CSI-RS-ResourceSet {  | m <sub>1</sub> +m <sub>2</sub> +m <sub>3</sub> +m <sub>4</sub> +m <sub>5</sub> entries                                  | m <sub>i</sub> =1 if n <sub>i</sub> >0, m <sub>i</sub> =0 otherwise   |                   |
| NZP-CSI-RS-ResourceSet[k, k=1..m <sub>1</sub> ]   | NZP-CSI-RS-ResourceSet for CSI  | entry 1   | n <sub>1</sub> >0 |
| NZP-CSI-RS-ResourceSet[k, k=m <sub>1</sub> +1.. m <sub>1</sub> +m <sub>2</sub> ]  | NZP-CSI-RS-ResourceSet for BM   | entry ...   | n <sub>2</sub> >0 |
| NZP-CSI-RS-ResourceSet[k, k= m <sub>1</sub> +m <sub>2</sub> +1.. m <sub>1</sub> +m <sub>2</sub> +m <sub>3</sub> ]   | NZP-CSI-RS-ResourceSet for TRS  | entry ...   | n <sub>3</sub> >0 |
| NZP-CSI-RS-ResourceSet[k, k= m <sub>1</sub> +m <sub>2</sub> +m <sub>3</sub> +1.. m <sub>1</sub> +m <sub>2</sub> +m <sub>3</sub> +m <sub>4</sub> ]                                 | NZP-CSI-RS-ResourceSet for TRS with condition SECOND_SET  | entry ...   | n <sub>4</sub> >0 |
| NZP-CSI-RS-ResourceSet[k, k= m <sub>1</sub> +m <sub>2</sub> +m <sub>3</sub> +m <sub>4</sub> +1.. m <sub>1</sub> +m <sub>2</sub> +m <sub>3</sub> +m <sub>4</sub> +m <sub>5</sub> ] | NZP-CSI-RS-ResourceSet for BM with condition APERIODIC  | entry ...   | n <sub>5</sub> >0 |
| }   |   |   |                   |
| csi-IM-ResourceToAddModList   | Not present   |   |                   |
| csi-IM-ResourceSetToAddModList  | Not present   |   |                   |
| csi-SSB-ResourceSetToAddModList   | Not present   |   |                   |

|   |  |           |                        |
|---|--|-----------|------------------------|
| csi-ResourceConfigToAddModList SEQUENCE<br>(SIZE (1..maxNrofCSI-ResourceConfigurations)) OF<br>CSI-ResourceConfig { | $m_1+m_2+m_3+m_5$ entries                                  |           |                        |
| CSI-ResourceConfig[k, k=1.. $m_1$ ]   | CSI-ResourceConfig for<br>CSI                              | entry 1   | $n_1>0$                |
| CSI-ResourceConfig[k, k= $m_1+1.. m_1+m_2$ ]  | CSI-ResourceConfig for<br>BM                               | entry ... | $n_2>0$                |
| CSI-ResourceConfig[k, k= $m_1+m_2+1.. m_1+m_2+m_3$ ]  | CSI-ResourceConfig for<br>TRS                              | entry ... | $n_3>0$ and<br>$n_4=0$ |
|   | CSI-ResourceConfig for<br>TRS with condition<br>SECOND_SET |           | $n_4>0$                |
| CSI-ResourceConfig[k, k= $m_1+m_2+m_3+1.. m_1+m_2+m_3+m_5$ ]  | CSI-ResourceConfig for<br>BM with condition<br>APERIODIC   | entry ... | $n_5>0$                |
| }   |  |           |                        |
| csi-ReportConfigToAddModList SEQUENCE (SIZE<br>(1..maxNrofCSI-ReportConfigurations)) OF CSI-<br>ReportConfig {      | $m_1+m_2+m_5$ entries                                      |           |                        |
| CSI-ReportConfig[k, k=1.. $m_1$ ]   | CSI-ReportConfig for CSI                                   | entry 1   | $n_1>0$                |
| CSI-ReportConfig[k, k= $m_1+1.. m_1+m_2$ ]  | CSI-ResourceConfig for<br>BM                               | entry ... | $n_2>0$                |
| CSI-ReportConfig[k, k= $m_1+m_2+1.. m_1+m_2+m_5$ ]  | CSI-ResourceConfig for<br>BM with condition<br>APERIODIC   | entry ... | $n_5>0$                |
| }   |  |           |                        |
| reportTriggerSize   | Not present  |           |                        |
|   | 1  |           | $n_5>0$                |
| aperiodicTriggerStateList CHOICE {  | Not present  |           |                        |
| setup   | CSI-<br>AperiodicTriggerStateList                          |           | $n_5>0$                |
| }   |  |           |                        |
| }   |  |           |                        |

Table 7.3.1-7: NZP-CSI-RS-Resource for TRS(Id)

| Derivation Path: Table 4.6.3-45    |  |                                    |            |
|------------------------------------|--|------------------------------------|------------|
| Information Element                | Value/remark   | Comment                            | Condition  |
| NZP-CSI-RS-Resource ::= SEQUENCE { |  |                                    |            |
| NZP-CSI-RS-ResourceId              | NZP-CSI-RS-ResourceId<br>for TRS(Id)                                   |                                    |            |
|                                    | NZP-CSI-RS-ResourceId<br>for TRS(Id) with<br>Condition SECOND_SET      |                                    | SECOND_SET |
| CSI-RS-ResourceMapping             | CSI-RS-<br>ResourceMapping for<br>TRS(Id)                              |                                    |            |
|                                    | CSI-RS-<br>ResourceMapping for<br>TRS(Id) with condition<br>SECOND_SET |                                    | SECOND_SET |
| powerControlOffsetSS               | db-3   |                                    |            |
| scramblingID                       | PhysCellId   | PCI of the cell<br>sending the TRS |            |
| periodicityAndOffset               | CSI-<br>ResourcePeriodicityAnd<br>Offset for TRS(Id)                   |                                    |            |
| qcl-InfoPeriodicCSI-RS             | TCI-StatId-RRM(2)  |                                    |            |
| }                                  |  |                                    |            |

| Condition  | Explanation  |
|------------|--|
| SECOND_SET | For resource belong to the second resource set for TRS, only applies to FR2 test |

**Table 7.3.1-7A: NZP-CSI-RS-Resource for CSI**

| Derivation Path: Table 4.6.3-45    |   |         |           |
|------------------------------------|---|---------|-----------|
| Information Element                | Value/remark                              | Comment | Condition |
| NZP-CSI-RS-Resource ::= SEQUENCE { |   |         |           |
| nzp-CSI-RS-Resourceld              | NZP-CSI-RS-Resourceld for CSI             |         |           |
| resourceMapping                    | CSI-RS-ResourceMapping for CSI            |         |           |
| powerControlOffset                 | 0   |         |           |
| powerControlOffsetSS               | db0                                       |         |           |
| scramblingID                       | 0   |         |           |
| periodicityAndOffset               | CSI-ResourcePeriodicityAnd Offset for CSI |         |           |
| qcl-InfoPeriodicCSI-RS             | TCI-Stateld-RRM(0)                        |         |           |
| }                                  |   |         |           |

**Table 7.3.1-7B: NZP-CSI-RS-Resource for BM(Id)**

| Derivation Path: Table 4.6.3-45    |  |         |           |
|------------------------------------|--|---------|-----------|
| Information Element                | Value/remark   | Comment | Condition |
| NZP-CSI-RS-Resource ::= SEQUENCE { |  |         |           |
| nzp-CSI-RS-Resourceld              | NZP-CSI-RS-Resourceld for BM (Id)                          |         |           |
| resourceMapping                    | NZP-CSI-RS-Resourceld for BM (Id) with condition APERIODIC |         | APERIODIC |
| powerControlOffset                 | CSI-RS-ResourceMapping for BM (Id)                         |         |           |
| powerControlOffsetSS               | 0  |         |           |
| scramblingID                       | db0  |         |           |
| periodicityAndOffset               | 0  |         |           |
| qcl-InfoPeriodicCSI-RS             | CSI-ResourcePeriodicityAnd Offset for BM                   |         |           |
|                                    | Not present  |         | APERIODIC |
|                                    | TCI-Stateld-RRM(Id)  |         |           |
|                                    | Not present  |         | APERIODIC |
| }                                  |  |         |           |

| Condition | Explanation                    |
|-----------|--------------------------------|
| APERIODIC | For aperiodic CSI-RS resources |

**Table 7.3.1-7C: NZP-CSI-RS-Resourceld for TRS(Id)**

| Derivation Path: Table 4.6.3-86 |              |   |            |
|---------------------------------|--------------|---|------------|
| Information Element             | Value/remark | Comment   | Condition  |
| NZP-CSI-RS-Resourceld           | n+Id-1       | n is the first NZP-CSI-RS-Resourceld allocated for TRS resource set.<br>Value of n is left to internal implementation<br>Id = 1,2,3,4 |            |
|                                 | n+Id+3       |   | SECOND_SET |

| Condition  | Explanation  |
|------------|--|
| SECOND_SET | For the second TRS resource set configured in test, only applies to FR2 test |

**Table 7.3.1-7D: NZP-CSI-RS-Resourceld for CSI**

| Derivation Path: Table 4.6.3-86 |              |  |           |
|---------------------------------|--------------|--|-----------|
| Information Element             | Value/remark | Comment  | Condition |
| NZP-CSI-RS-Resourceld           | n            | n is the NZP-CSI-RS-Resourceld allocated for CSI-RS for CSI report.<br><br>Value of n is left to internal implementation |           |

**Table 7.3.1-7E: NZP-CSI-RS-Resourceld for BM(Id)**

| Derivation Path: Table 4.6.3-86 |              |  |           |
|---------------------------------|--------------|--|-----------|
| Information Element             | Value/remark | Comment  | Condition |
| NZP-CSI-RS-Resourceld           | n+Id         | n is the first NZP-CSI-RS-Resourceld allocated for CSI-RS for BM.<br><br>Value of n is left to internal implementation<br><br>Id = 0,1           |           |
|                                 | m+Id         | m is the first NZP-CSI-RS-Resourceld allocated for aperiodic CSI-RS for BM.<br><br>Value of m is left to internal implementation<br><br>Id = 0,1 | APERIODIC |

| Condition | Explanation                    |
|-----------|--------------------------------|
| APERIODIC | For aperiodic CSI-RS resources |

**Table 7.3.1-8: CSI-RS-ResourceMapping for TRS(Id)**

| Derivation Path: Table 4.6.3-45 with condition TRS |                             |                                       |                                      |
|--|-----------------------------|---------------------------------------|--------------------------------------|
| Information Element                                | Value/remark                | Comment                               | Condition                            |
| CSI-RS-ResourceMapping ::= SEQUENCE {              |                             |                                       |                                      |
| frequencyDomainAllocation CHOICE {                 |                             |                                       |                                      |
| row1   | 0001                        | $k_0=0$ for CSI-RS resource 1,2,3,4   |                                      |
| }  |                             |                                       |                                      |
| firstOFDMSymbolInTimeDomain                        | 5                           | $l_0 = 5$ for CSI-RS resource 1 and 3 | (Id = 1 or 3) AND FR1                |
|  | 9                           | $l_0 = 9$ for CSI-RS resource 2 and 4 | (Id = 2 or 4) AND FR1                |
|  | 1                           |                                       | (Id = 1 or 3) AND FR2                |
|  | 2                           |                                       | (Id = 1 or 3) AND FR2 AND SECOND_SET |
|  | 5                           |                                       | (Id = 2 or 4) AND FR2                |
|  | 6                           |                                       | (Id = 1 or 3) AND FR2 AND SECOND_SET |
| nrofPorts  | p1                          | 1 for CSI-RS resource 1,2,3,4         |                                      |
| freqBand   | CSI-FrequencyOccupation-RRM |                                       |                                      |
| }  |                             |                                       |                                      |

| Condition  | Explanation  |
|------------|--|
| SECOND_SET | For the second resource set for TRS configured in test, only applies to FR2 test |

**Table 7.3.1-8A: CSI-RS-ResourceMapping for CSI**

| Derivation Path: Table 4.6.3-45       |                             |         |           |
|---------------------------------------|-----------------------------|---------|-----------|
| Information Element                   | Value/remark                | Comment | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                             |         |           |
| frequencyDomainAllocation CHOICE {    |                             |         |           |
| other                                 | 000001                      |         |           |
| }                                     |                             |         |           |
| nrofPorts                             | p2                          |         | FR1       |
|                                       | p1                          |         | FR2       |
| firstOFDMSymbolInTimeDomain           | 5                           |         |           |
| freqBand                              | CSI-FrequencyOccupation-RRM |         |           |
| }                                     |                             |         |           |

**Table 7.3.1-8B: CSI-RS-ResourceMapping for BM (Id)**

| Derivation Path: Table 4.6.3-45       |                             |         |           |
|---------------------------------------|-----------------------------|---------|-----------|
| Information Element                   | Value/remark                | Comment | Condition |
| CSI-RS-ResourceMapping ::= SEQUENCE { |                             |         |           |
| frequencyDomainAllocation CHOICE {    |                             |         |           |
| row1                                  | 0001                        |         |           |
| }                                     |                             |         |           |
| nrofPorts                             | p1                          |         |           |
| firstOFDMSymbolInTimeDomain           | 6                           |         | Id = 0    |
|                                       | 10                          |         | Id = 1    |
| cdm-Type                              | noCDM                       |         |           |
| density CHOICE {                      |                             |         |           |
| three                                 | NULL                        |         |           |
| }                                     |                             |         |           |
| freqBand                              | CSI-FrequencyOccupation-RRM |         |           |
| }                                     |                             |         |           |

**Table 7.3.1-9: CSI-ResourcePeriodicityAndOffset for TRS(Id)**

| Derivation Path: Table 4.6.3-43               |              |   |                                |
|---|--------------|---|--------------------------------|
| Information Element                           | Value/remark | Comment   | Condition                      |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |              |   |                                |
| slots80                                       | 40           |   | (Id = 1 or 3)<br>AND<br>SCS120 |
|   | 41           |   | (Id = 2 or 4)<br>AND<br>SCS120 |
| slots40                                       | 20           | Periodicity 40<br>slots and offset 20<br>for CSI-RS<br>resource 1 and 2 | (Id = 1 or 3)<br>AND SCS30     |
|   | 21           | Periodicity 40<br>slots and offset 21<br>for CSI-RS<br>resource 3 and 4 | (Id = 2 or 3)<br>AND SCS30     |
| slots20                                       | 10           | Periodicity 20<br>slots and offset 10<br>for CSI-RS<br>resource 1 and 2 | (Id = 1 or 3)<br>AND SCS15     |
|   | 11           | Periodicity 20<br>slots and offset 11<br>for CSI-RS<br>resource 3 and 4 | (Id = 2 or 4)<br>AND SCS15     |
| }   |              |   |                                |

**Table 7.3.1-9A: CSI-ResourcePeriodicityAndOffset for CSI**

| Derivation Path: Table 4.6.3-43               |              |         |           |
|---|--------------|---------|-----------|
| Information Element                           | Value/remark | Comment | Condition |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |              |         |           |
| slots5  | 1            |         | SCS15     |
| slots10                                       | 2            |         | SCS30     |
| slots40                                       | 8            |         | SCS120    |
| }   |              |         |           |

**Table 7.3.1-9B: CSI-ResourcePeriodicityAndOffset for BM**

| Derivation Path: Table 4.6.3-43               |              |         |           |
|---|--------------|---------|-----------|
| Information Element                           | Value/remark | Comment | Condition |
| CSI-ResourcePeriodicityAndOffset ::= CHOICE { |              |         |           |
| slots10                                       | 1            |         | SCS15     |
| slots20                                       | 2            |         | SCS30     |
| slots80                                       | 8            |         | SCS120    |
| }   |              |         |           |

**Table 7.3.1-10: CSI-FrequencyOccupation-RRM**

| Derivation Path: Table 4.6.3-33        |  |   |           |
|--|--|---|-----------|
| Information Element                    | Value/remark   | Comment   | Condition |
| CSI-FrequencyOccupation ::= SEQUENCE { |  |   |           |
| startingRB                             | $4 * \text{floor}(n/4)$                                    | n is the start RB of active BWP<br><br>floor()<br>means rounding down to the nearest integer<br><br>startingRB can only be multiple of 4  |           |
| nrofRBs                                | $\max(4 * \text{ceil}(n/4 - \text{floor}(n/4) + m/4), 24)$ | m is the bandwidth of active BWP<br><br>ceil()<br>means rounding up to the nearest integer<br><br>Bandwidth of CSI-RS used in RRM test is required to be same as active BWP according to 38.133.<br><br>nrofRBs shall be no less than 24 and shall be multiple of 4 |           |
| }                                      |  |   |           |

**Table 7.3.1-11: NZP-CSI-RS-ResourceSet for TRS**

| Derivation Path: Table 4.6.3-87 with Condition TRS   |  |         |            |
|--|--|---------|------------|
| Information Element  | Value/remark   | Comment | Condition  |
| NZP-CSI-RS-Resource ::= SEQUENCE {   |  |         |            |
| nzp_CSI_ResourceSetId  | NZP-CSI-RS-ResourceSetId-TRS                               |         |            |
|  | NZP-CSI-RS-ResourceSetId-TRS with condition SECOND_SET     |         | SECOND_SET |
| nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-Resourceld { | 4 entries  |         |            |
| NZP-CSI-RS-Resourceld[1]   | NZP-CSI-RS-Resourceld for TRS(1)                           | entry 1 |            |
| NZP-CSI-RS-Resourceld[2]   | NZP-CSI-RS-Resourceld for TRS(2)                           | entry 2 |            |
| NZP-CSI-RS-Resourceld[3]   | NZP-CSI-RS-Resourceld for TRS(3)                           | entry 3 |            |
| NZP-CSI-RS-Resourceld[4]   | NZP-CSI-RS-Resourceld for TRS(4)                           | entry 4 |            |
| }  |  |         |            |
| nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-Resourceld { | 4 entries  |         | SECOND_SET |
| NZP-CSI-RS-Resourceld[1]   | NZP-CSI-RS-Resourceld for TRS(1) with condition SECOND_SET | entry 1 |            |
| NZP-CSI-RS-Resourceld[2]   | NZP-CSI-RS-Resourceld for TRS(2) with condition SECOND_SET | entry 2 |            |
| NZP-CSI-RS-Resourceld[3]   | NZP-CSI-RS-Resourceld for TRS(3) with condition SECOND_SET | entry 3 |            |
| NZP-CSI-RS-Resourceld[4]   | NZP-CSI-RS-Resourceld for TRS(4) with condition SECOND_SET | entry 4 |            |
| }  |  |         |            |
| }  |  |         |            |

| Condition  | Explanation  |
|------------|--|
| SECOND_SET | For the second TRS resource set configured in test, only applies to FR2 test |

**Table 7.3.1-11A: NZP-CSI-RS-ResourceSet for CSI**

| Derivation Path: Table 4.6.3-87  |                               |         |           |
|--|-------------------------------|---------|-----------|
| Information Element  | Value/remark                  | Comment | Condition |
| NZP-CSI-RS-Resource ::= SEQUENCE {   |                               |         |           |
| nzp_CSI_ResourceSetId  | NZP-CSI-RS-ResourceSetId-CSI  |         |           |
| nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-Resourceld { | 1 entry                       |         |           |
| NZP-CSI-RS-Resourceld[1]   | NZP-CSI-RS-Resourceld for CSI | entry 1 |           |
| }  |                               |         |           |
| repetition   | Not present                   |         |           |
| }  |                               |         |           |

**Table 7.3.1-11B: NZP-CSI-RS-ResourceSet for BM**

| Derivation Path: Table 4.6.3-87  |   |         |           |
|--|---|---------|-----------|
| Information Element  | Value/remark  | Comment | Condition |
| NZP-CSI-RS-ResourceSet ::= SEQUENCE {  |   |         |           |
| nzp-CSI-ResourceSetId  | NZP-CSI-RS-ResourceSetId-BM                               |         |           |
|  | NZP-CSI-RS-ResourceSetId-BM with condition APERIODIC      |         | APERIODIC |
| nzp-CSI-RS-Resources SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourcesPerSet)) OF NZP-CSI-RS-Resourceld { | 2 entries   |         |           |
| NZP-CSI-RS-Resourceld[1]   | NZP-CSI-RS-Resourceld for BM (0)                          | entry 1 |           |
|  | NZP-CSI-RS-Resourceld for BM (0) with condition APERIODIC |         | APERIODIC |
| NZP-CSI-RS-Resourceld[2]   | NZP-CSI-RS-Resourceld for BM (1)                          | entry 2 |           |
|  | NZP-CSI-RS-Resourceld for BM (1) with condition APERIODIC |         | APERIODIC |
| }  |   |         |           |
| aperiodicTriggeringOffset  | 6   |         | APERIODIC |
| }  |   |         |           |

| Condition | Explanation                   |
|-----------|-------------------------------|
| APERIODIC | For apeiodic CSI-RS resources |

**Table 7.3.1-11C: NZP-CSI-RS-ResourceSetId-TRS**

| Derivation Path: Table 4.6.3-88 |              |  |            |
|---------------------------------|--------------|--|------------|
| Information Element             | Value/remark | Comment  | Condition  |
| NZP-CSI-RS-ResourceSetId        | n            | n is the first NZP-CSI-RS-ResourceSetId allocated for TRS resource set.<br><br>Value of n is left to internal implementation |            |
|                                 | n+1          |  | SECOND_SET |

| Condition  | Explanation  |
|------------|--|
| SECOND_SET | For the second TRS resource set configured in test, only applies to FR2 test |

**Table 7.3.1-11D: NZP-CSI-RS-ResourceSetId-CSI**

| Derivation Path: Table 4.6.3-88 |              |  |           |
|---------------------------------|--------------|--|-----------|
| Information Element             | Value/remark | Comment  | Condition |
| NZP-CSI-RS-ResourceSetId        | n            | n is the NZP-CSI-RS-ResourceSetId allocated for resource set of CSI-RS for CSI reporting.<br><br>Value of n is left to internal implementation |           |

**Table 7.3.1-11E: NZP-CSI-RS-ResourceSetId-BM**

| Derivation Path: Table 4.6.3-88 |              |   |           |
|---------------------------------|--------------|---|-----------|
| Information Element             | Value/remark | Comment   | Condition |
| NZP-CSI-RS-ResourceSetId        | n            | n is the NZP-CSI-RS-ResourceSetId allocated for resource set of CSI-RS for BM.<br><br>Value of n is left to internal implementation           |           |
|                                 | m            | m is the NZP-CSI-RS-ResourceSetId allocated for resource set of aperiodic CSI-RS for BM.<br><br>Value of m is left to internal implementation | APERIODIC |

| Condition | Explanation                    |
|-----------|--------------------------------|
| APERIODIC | For aperiodic CSI-RS resources |

**Table 7.3.1-12: CSI-ResourceConfig for TRS**

| Derivation Path: TS 38.508-1 Table 4.6.3-41   |  |         |            |
|---|--|---------|------------|
| Information Element   | Value/remark   | Comment | Condition  |
| CSI-ResourceConfig ::= SEQUENCE {   |  |         |            |
| csi-ResourceConfigId  | CSI-ResourceConfigId-TRS                               |         |            |
| csi-RS-ResourceSetList CHOICE {   |  |         |            |
| nzp-CSI-RS-SSB SEQUENCE {   |  |         |            |
| nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) | 1 entry  |         |            |
| OF NZP-CSI-RS-ResourceSetId {   |  |         |            |
| NZP-CSI-RS-ResourceSetId[1]   | NZP-CSI-RS-ResourceSetId-TRS                           |         |            |
| }   |  |         |            |
| nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) | 2 entries  |         | SECOND_SET |
| OF NZP-CSI-RS-ResourceSetId {   |  |         |            |
| NZP-CSI-RS-ResourceSetId[1]   | NZP-CSI-RS-ResourceSetId-TRS                           | entry 1 |            |
| NZP-CSI-RS-ResourceSetId[2]   | NZP-CSI-RS-ResourceSetId-TRS with condition SECOND_SET | entry 2 |            |
| }   |  |         |            |
| }   |  |         |            |
| bwp-Id  | BWP-Id of active BWP                                   |         |            |
| }   |  |         |            |
| }   |  |         |            |

| Condition  | Explanation  |
|------------|--|
| SECOND_SET | For the second resource set for TRS configured in test, only applies to FR2 test |

**Table 7.3.1-12A: CSI-ResourceConfig for CSI**

| Derivation Path: TS 38.508-1 Table 4.6.3-41   |                              |         |           |
|---|------------------------------|---------|-----------|
| Information Element   | Value/remark                 | Comment | Condition |
| CSI-ResourceConfig ::= SEQUENCE {   |                              |         |           |
| csi-ResourceConfigId  | CSI-ResourceConfigId-CSI     |         |           |
| csi-RS-ResourceSetList CHOICE {   |                              |         |           |
| nzp-CSI-RS-SSB SEQUENCE {   |                              |         |           |
| nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) | 1 entry                      |         |           |
| OF NZP-CSI-RS-ResourceSetId {   |                              |         |           |
| NZP-CSI-RS-ResourceSetId[1]   | NZP-CSI-RS-ResourceSetId-CSI | entry 1 |           |
| }   |                              |         |           |
| }   |                              |         |           |
| }   |                              |         |           |
| bwp-Id  | BWP-Id of active BWP         |         |           |
| }   |                              |         |           |
| }   |                              |         |           |

**Table 7.3.1-12B: CSI-ResourceConfig for BM**

| Derivation Path: Table 4.6.3-41   |  |         |           |
|---|--|---------|-----------|
| Information Element   | Value/remark   | Comment | Condition |
| CSI-ResourceConfig ::= SEQUENCE {   |  |         |           |
| csi-ResourceConfigId  | CSI-ResourceConfigId-BM                              |         |           |
|   | CSI-ResourceConfigId-BM with condition APERIODIC     |         | APERIODIC |
| csi-RS-ResourceSetList CHOICE {   |  |         |           |
| nzp-CSI-RS-SSB SEQUENCE {   |  |         |           |
| nzp-CSI-RS-ResourceSetList SEQUENCE (SIZE (1..maxNrofNZP-CSI-RS-ResourceSetsPerConfig)) OF NZP-CSI-RS-ResourceSetId { | 1 entry  |         |           |
| NZP-CSI-RS-ResourceSetId[1]   | NZP-CSI-RS-ResourceSetId-BM                          |         |           |
|   | NZP-CSI-RS-ResourceSetId-BM with condition APERIODIC |         | APERIODIC |
| }   |  |         |           |
| }   |  |         |           |
| }   |  |         |           |
| bwp-Id  | BWP-Id of active BWP                                 |         |           |
| resourceType  | aperiodic  |         | APERIODIC |
| }   |  |         |           |

| Condition | Explanation                    |
|-----------|--------------------------------|
| APERIODIC | For aperiodic CSI-RS resources |

**Table 7.3.1-12C: CSI-ResourceConfigId-TRS**

| Derivation Path: Table 4.6.3-42 |              |  |           |
|---------------------------------|--------------|--|-----------|
| Information Element             | Value/remark | Comment  | Condition |
| CSI-ResourceConfigId            | n            | n is the CSI-ResourceConfigId allocated for resource config of TRS.<br><br>Value of n is left to internal implementation |           |

**Table 7.3.1-12D: CSI-ResourceConfigId-CSI**

| Derivation Path: Table 4.6.3-42 |              |   |           |
|---------------------------------|--------------|---|-----------|
| Information Element             | Value/remark | Comment   | Condition |
| CSI-ResourceConfigId            | n            | n is the CSI-ResourceConfigId allocated for resource config of CSI-RS for CSI reporting.<br><br>Value of n is left to internal implementation |           |

**Table 7.3.1-12E: CSI-ResourceConfigId-BM**

| Derivation Path: Table 4.6.3-42 |              |  |           |
|---------------------------------|--------------|--|-----------|
| Information Element             | Value/remark | Comment  | Condition |
| CSI-ResourceConfigId            | n            | n is the CSI-ResourceConfigId allocated for resource config of CSI-RS for BM.<br><br>Value of n is left to internal implementation           |           |
|                                 | m            | m is the CSI-ResourceConfigId allocated for resource config of aperiodic CSI-RS for BM.<br><br>Value of m is left to internal implementation | APERIODIC |

| Condition | Explanation                    |
|-----------|--------------------------------|
| APERIODIC | For aperiodic CSI-RS resources |

**Table 7.3.1-12F: CSI-ReportConfig for CSI**

| Derivation Path: Table 4.6.3-39 |   |         |           |
|---------------------------------|---|---------|-----------|
| Information Element             | Value/remark                                    | Comment | Condition |
| CSI-ReportConfig ::= SEQUENCE { |   |         |           |
| reportConfigId                  | CSI-ReportConfigId-CSI                          |         |           |
| resourcesForChannelMeasurement  | CSI-ResourceConfigId-CSI                        |         |           |
| reportConfigType CHOICE {       |   |         |           |
| periodic                        | Set according to parameters given in test cases |         |           |
| }                               |   |         |           |
| }                               |   |         |           |

**Table 7.3.1-12G: CSI-ReportConfig for BM**

| Derivation Path: Table 4.6.3-39   |   |         |           |
|---|---|---------|-----------|
| Information Element   | Value/remark  | Comment | Condition |
| CSI-ReportConfig ::= SEQUENCE {<br>reportConfigId   | CSI-ReportConfigId-BM                                 |         |           |
|   | CSI-ReportConfigId-BM<br>with condition<br>APERIODIC  |         | APERIODIC |
| resourcesForChannelMeasurement  | CSI-ResourceConfigId-BM                               |         |           |
|   | CSI-ResourceConfigId-BM with condition<br>APERIODIC   |         | APERIODIC |
| reportConfigType CHOICE {<br>periodic   | Set according to<br>parameters given in test<br>cases |         |           |
| aperiodic SEQUENCE {<br>reportSlotOffsetList SEQUENCE (SIZE<br>(1..maxNrofUL-Allocations)) OF {<br>INTEGER[1]<br>}<br>} | 1 entry<br>26   |         | APERIODIC |
| reportQuantity CHOICE {<br>cri-RSRP   | NULL  |         |           |
| }   |   |         |           |
| }   |   |         |           |

| Condition | Explanation                    |
|-----------|--------------------------------|
| APERIODIC | For aperiodic CSI-RS resources |

**Table 7.3.1-12H: CSI-ReportConfigId-CSI**

| Derivation Path: Table 4.6.3-40 |              |   |           |
|---------------------------------|--------------|---|-----------|
| Information Element             | Value/remark | Comment   | Condition |
| CSI-ReportConfigId              | n            | n is the CSI-ReportConfigId allocated for report config of CSI-RS for CSI.<br><br>Value of n is left to internal implementation |           |

**Table 7.3.1-12I: CSI-ReportConfigId-BM**

| Derivation Path: Table 4.6.3-40 |              |  |           |
|---------------------------------|--------------|--|-----------|
| Information Element             | Value/remark | Comment  | Condition |
| CSI-ReportConfigId              | n            | n is the CSI-ReportConfigId allocated for report config of CSI-RS for BM.<br><br>Value of n is left to internal implementation           |           |
|                                 | m            | m is the CSI-ReportConfigId allocated for report config of aperiodic CSI-RS for BM.<br><br>Value of m is left to internal implementation | APERIODIC |

| Condition | Explanation                    |
|-----------|--------------------------------|
| APERIODIC | For aperiodic CSI-RS resources |

**Table 7.3.1-12J: CSI-AperiodicTriggerStateList**

| Derivation Path: Table 4.6.3-32  |  |                        |           |
|--|--|------------------------|-----------|
| Information Element  | Value/remark   | Comment                | Condition |
| CSI-AperiodicTriggerStateList ::= SEQUENCE (SIZE (1..maxNrOfCSI-AperiodicTriggers)) OF SEQUENCE {          | 1 entry  |                        |           |
| associatedReportConfigInfoList[1] SEQUENCE (SIZE(1..maxNrofReportConfigPerAperiodicTrigger)) OF SEQUENCE { | 1 entry  |                        |           |
| reportConfigId[1]  | CSI-ReportConfigId-BM with condition APERIODIC       |                        |           |
| resourcesForChannel[1] CHOICE {  |  |                        |           |
| nzp-CSI-RS SEQUENCE {  |  |                        |           |
| resourceSet  | NZP-CSI-RS-ResourceSetId-BM with condition APERIODIC |                        |           |
| qcl-info SEQUENCE (SIZE(1..maxNrofAP-CSI-RS-ResourcesPerSet)) OF {   | 2 entries  |                        |           |
| TCI-StatId[1]  | TCI-StatId-RRM(0)                                    | QCL Type C+D to SSB #0 |           |
| TCI-StatId[2]  | TCI-StatId-RRM(1)                                    | QCL Type C+D to SSB #1 |           |
| }  |  |                        |           |
| }  |  |                        |           |
| }  |  |                        |           |
| csi-IM-ResourcesForInterference[1]   | Not present  |                        |           |
| nzp-CSI-RS-ResourcesForInterference[1]   | Not present  |                        |           |
| }  |  |                        |           |
| }  |  |                        |           |

— *RACH-ConfigCommon*

**Table 7.3.1-13: RACH-ConfigCommon**

| Derivation Path: TS 38.508-1 Table 4.6.3-128          |  |  |           |
|---|--|--|-----------|
| Information Element                                   | Value/remark                                       | Comment  | Condition |
| RACH-ConfigCommon ::= SEQUENCE {                      |  |  |           |
| rach-ConfigGeneric                                    | RACH-ConfigGeneric                                 |  |           |
| totalNumberOfRA-Preambles                             | 48   |  |           |
| ssb-perRACH-OccasionAndCB-PreamblesPerSSB<br>CHOICE { |  |  |           |
| oneFourth   | n48  |  |           |
| }   |  |  |           |
| groupBconfigured                                      | Not present  |  |           |
| ra-ContentionResolutionTimer                          | sf48   |  |           |
| rsrp-ThresholdSSB                                     | 51   |  |           |
| rsrp-ThresholdSSB-SUL                                 | Not present  |  |           |
| prach-RootSequenceIndex CHOICE {                      |  |  |           |
| l139  | Set according to table<br>4.4.2-2 for the NR Cell. |  |           |
| }   |  |  |           |
| msg1-SubcarrierSpacing                                | SubcarrierSpacing                                  |  |           |
| restrictedSetConfig                                   | unrestrictedSet                                    |  |           |
| msg3-transformPrecoder                                | Not present  | transform<br>precoding is<br>disabled for Msg3<br>PUSCH<br>transmission and<br>any PUSCH<br>transmission<br>scheduled with<br>DCI format 0_0 |           |
| }   |  |  |           |

— *RACH-ConfigGeneric*

**Table 7.3.1-14: RACH-ConfigGeneric**

| Derivation Path: TS 38.508-1 Table 4.6.3-130 |              |         |           |
|--|--------------|---------|-----------|
| Information Element                          | Value/remark | Comment | Condition |
| RACH-ConfigGeneric ::= SEQUENCE {            |              |         |           |
| prach-ConfigurationIndex                     | 102          |         | FR1       |
|  | 190          |         | FR2       |
| msg1-FDM                                     | one          |         |           |
| msg1-FrequencyStart                          | 0            |         |           |
| zeroCorrelationZoneConfig                    | 11           |         |           |
| preambleReceivedTargetPower                  | -120         |         |           |
| preambleTransMax                             | n6           |         |           |
| powerRampingStep                             | dB2          |         |           |
| ra-ResponseWindow                            | s10          |         |           |
| }  |              |         |           |

- *PDCCH-Config*

**Table 7.3.1-15: PDCCH-ControlResourceSet**

| Derivation Path: Table 4.6.3-28   |  |  |                |
|---|--|--|----------------|
| Information Element   | Value/remark                           | Comment  | Condition      |
| ControlResourceSet ::= SEQUENCE {   |  |  |                |
| controlResourceSetId  | ControlResourceSetId                   |  |                |
| duration  | 2                                      |  | FR1            |
|   | 1                                      |  | FR2            |
| cce-REG-MappingType CHOICE {  |  |  |                |
| nonInterleaved  | Null                                   |  |                |
| interleaved ::= SEQUENCE {  |  |  | CCR            |
| reg-BundleSize  | n6                                     |  |                |
| interleaverSize   | n2                                     |  |                |
| shiftIndex  | 0                                      |  |                |
| }   |  |  |                |
| tci-StatesPDCCH-ToAddList SEQUENCE(SIZE(1..maxNrofTCI-StatesPDCCH)) OF TCI-StatId { | 1 entry                                |  |                |
| TCI-StatId[1]   | TCI-StatId-RRM(0)<br>TCI-StatId-RRM(2) | TCI State #0,<br>QCled to SSB<br>index #0<br>TCI State #2,<br>QCled to TRS<br>resource #4 in the<br>first resource set | Non-TRS<br>TRS |
| }   |  |  |                |
| }   |  |  |                |

| Condition | Explanation                                       |
|-----------|---|
| CCR       | When Control Channel RMC is configured            |
| TRS       | When at least one TRS resource set is configured. |
| Non-TRS   | When no TRS resource set is configured.           |

- *SchedulingRequestResourceConfig*

**Table 7.3.1-16: SchedulingRequestResourceConfig**

| Derivation Path: Table 4.6.3-157               |              |  |           |
|--|--------------|--|-----------|
| Information Element                            | Value/remark | Comment  | Condition |
| SchedulingRequestResourceConfig ::= SEQUENCE { |              |  |           |
| periodicityAndOffset CHOICE {                  |              |  |           |
| sl10   | 7            | With SCS = kHz15 results in repetition every 10 ms | SCS_15kHz |
| sl20   | 7            | With SCS = kHz30 results in repetition every 10 ms | SCS_30kHz |
| }  |              |  |           |
| }  |              |  |           |

| Condition | Explanation  |
|-----------|--|
| SCS_15kHz | SCS=15kHz for frequency of the cell according to clause 6.2.3 for signalling test cases and clause 4.3.1 otherwise |
| SCS_30kHz | SCS=30kHz for frequency of the cell according to clause 6.2.3 for signalling test cases and clause 4.3.1 otherwise |

- *SearchSpace*

**Table 7.3.1-17: SearchSpace**

| Derivation Path: Table 4.6.3-162            |              |         |           |
|---|--------------|---------|-----------|
| Information Element                         | Value/remark | Comment | Condition |
| SearchSpace ::= SEQUENCE {                  |              |         |           |
| monitoringSlotPeriodicityAndOffset CHOICE { |              |         |           |
| sl10  | 1            |         | SISS      |
| }   |              |         |           |
| }   |              |         |           |

| Condition | Explanation        |
|-----------|--------------------|
| SISS      | SearchSpace for SI |

- PDSCH-Config

**Table 7.3.1-18: PDSCH-Config**

| Derivation Path: Table 4.6.3-100   |  |  |                |
|--|--|--|----------------|
| Information Element  | Value/remark   | Comment  | Condition      |
| PDSCH-Config ::= SEQUENCE {  |  |  |                |
| tci-StatesToAddModList SEQUENCE(SIZE (1..<br>maxNrofTCI-States)) OF TCI-State {                      | 1+n <sub>1</sub> +n <sub>2</sub> +n <sub>3</sub> entries | n <sub>1</sub> = 1 if SSB configuration used in test case contains two SSBs in a burst, n <sub>1</sub> = 0 otherwise<br><br>n <sub>2</sub> = 1 if TRS is configured in test case, n <sub>1</sub> = 0 otherwise<br><br>n <sub>3</sub> = 1 if two resource sets of TRS are configured in test case, n <sub>3</sub> = 0 otherwise |                |
| TCI-State[1]   | TCI-State(0)   | entry 1<br>QCled to SSB index #0   |                |
| TCI-State[k, k=2..1+n <sub>1</sub> ]   | TCI-State(1)   | entry ...<br>QCled to SSB index #1   | SECOND_S<br>SB |
| TCI-State[k, k=2+n <sub>1</sub> ..1+n <sub>1</sub> +n <sub>2</sub> ]                                 | TCI-State(2)   | entry ...<br>QCled to TRS resource #4 in the first resource set  | TRS            |
| TCI-State[k, k=2+n <sub>1</sub> +n <sub>2</sub> ..1+n <sub>1</sub> +n <sub>2</sub> +n <sub>3</sub> ] | TCI-State(3)   | entry ...<br>QCled to TRS resource #4 in the second resource set   | SECOND_S<br>ET |
| }  |  |  |                |
| }  |  |  |                |

| Condition  | Explanation   |
|------------|---|
| SECOND_SSB | SSB configuration used in test case contain two SSBs in a burst             |
| TRS        | One resource set for TRS is configured in test case                         |
| SECOND_SET | Two resource sets for TRS are configured in test case, only applies to FR2. |

— *TCI-State*

**Table 7.3.1-19: TCI-State(*Id*)**

| Derivation Path: Table 4.6.3-190 |   |         |             |
|----------------------------------|---|---------|-------------|
| Information Element              | Value/remark  | Comment | Condition   |
| TCI-State ::= SEQUENCE {         |   |         |             |
| tci-Stateld                      | TCI-Stateld-RRM(Id)   |         |             |
| qcl-Type1 SEQUENCE {             |   |         |             |
| bwp-Id                           | BWP-Id of the active BWP                                    |         | Id = 2 or 3 |
| referenceSignal CHOICE {         |   |         |             |
| ssb                              | SSB-Index of SSB #0   |         | Id = 0      |
| ssb                              | SSB-Index of SSB #1   |         | Id = 1      |
| csi-rs                           | NZP-CSI-RS-Resourceld for TRS (4)                           |         | Id = 2      |
|                                  | NZP-CSI-RS-Resourceld for TRS (4) with condition SECOND SET |         | Id = 3      |
| }                                |   |         |             |
| qcl-Type                         | typeC   |         | Id = 0 or 1 |
|                                  | typeA   |         | Id = 2 or 3 |
| }                                |   |         |             |
| qcl-Type2                        | Not present   |         |             |
| qcl-Type2 SEQUENCE {             |   |         | FR2         |
| cell                             | Not present   |         |             |
| bwp-Id                           | Not present   |         | Id = 0 or 1 |
|                                  | BWP-Id of the active BWP                                    |         | Id = 2 or 3 |
| referenceSignal CHOICE {         |   |         |             |
| ssb                              | SSB-Index of SSB #0   |         | Id = 0      |
| ssb                              | SSB-Index of SSB #1   |         | Id = 1      |
| csi-rs                           | NZP-CSI-RS-Resourceld for TRS (4)                           |         | Id = 2      |
|                                  | NZP-CSI-RS-Resourceld for TRS (4) with condition SECOND SET |         | Id = 3      |
| }                                |   |         |             |
| qcl-Type                         | typeD   |         |             |
| }                                |   |         |             |
| }                                |   |         |             |

**Table 7.3.1-20: TCI-Stateld-RRM(*Id*)**

| Derivation Path: Table 4.6.3-191 |              |  |           |
|----------------------------------|--------------|--|-----------|
| Information Element              | Value/remark | Comment  | Condition |
| TCI-Stateld                      | n+Id         | n is the first TCI-Stateld allocated for TCI-State configured in RRM test. Value of n is left to internal implementation<br>Id = 0,1,2,3 |           |

— *PUSCH-Config*

**Table 7.3.1-21: PUSCH-Config-RRM**

| Derivation Path: Table 4.6.3-118        |   |         |           |
|---|---|---------|-----------|
| Information Element                     | Value/remark                              | Comment | Condition |
| PUSCH-Config ::= SEQUENCE {             |   |         |           |
| pusch-TimeDomainAllocationList CHOICE { |   |         | APERIODIC |
| setup                                   | PUSCH-TimeDomainResourceAllocationList-BM |         |           |
| }                                       |   |         |           |
| }                                       |   |         |           |
| }                                       |   |         |           |

| Condition | Explanation                    |
|-----------|--------------------------------|
| APERIODIC | For aperiodic CSI-RS resources |

— *PUSCH-TimeDomainResourceAllocationList*

**Table 7.3.1-22: PUSCH-TimeDomainResourceAllocationList-BM**

| Derivation Path: Table 4.6.3-122   |              |  |           |
|--|--------------|--|-----------|
| Information Element  | Value/remark | Comment  | Condition |
| PUSCH-TimeDomainResourceAllocationList ::= SEQUENCE (SIZE(1..maxNrofUL-Allocations)) OF SEQUENCE { | 1 entry      | same number of entries as reportSlotOffsetList in Table 7.3.1-12G  |           |
| k2[1]  | 26           | Same with k2 configured in reportSlotOffsetList in Table 7.3.1-12G |           |
| mappingType[1]   | typeA        |  |           |
| startSymbolAndLength[1]  | 27           | Start symbol(S)=0, Length(L)=14                                    |           |
| }  |              |  |           |

— *ServingCellConfig*

**Table 7.3.1-23: ServingCellConfig**

| Derivation Path: Table 4.6.3-167 |                |         |           |
|----------------------------------|----------------|---------|-----------|
| Information Element              | Value/remark   | Comment | Condition |
| ServingCellConfig ::= SEQUENCE { |                |         |           |
| csi-MeasConfig CHOICE {          |                |         |           |
| setup                            | csi-MeasConfig |         |           |
| }                                |                |         |           |

## 7.4 FFS

Void.

## 7.5 Common procedures for RRM testing

### 7.5.1 Procedure to configure SCC(s) for NR RRM CA testing

Same procedure as described in clause 5.5.1.

### 7.5.2 Procedure to configure SCC(s) for EN-DC RRM CA testing

Same procedure as described in clause 5.5.1.

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## Annex A (informative): Connection Diagrams

### A.1 Definition of Terms

**System Simulator or SS** – A device or system, that is capable of generating simulated Node B signalling and analysing UE signalling responses on one or more RF channels, in order to create the required test environment for the UE under test. It will also include the following capabilities:

1. Measurement and control of the UE Tx output power through TPC commands
2. Measurement of Throughput
3. Measurement of signalling timing and delays
4. Ability to simulate UTRAN and/or E-UTRAN and/or GERAN signalling

**Test System** – A combination of devices brought together into a system for the purpose of making one or more measurements on a UE in accordance with the test case requirements. A test system may include one or more System Simulators if additional signalling is required for the test case. The following diagrams are all examples of Test Systems.

NOTE 1: The above terms are logical definitions to be used to describe the test methods used in the documents TS 38.521-1, TS 38.521-2, TS 38.521-3, TS 38.523-1 and TS 38.533 in practice, real devices called 'System Simulators' may also include additional measurement capabilities or may only support those features required for the test cases they are designed to perform.

NOTE 2: Components in the connection diagrams:

The components in the connection diagrams represent ideal components. They are intended to display the wanted signal flow. They don't mandate real implementations.

**Connection:** Each connection is displayed as a one or two sided arrow, showing the intended signal flow. In some cases, for some tests, some connections shown may not be necessary (for example UL RX connection for a second cell).

**Circulator:** The signal, entering one port, is conducted to the adjacent port, indicated by the arrow. The attenuation among the above mentioned ports is ideally 0 and the isolation among the other ports is ideally  $\infty$ .

**Splitter:** a splitter has one input and 2 or more outputs. The signal at the input is equally divided to the outputs. The attenuation from input to the outputs is ideally 0 and the isolation between the outputs is ideally  $\infty$ .

**Combiner:** a combiner has one output and 2 or more inputs. The signals at the inputs are conducted to the output, all with the same, ideally 0 attenuation. The isolation between the inputs is ideally  $\infty$ .

**Switch:** contacts a sink (or source) alternatively to two or more sources (or sinks).

**Fader:** The fader has one input and one output. The MIMO fading channel is represented by several single faders (e.g. 8 in case of a MIMO antenna configuration 4x2) The correlation among the faders is described in TS 36.521-1 clause B.2.2. In some cases, for some tests, diagrams with fader(s) are referenced when no fading is required; in this case the fader(s) is omitted.

**Attenuator:** TBD

**Test Equipment Part (TE):** is the section of the connection diagram focused including a combination of devices to perform one or several measurements on a UE depending on the test requirements specified in 3GPP TS 38.101-1 [7], 3GPP TS 38.101-2 [8] and 3GPP TS 38.101-3 [9]. The basic TE is the system simulator to enable the connection between the gNB (and the eNB, if NSA mode) and the DUT. The number of cells, the number of streams per cell and how to combine them, channel and propagations conditions, etc. are also part of the TE. Other instruments as external spectrum analyser, interferer generators, external faders or external AWGN generators can be also considered part of the TE, as these instruments allow to measure a test requirement or to set the UE under certain conditions.

**DUT Part (UE):** for conducted measurement this section is focused on the number of physical antenna connectors and how to combine in the DUT. For radiated measurement this section shows the connections needed to translate the UL/DL streams to the radiated part.

## A.2 General considerations on Connections Diagram

In order to improve the maintainability and the readability of this section and to make easy to identify the whole connection diagram to use per each test case, several considerations have been used for this section:

- The whole connection diagram to use for a specific test has been split in Test Equipment (TE) and User Equipment (UE) parts.
- The same connection diagram will be used for SA and NSA, where the LTE link is specified in each connection diagram (TE and UE) with a dashed line (and this part will be only used for NSA).
- To obtain the whole connection diagram required per each test case is necessary to specify the TE part required for each measurement and the UE part will depend on the UE antenna implementation.

## A.3 Setup Diagrams

### A.3.1 Test Equipment Parts for Conducted Measurements

#### A.3.1.1 Basic Transmitter/Receiver tests

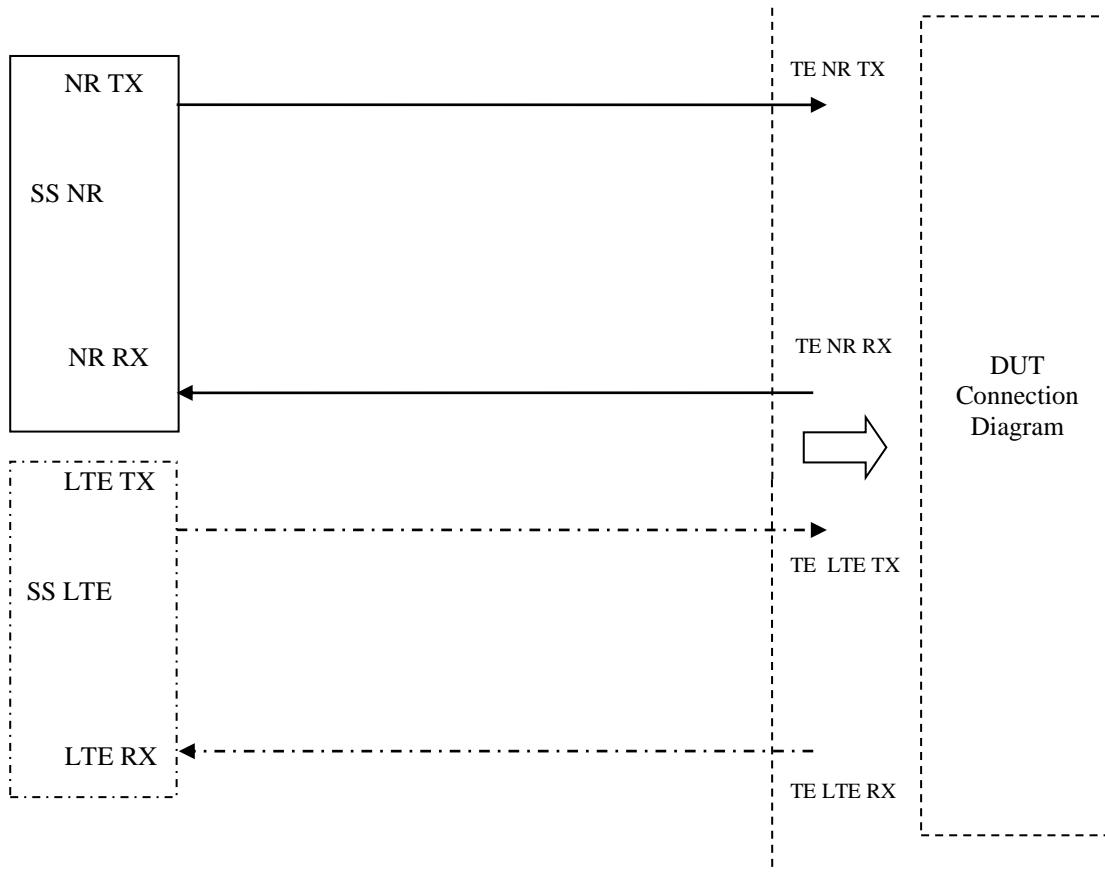
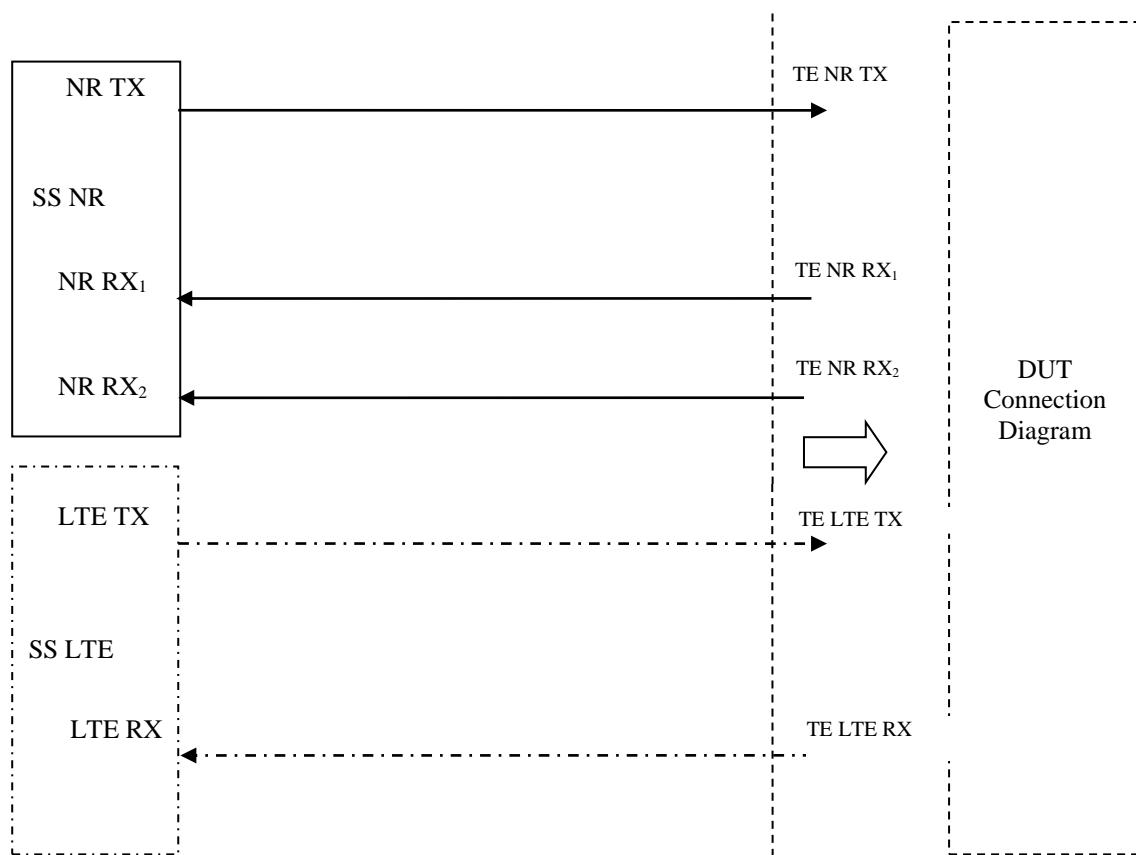


Figure A.3.1.1.1: Test Equipment connection for basic single cell, RX and TX tests



**Figure A.3.1.1.2: Test Equipment connection for single cell, RX and TX tests for NR UL MIMO**

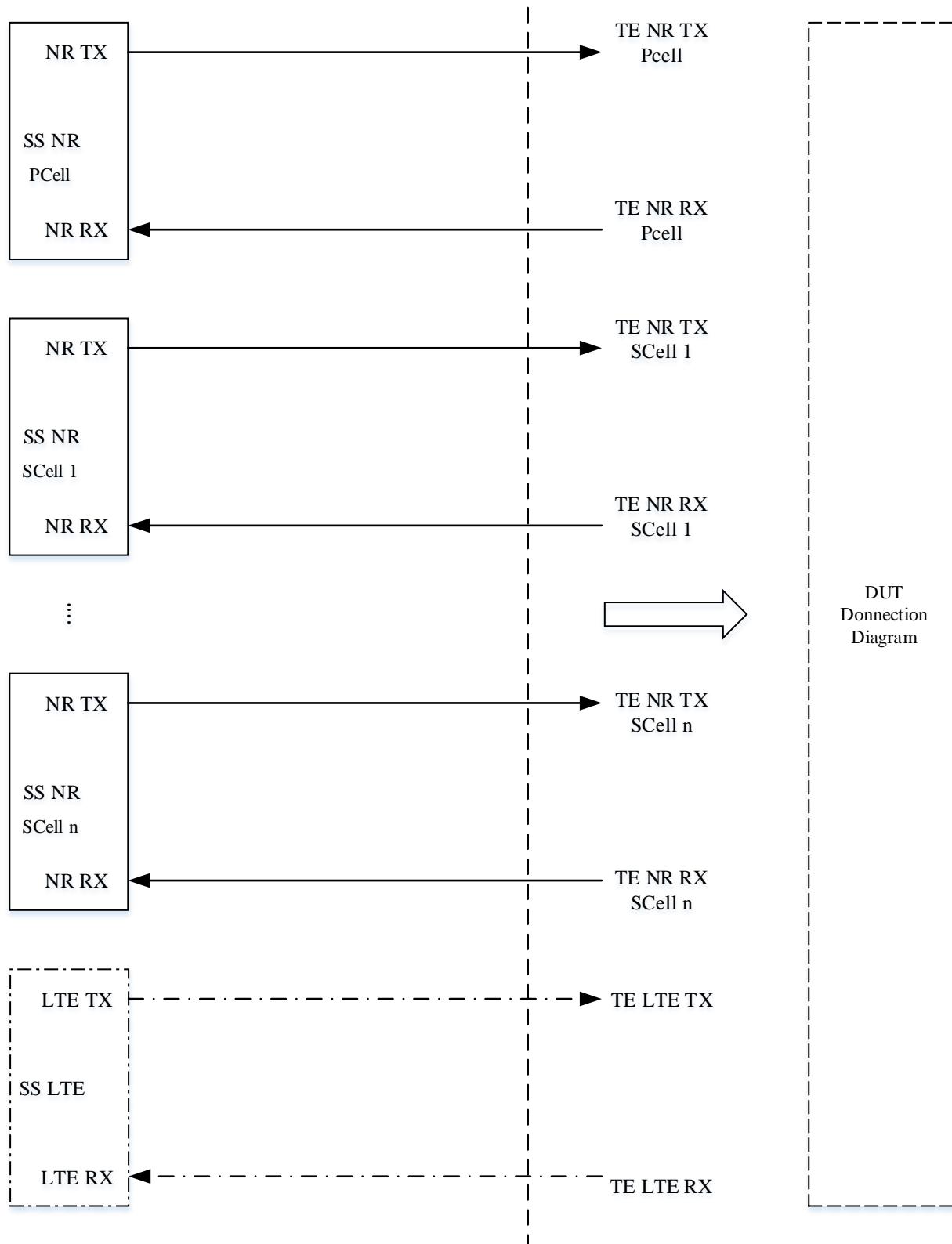


Figure A.3.1.1.3: Test Equipment connection for NR CA, basic RX and TX tests

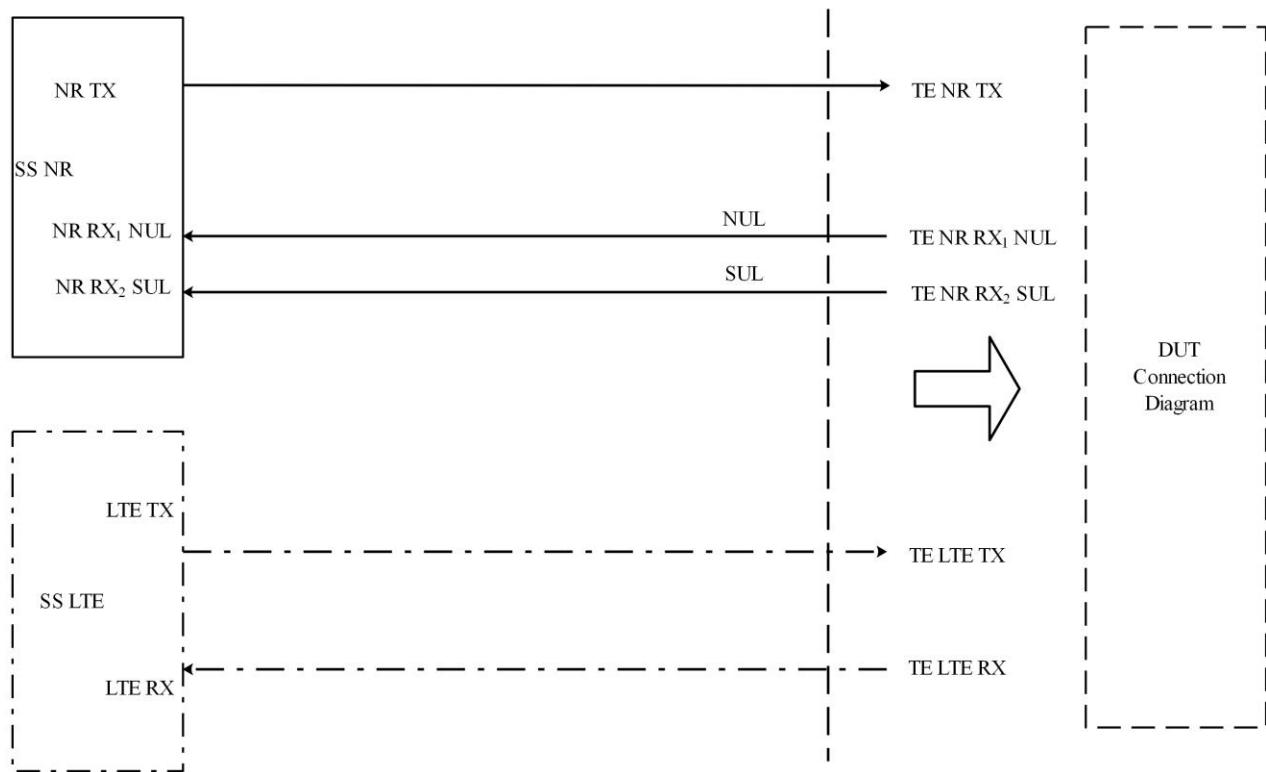


Figure A.3.1.1.4: Test Equipment connection for NR SUL, basic RX and TX tests

### A.3.1.2 Transmitter tests using Spectrum Analyser

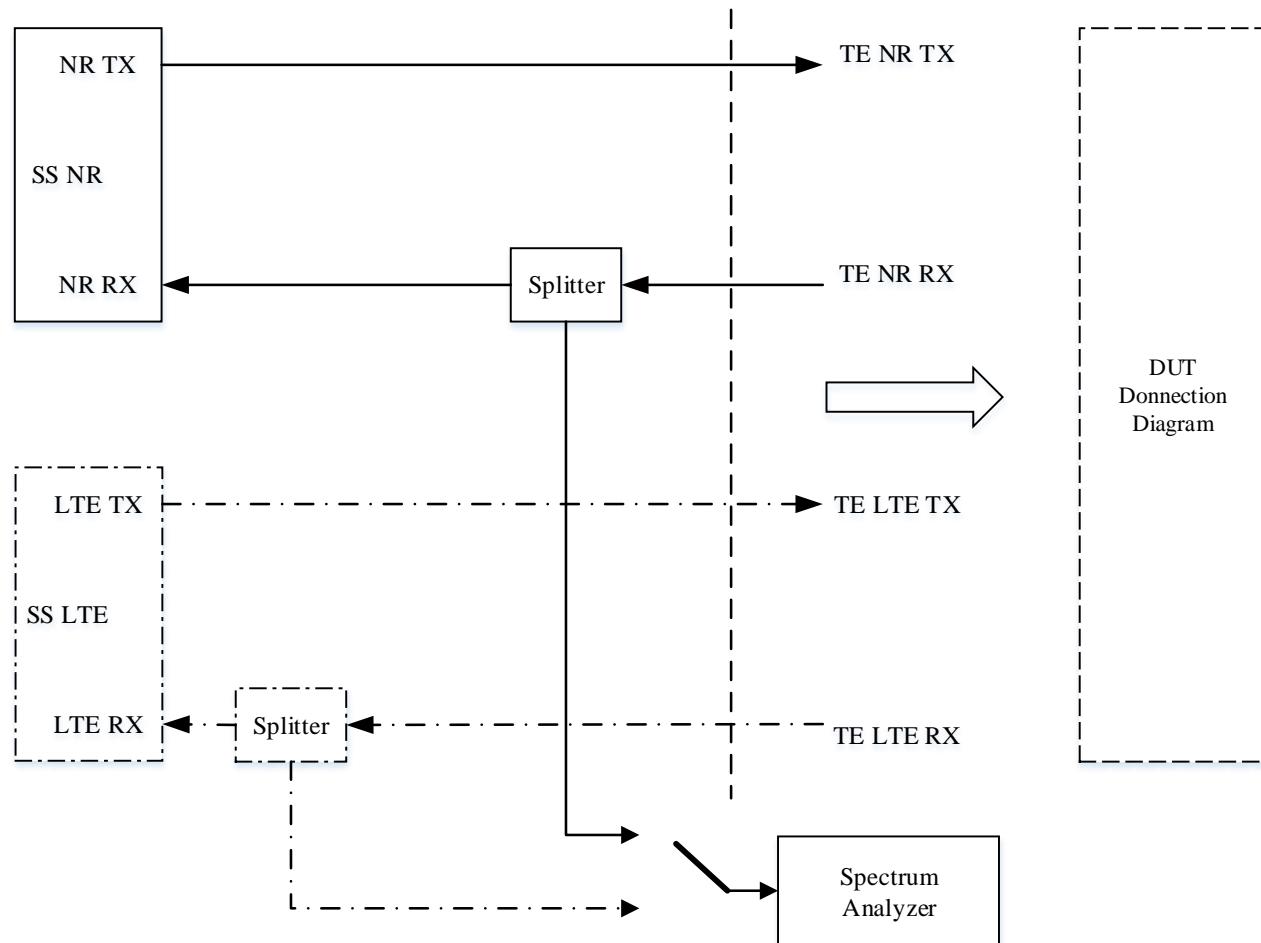
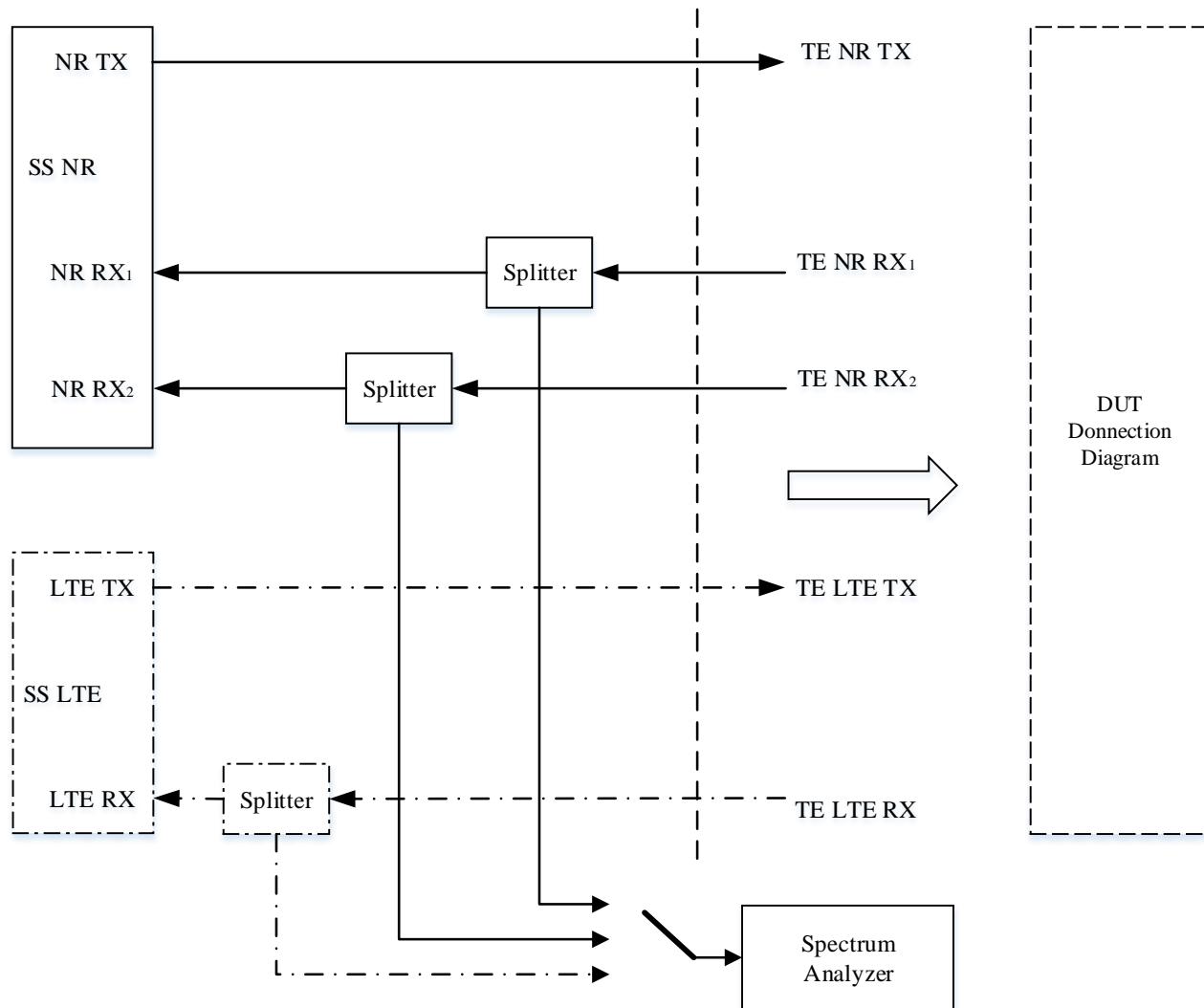


Figure A.3.1.2.1: Test Equipment connection for TX-tests with additional Spectrum Analyzer



**Figure A.3.1.2.2: Test Equipment connection for TX-tests for UL MIMO with additional Spectrum Analyser**

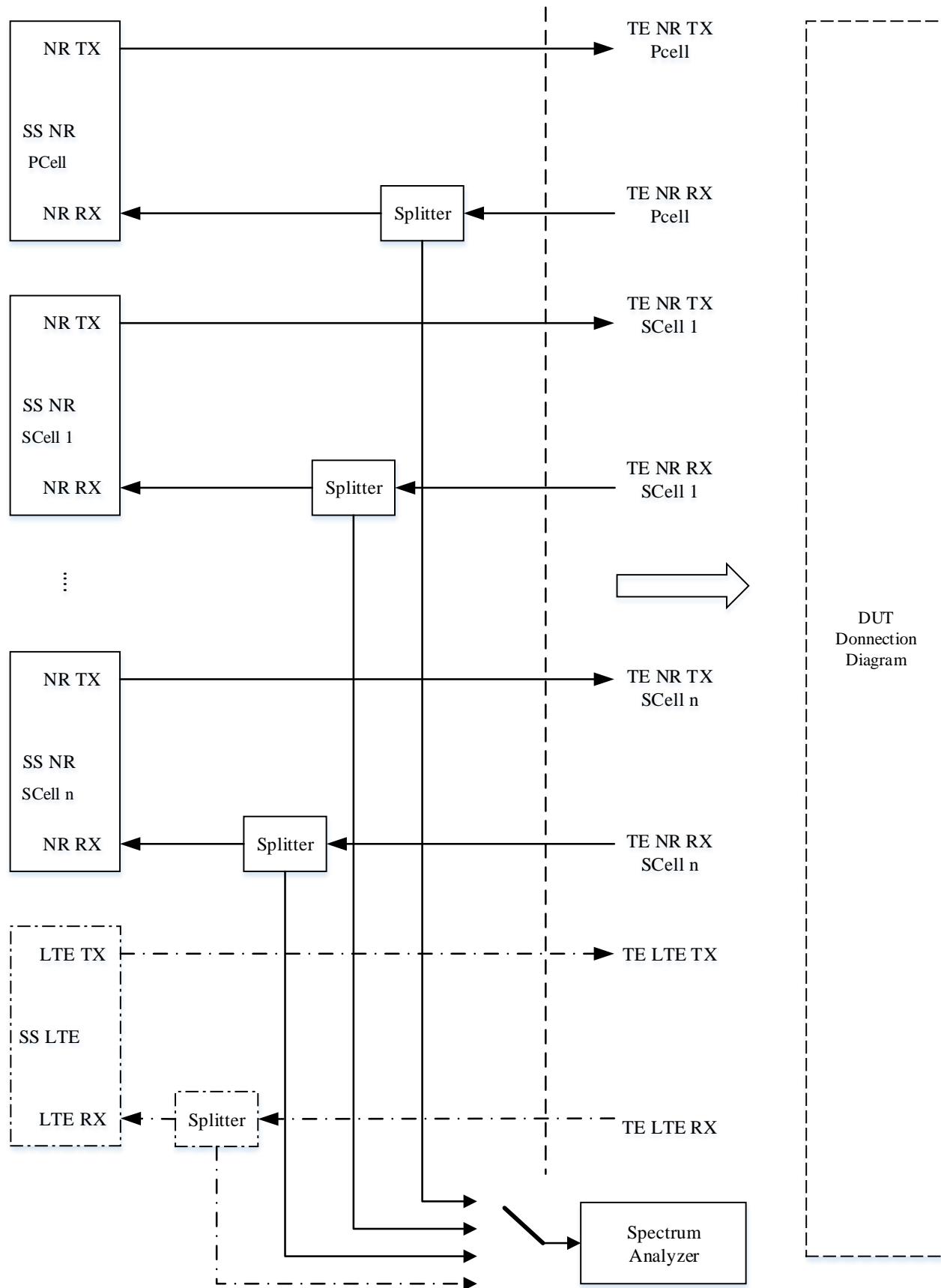


Figure A.3.1.2.3: Test Equipment connection for NR CA TX-tests with additional Spectrum Analyser

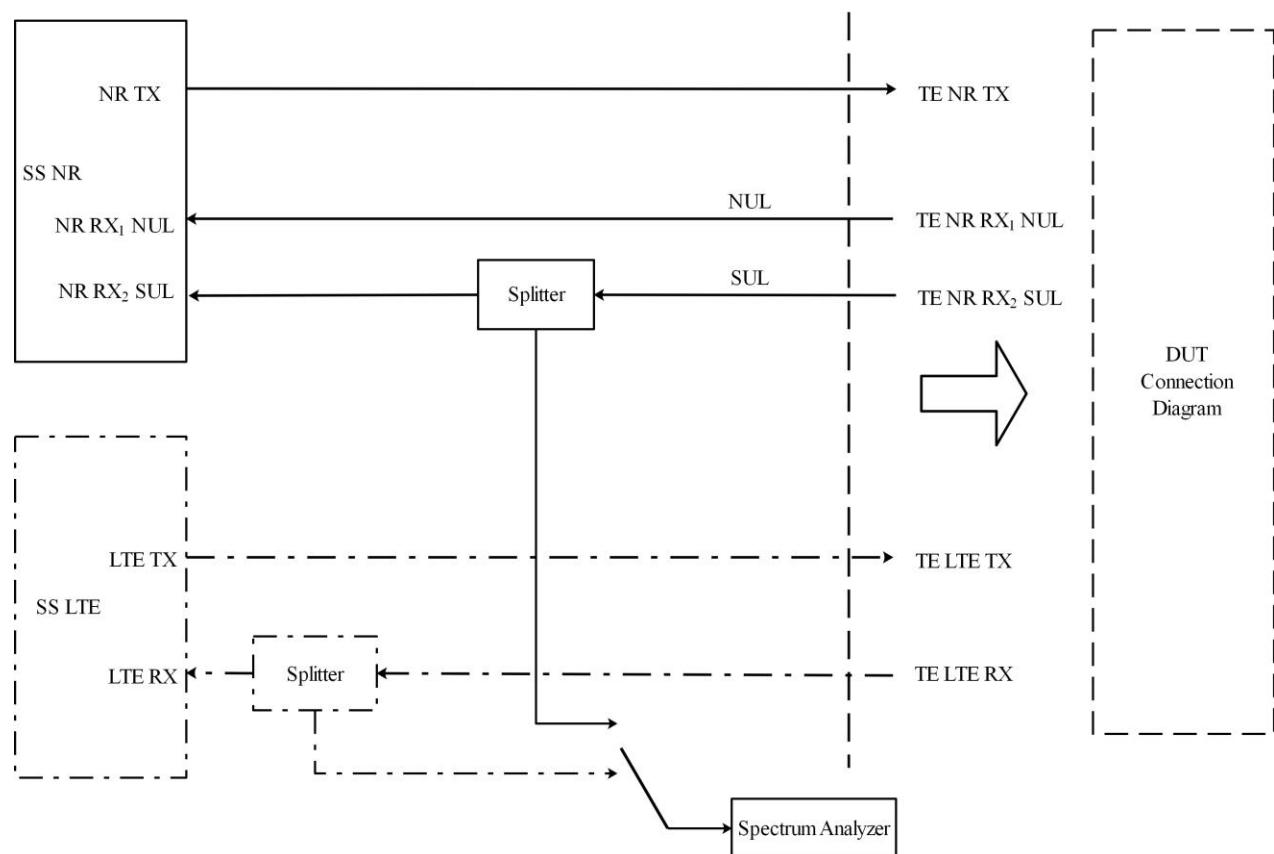
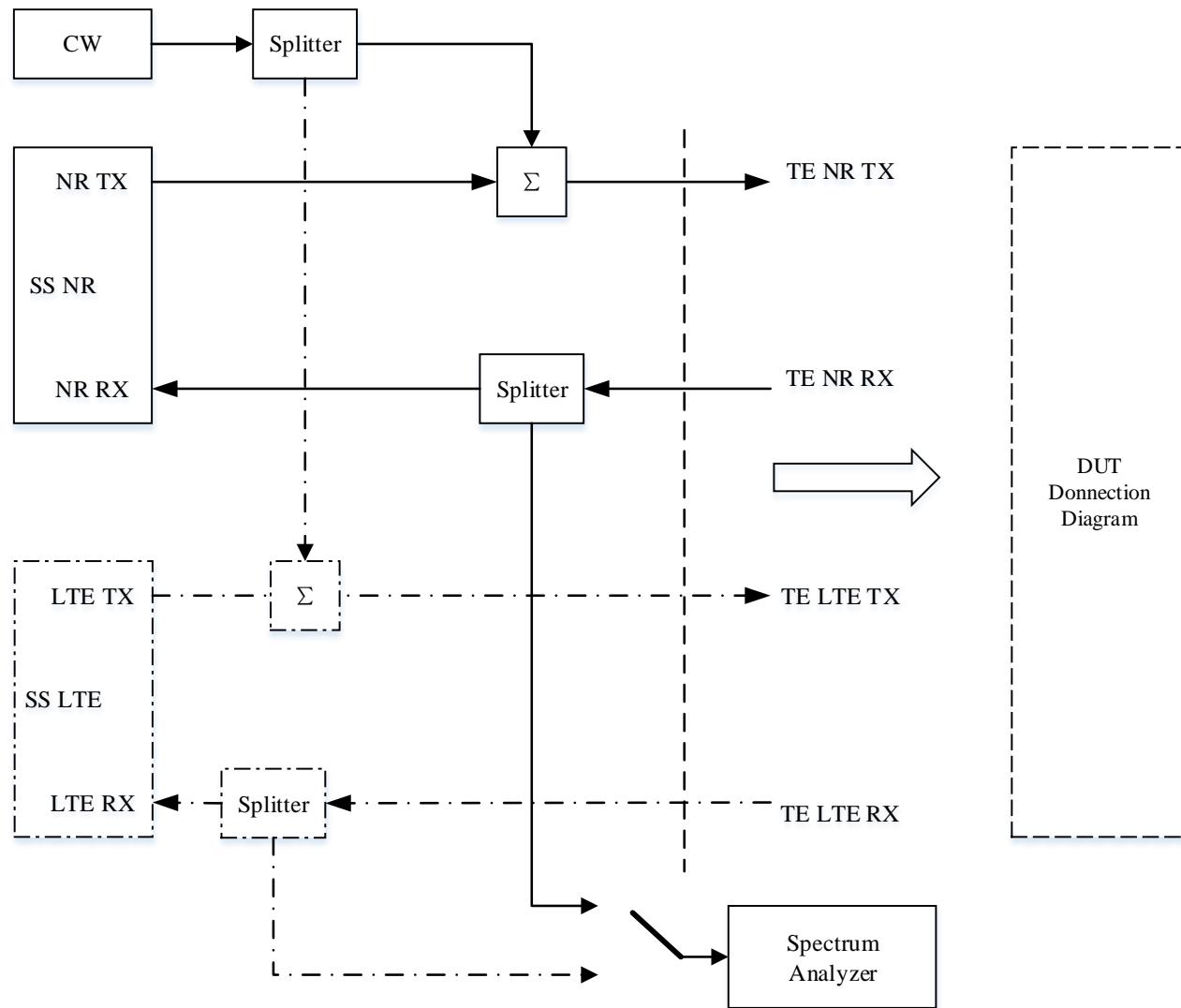
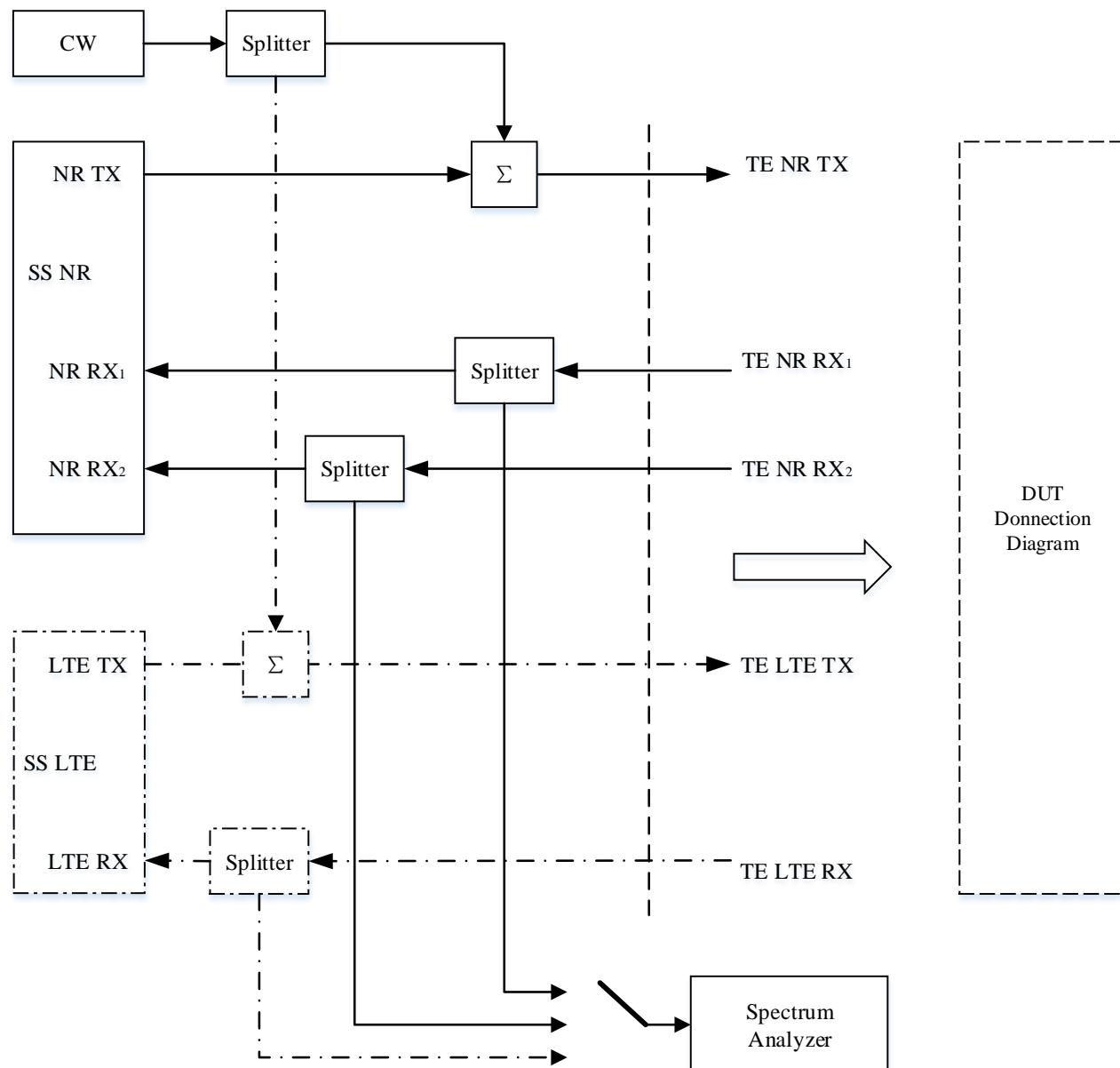


Figure A.3.1.2.4: Test Equipment connection for NR SUL TX-tests with additional Spectrum Analyzer

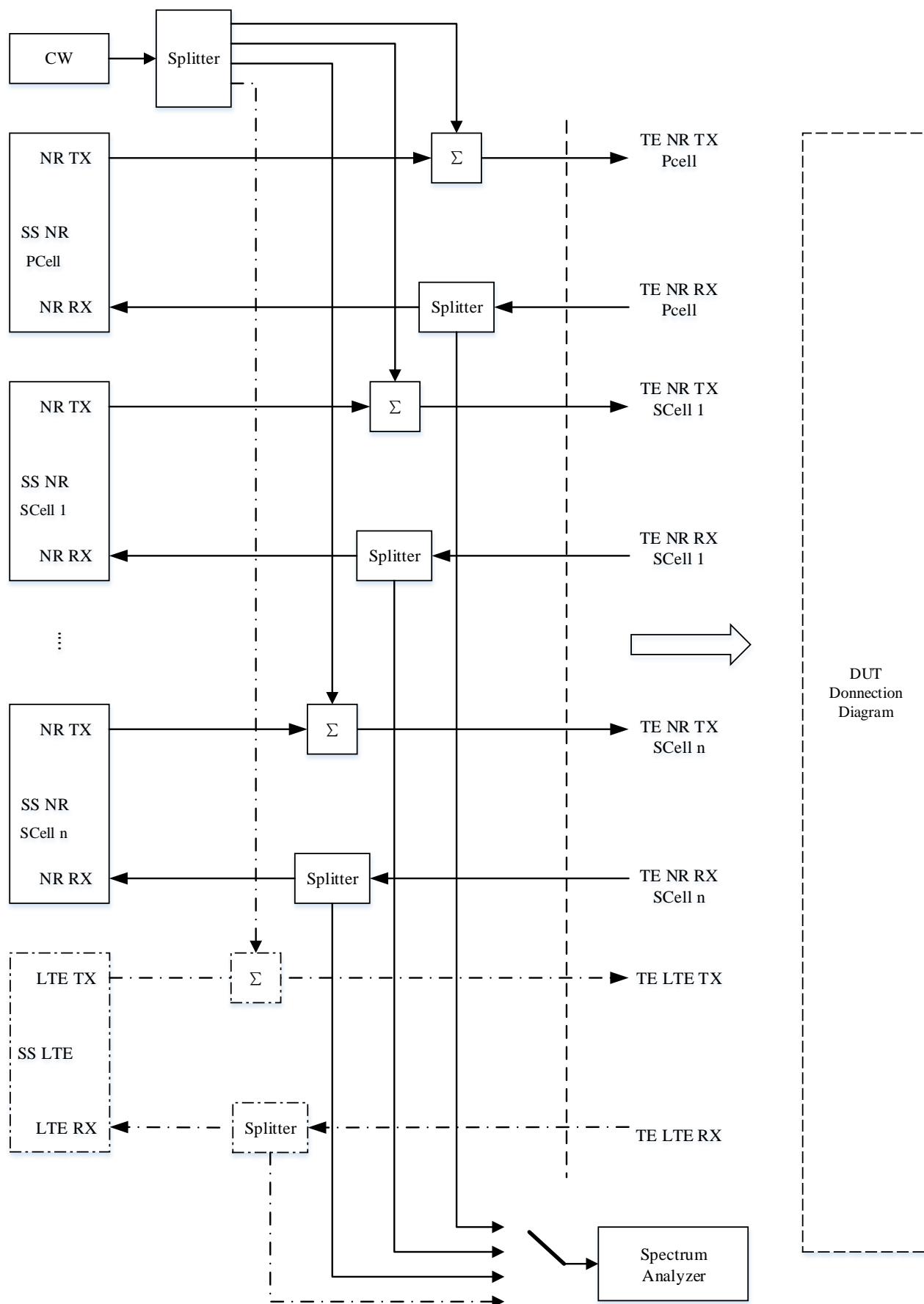
### A.3.1.3 Transmitter tests using Spectrum Analyser and Signal Generator



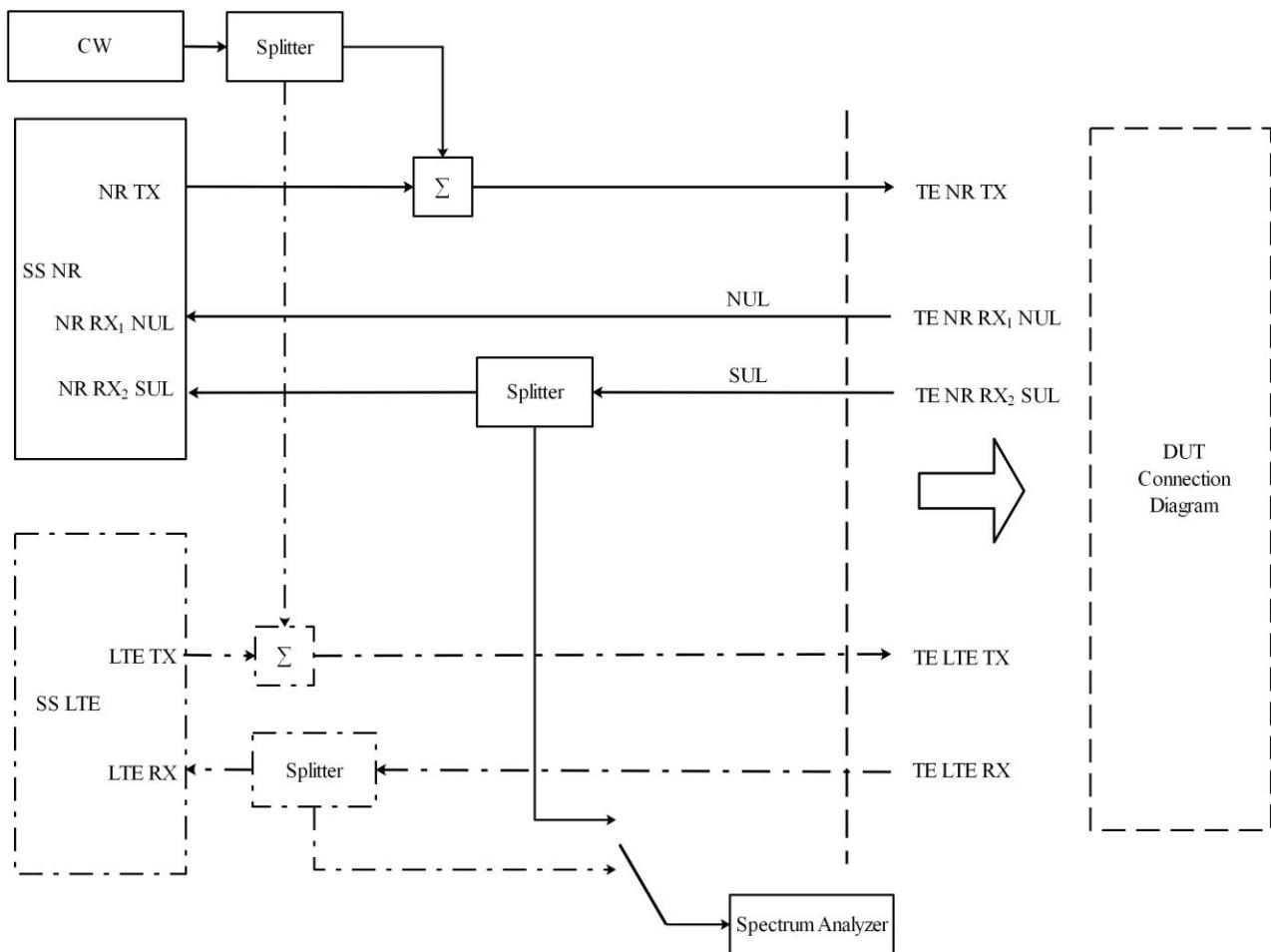
**Figure A.3.1.3.1: Test Equipment connection for Transmitter tests with CW Interference and spectrum analyser**



**Figure A.3.1.3.2: Test Equipment connection for Transmitter tests for UL MIMO with CW Interference and spectrum analyser**



**Figure A.3.1.3.3: Test Equipment connection for NR CA Transmitter tests with CW Interference and spectrum analyser**



**Figure A.3.1.3.4: Test Equipment connection for Transmitter tests for SUL with CW Interference and spectrum analyzer**

### A.3.1.4 Receiver tests using Signal Generator

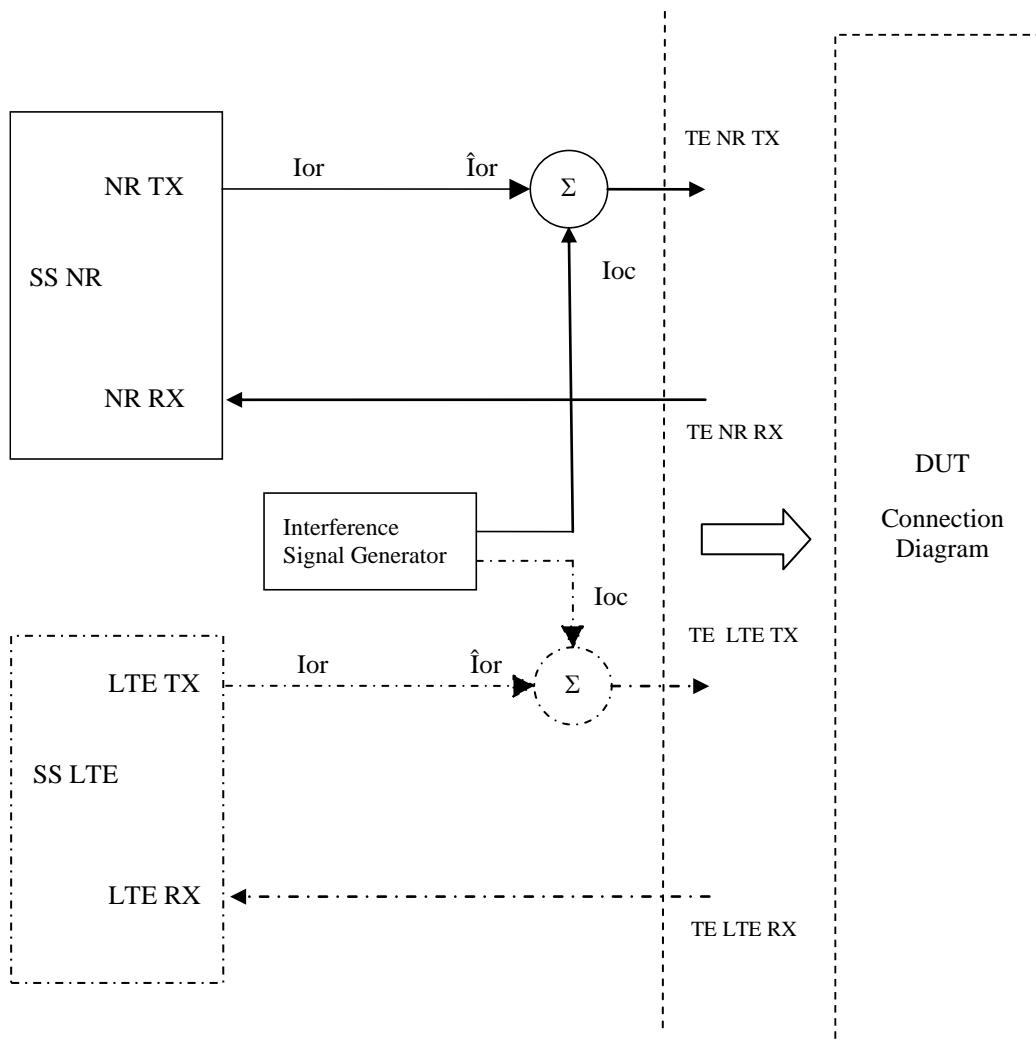
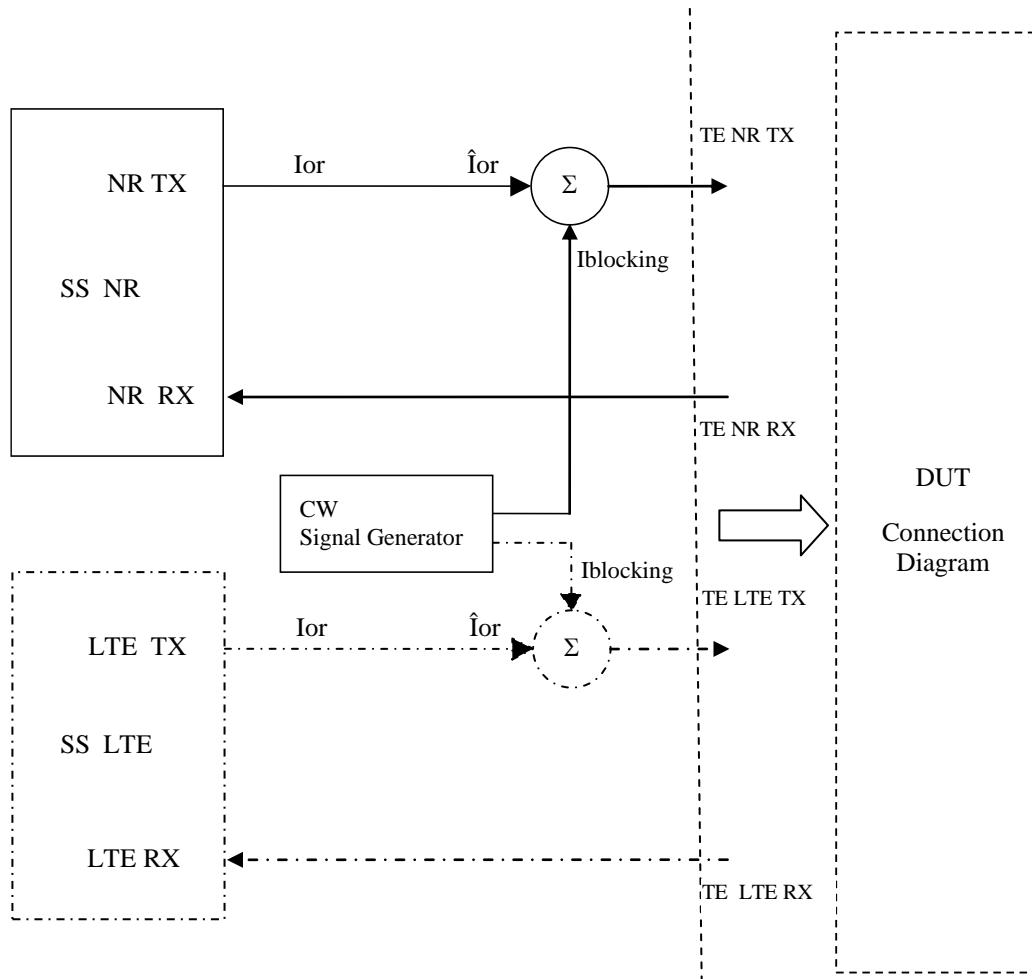
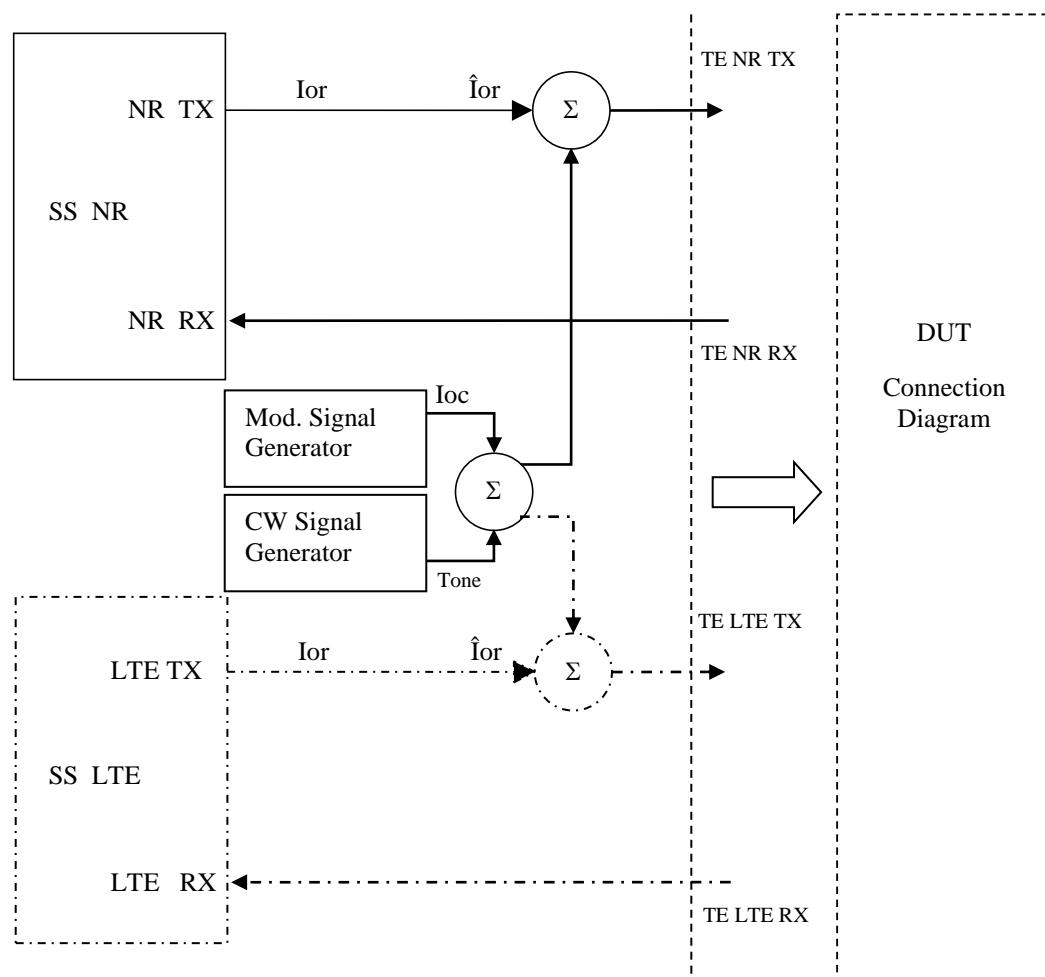


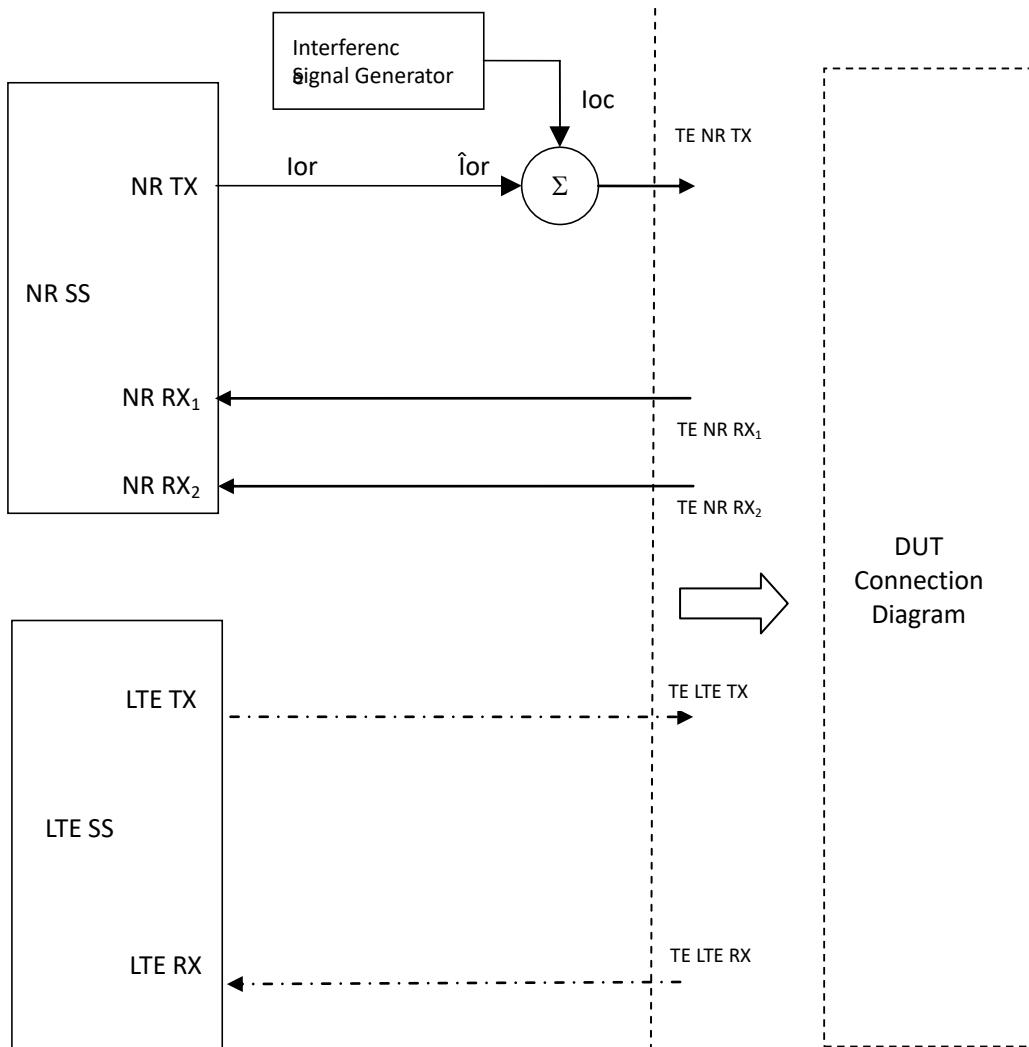
Figure A.3.1.4.1: Test Equipment connection for Receiver tests with Modulated Interference



**Figure A.3.1.4.2: Test Equipment connection for Receiver tests with CW Interference**



**Figure A.3.1.4.3: Test Equipment connection for Receiver tests both Modulated and additional CW Interference signal**



**Figure A.3.1.4.4: Test Equipment connection for Receiver tests for UL MIMO with Modulated Interference**

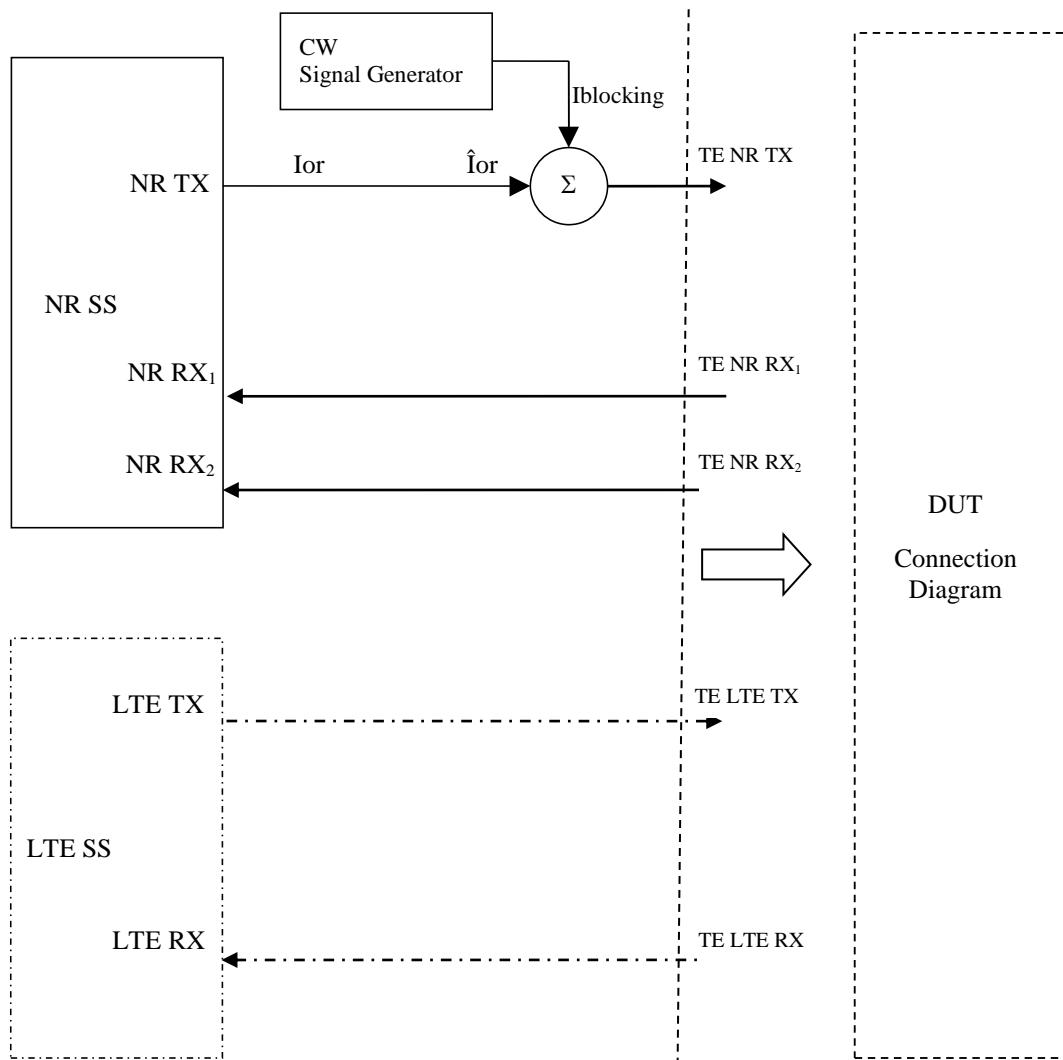
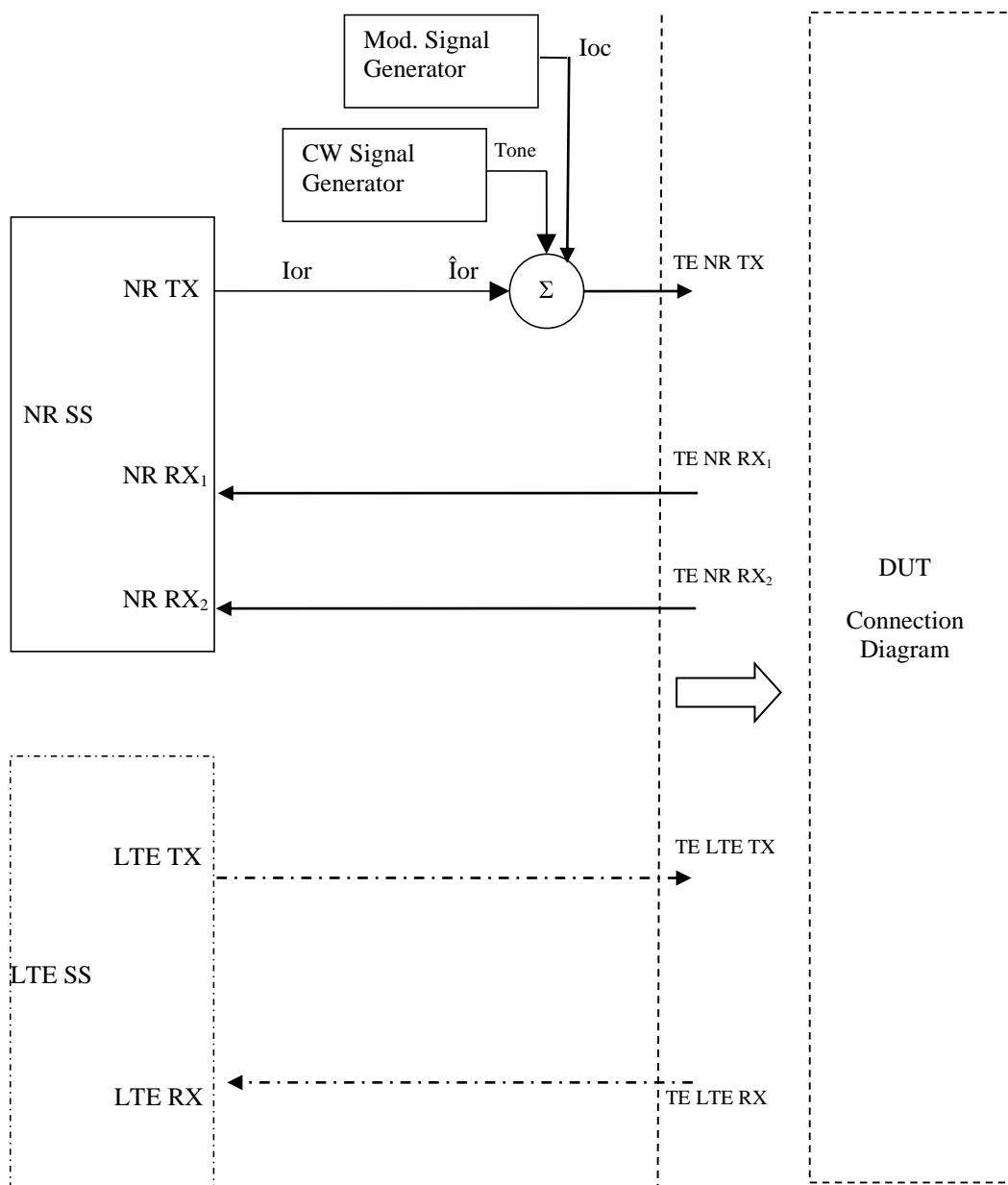
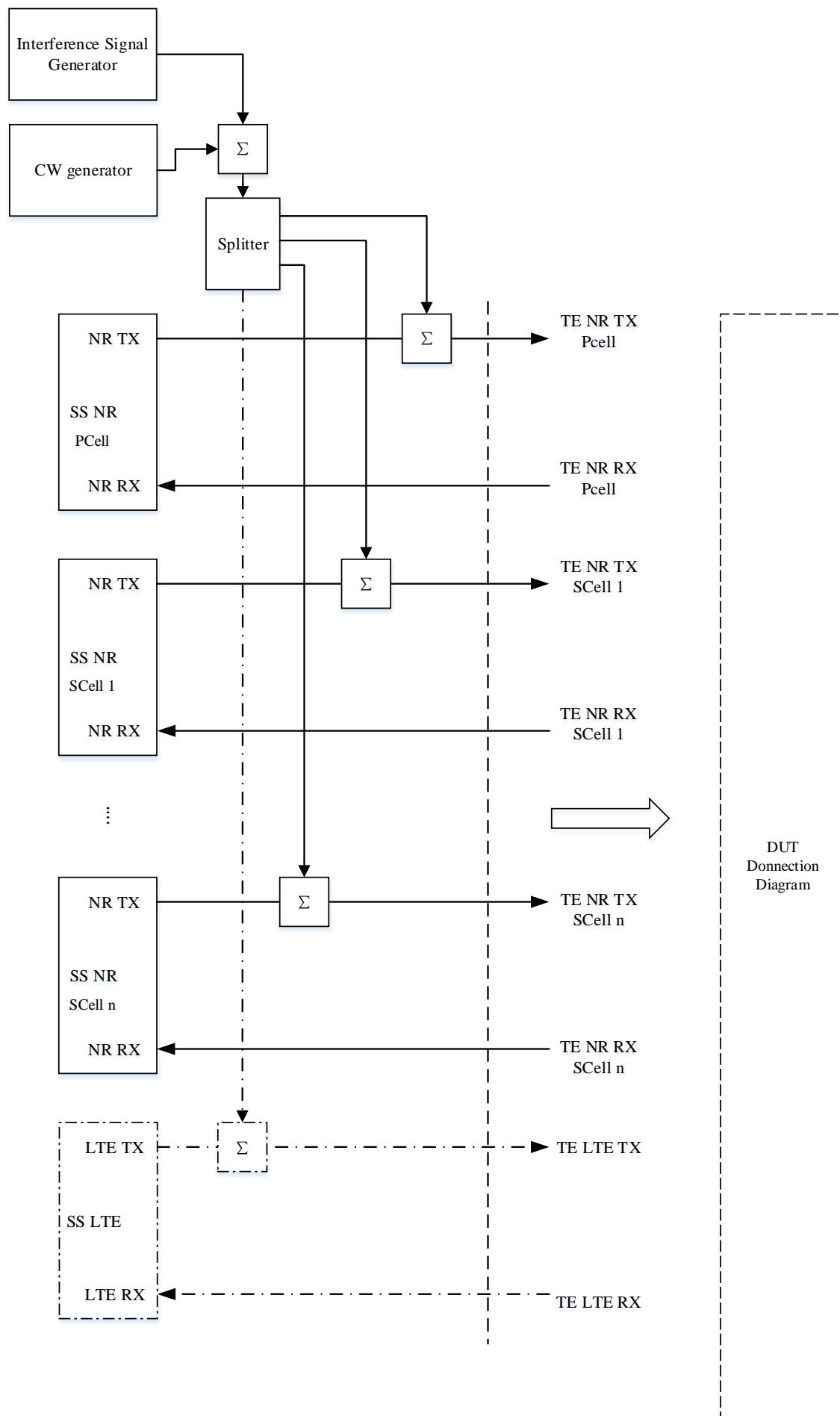


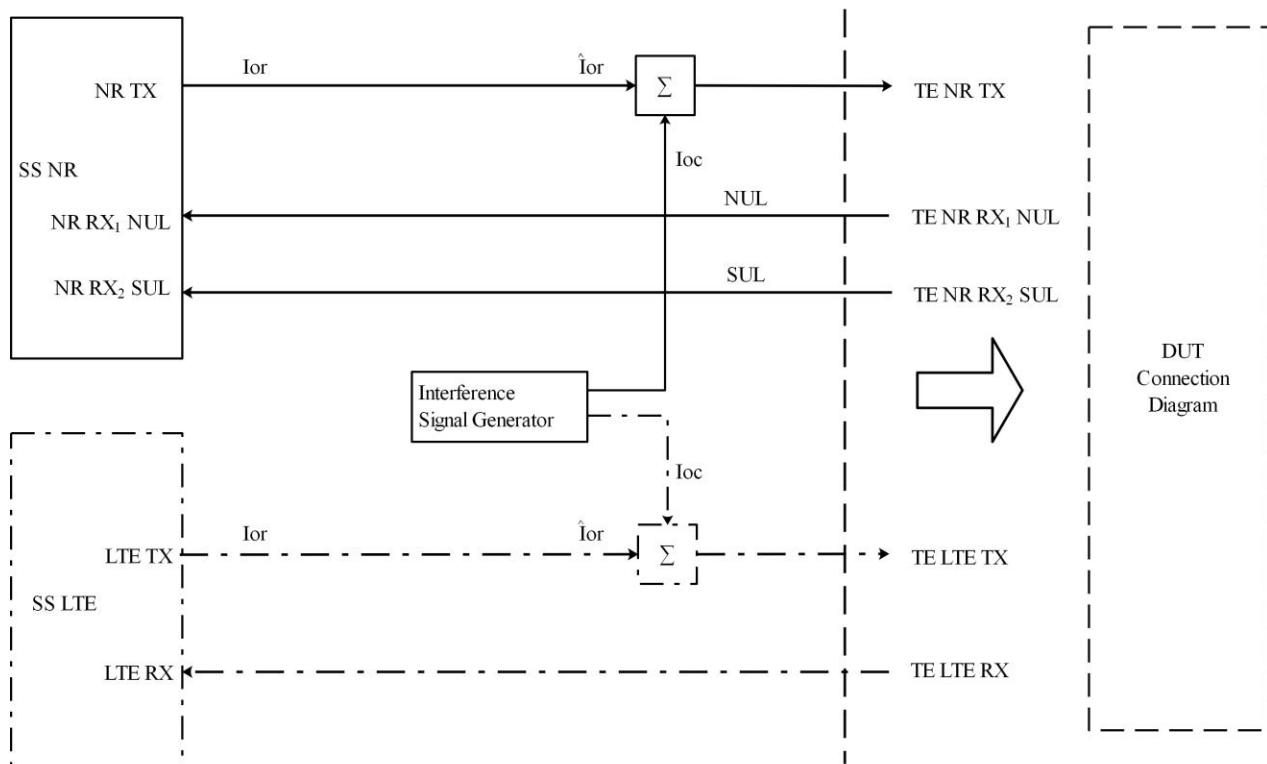
Figure A.3.1.4.5: Test Equipment connection for Receiver tests for UL MIMO with CW Interference



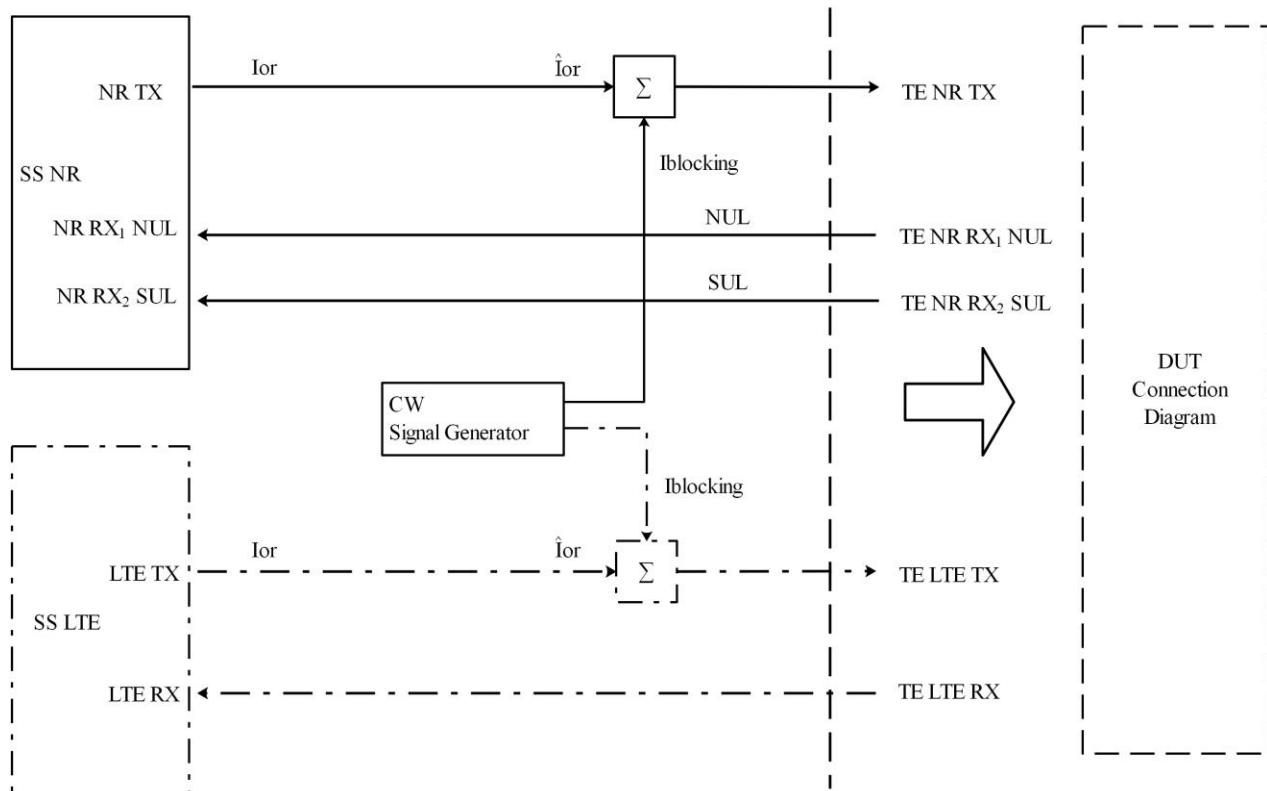
**Figure A.3.1.4.6: Test Equipment connection for Receiver tests for UL MIMO with both Modulated and additional CW Interference signal**



**Figure A.3.1.4.7: Test Equipment connection for NR CA Receiver tests with additional Modulated Interference signal and/or CW Interference signal**



**Figure A.3.1.4.8: Test Equipment connection for NR SUL Receiver tests with Modulated Interference**



**Figure A.3.1.4.9: Test Equipment connection for NR SUL Receiver tests with CW Interference**

### A.3.1.5 Receiver tests using Spectrum Analyser

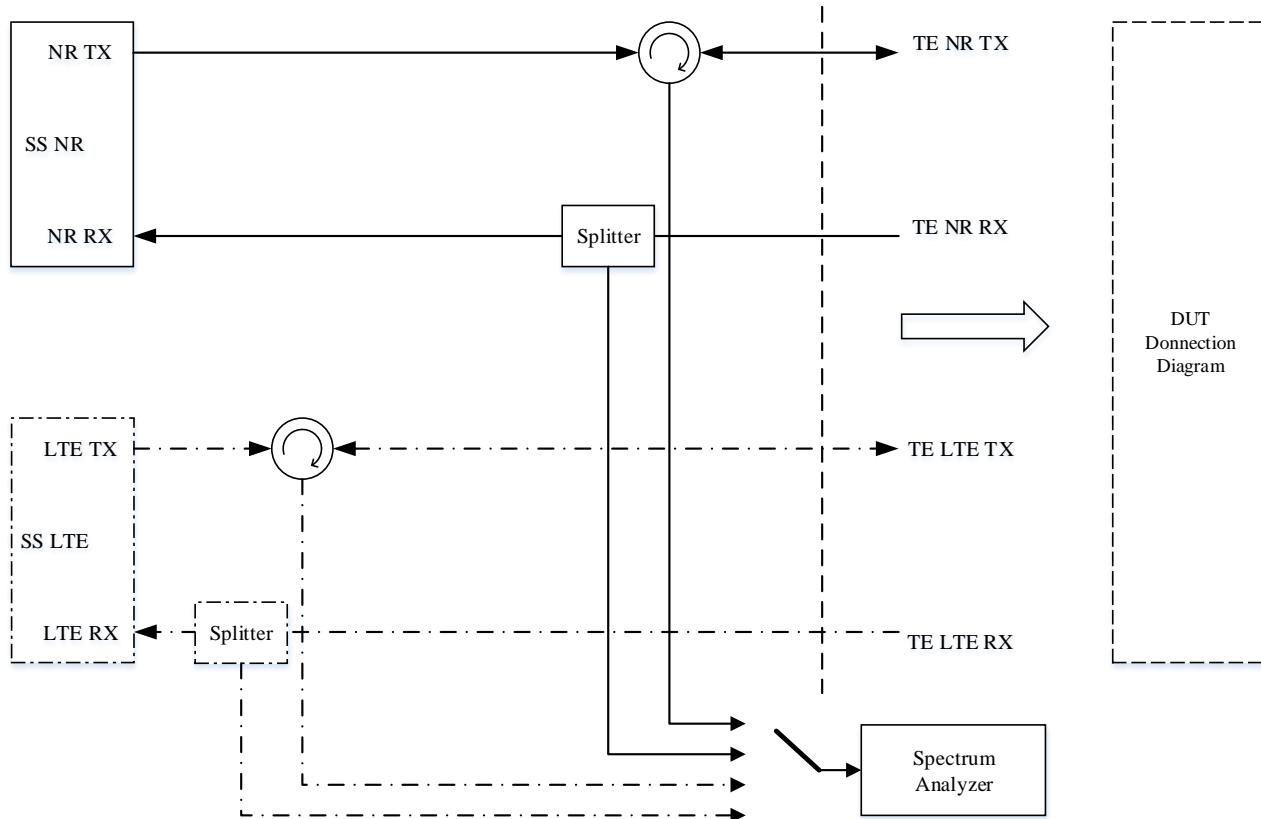


Figure A.3.1.5.1: Test Equipment connection for RX-tests with additional Spectrum Analyzer

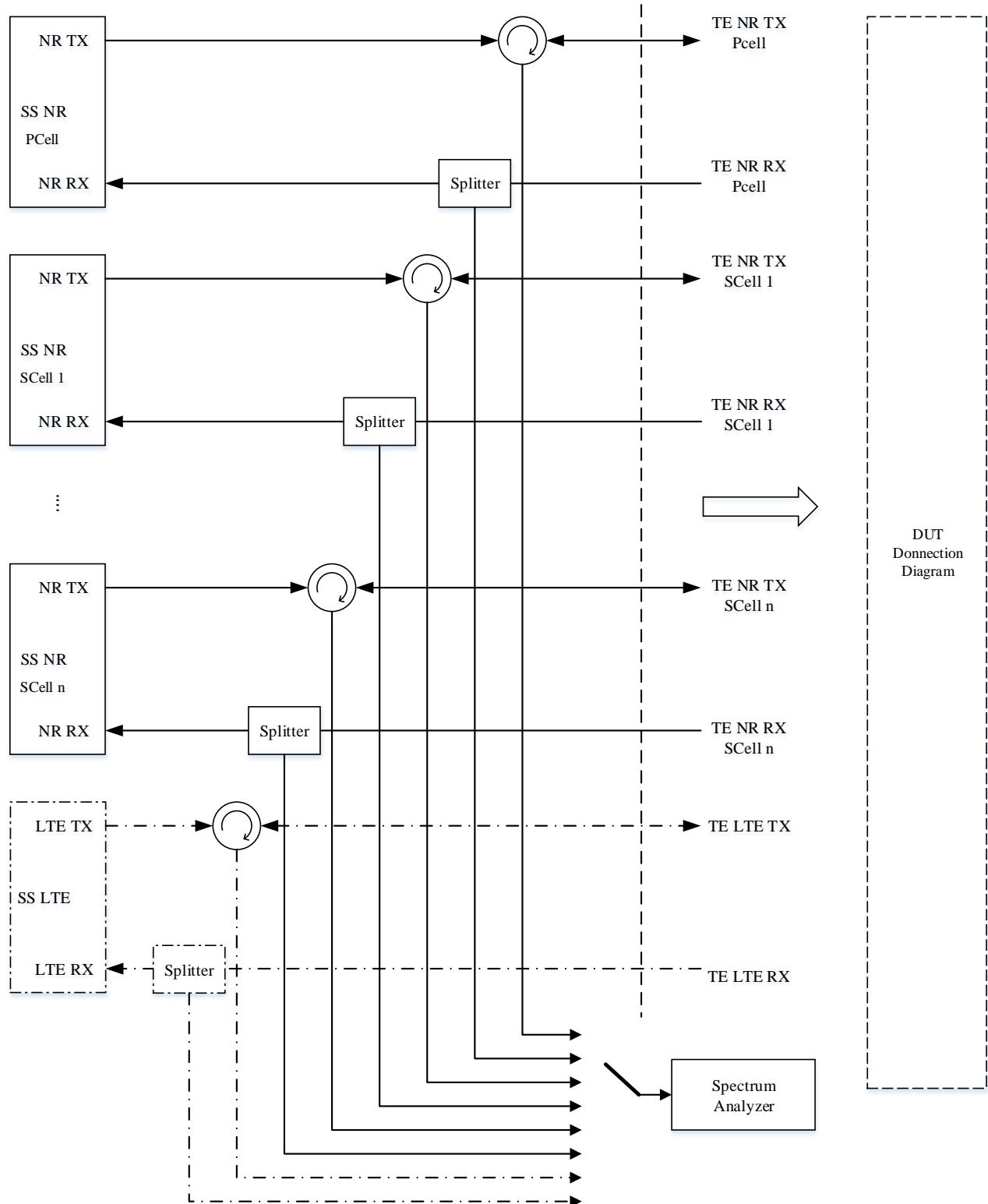
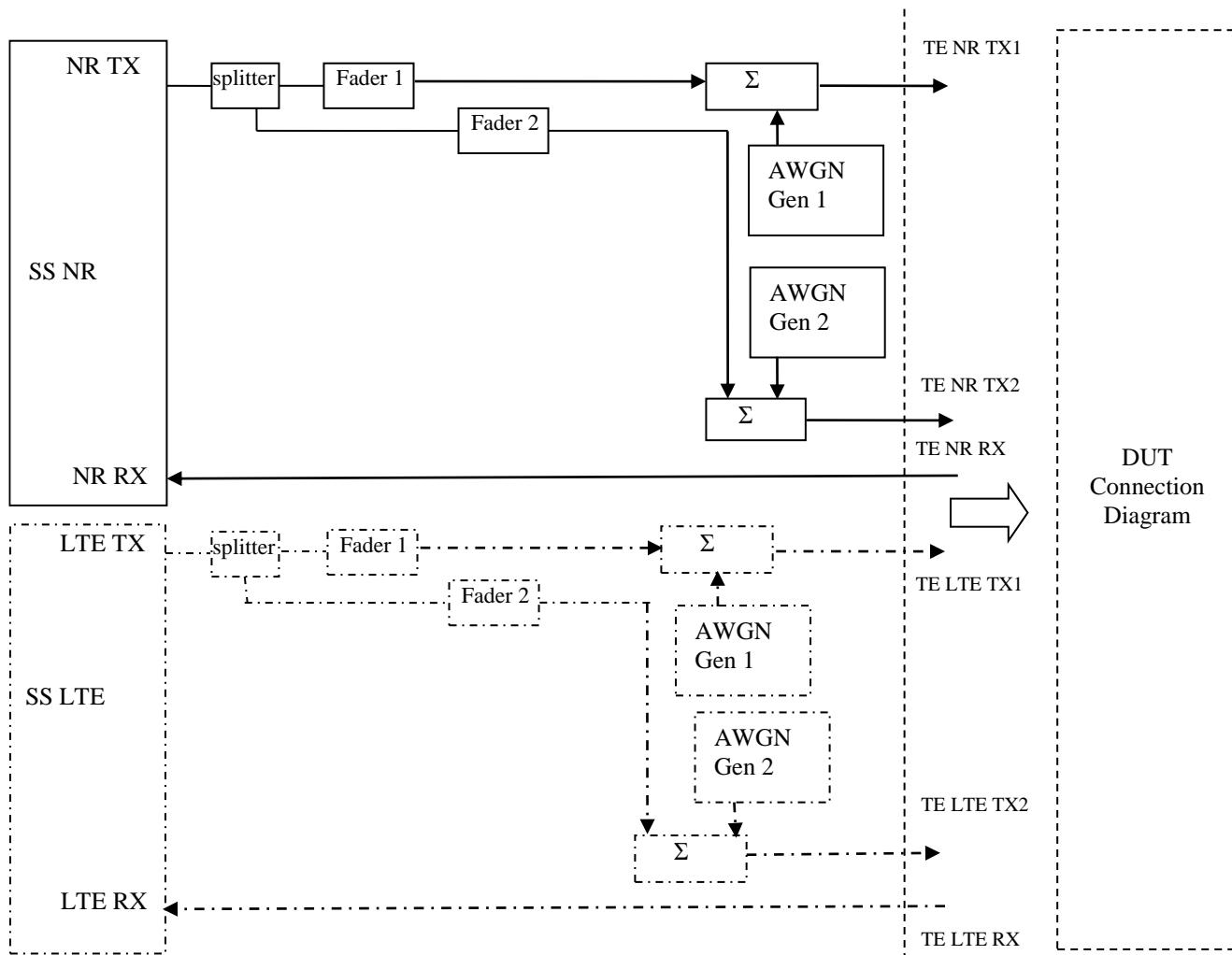


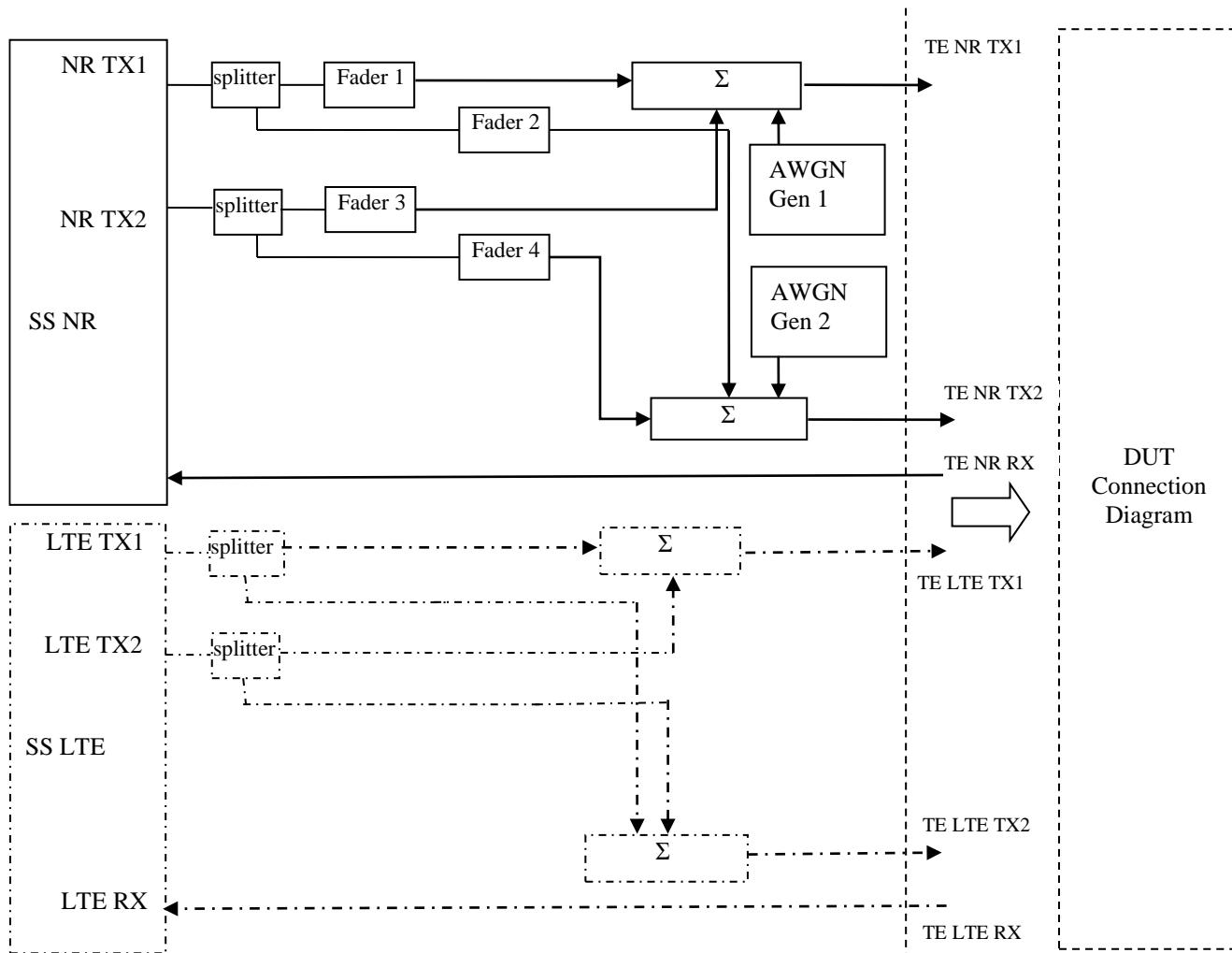
Figure A.3.1.5.2: Test Equipment connection for NR CA RX-tests with additional Spectrum Analyzer

### A.3.1.6 Receiver Performance tests

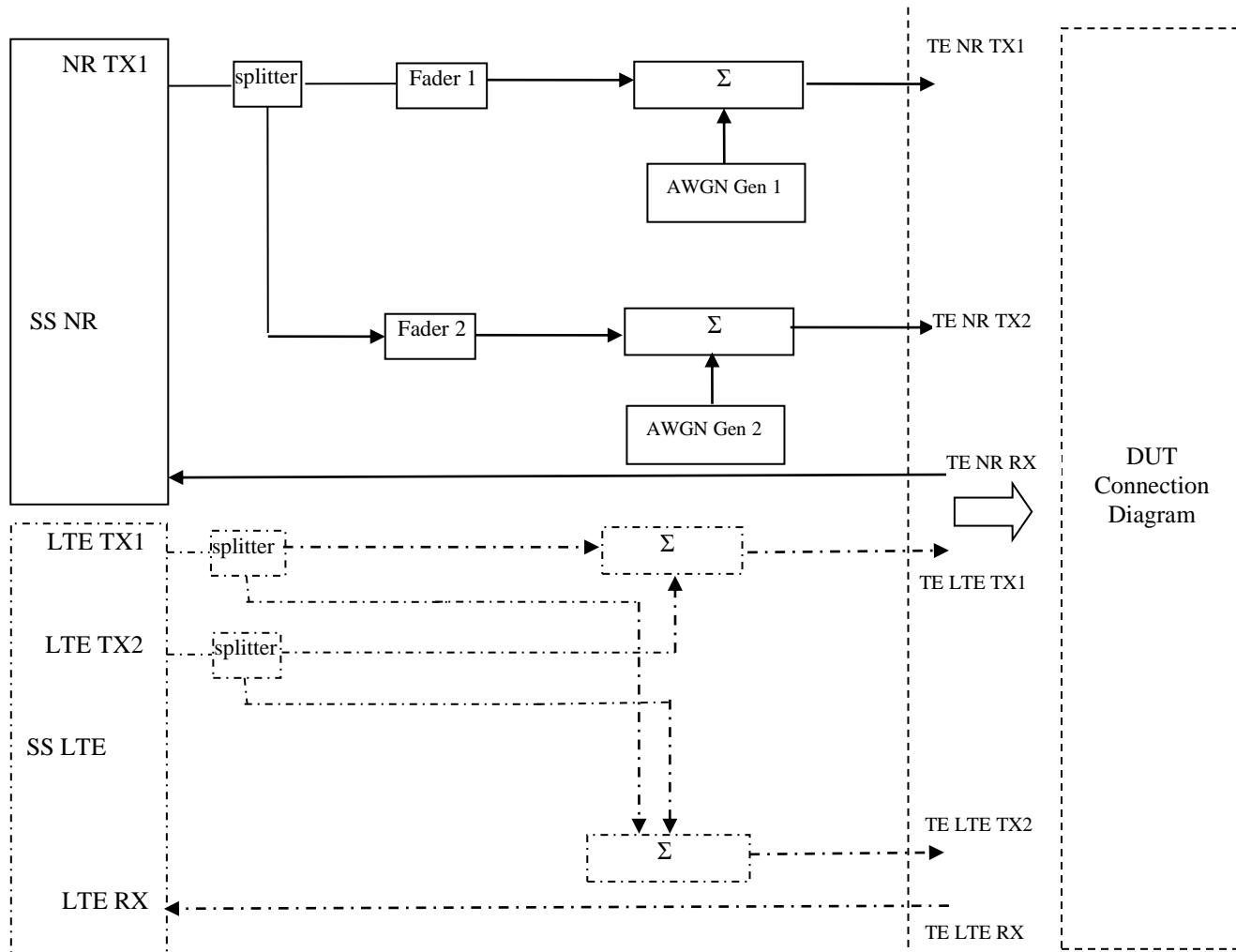


**Figure A.3.1.6.1: Test Equipment connection for Receiver Performance tests with antenna configuration 1x2**

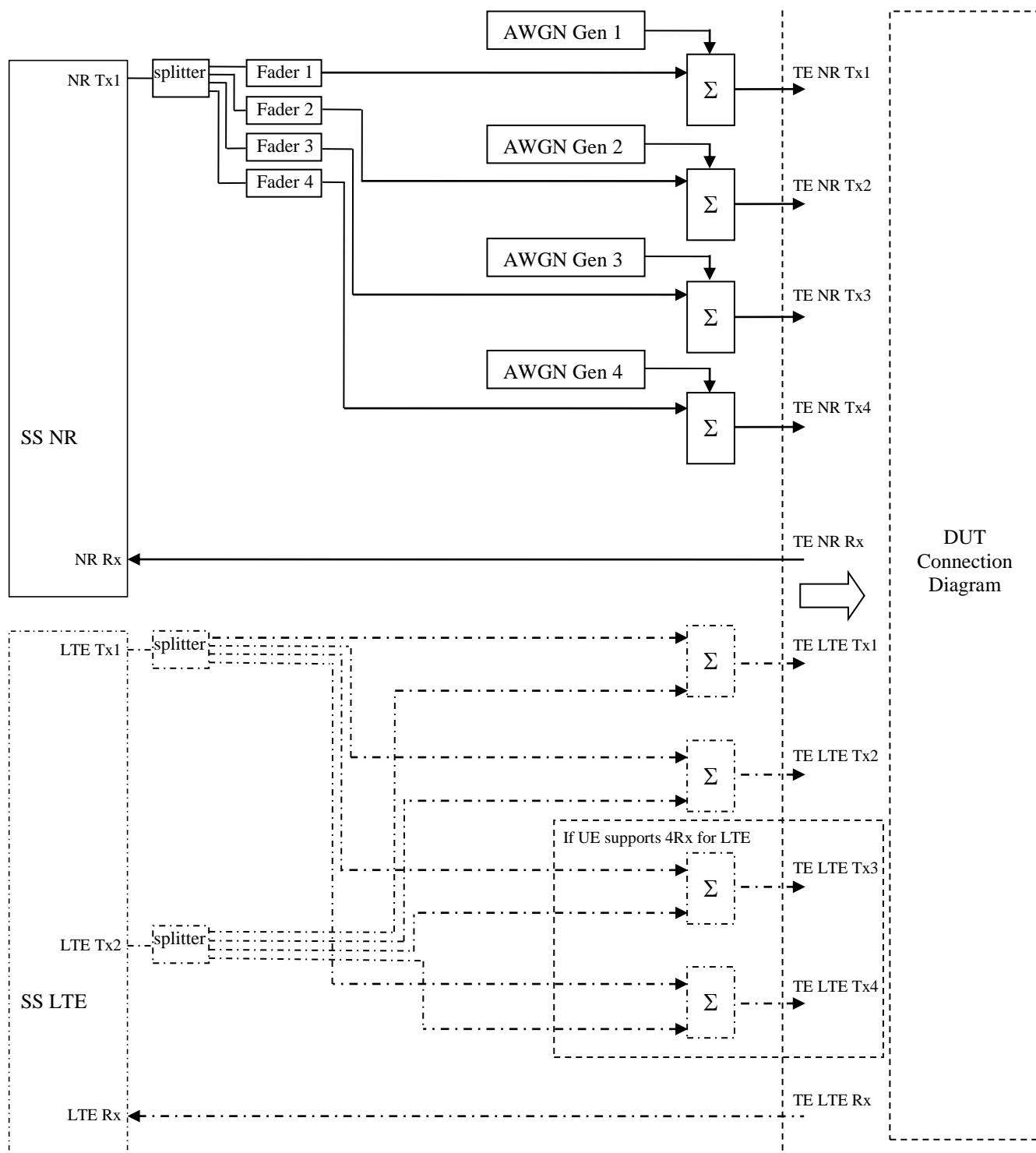
### A.3.1.7 Demodulation Performance and CSI reporting tests



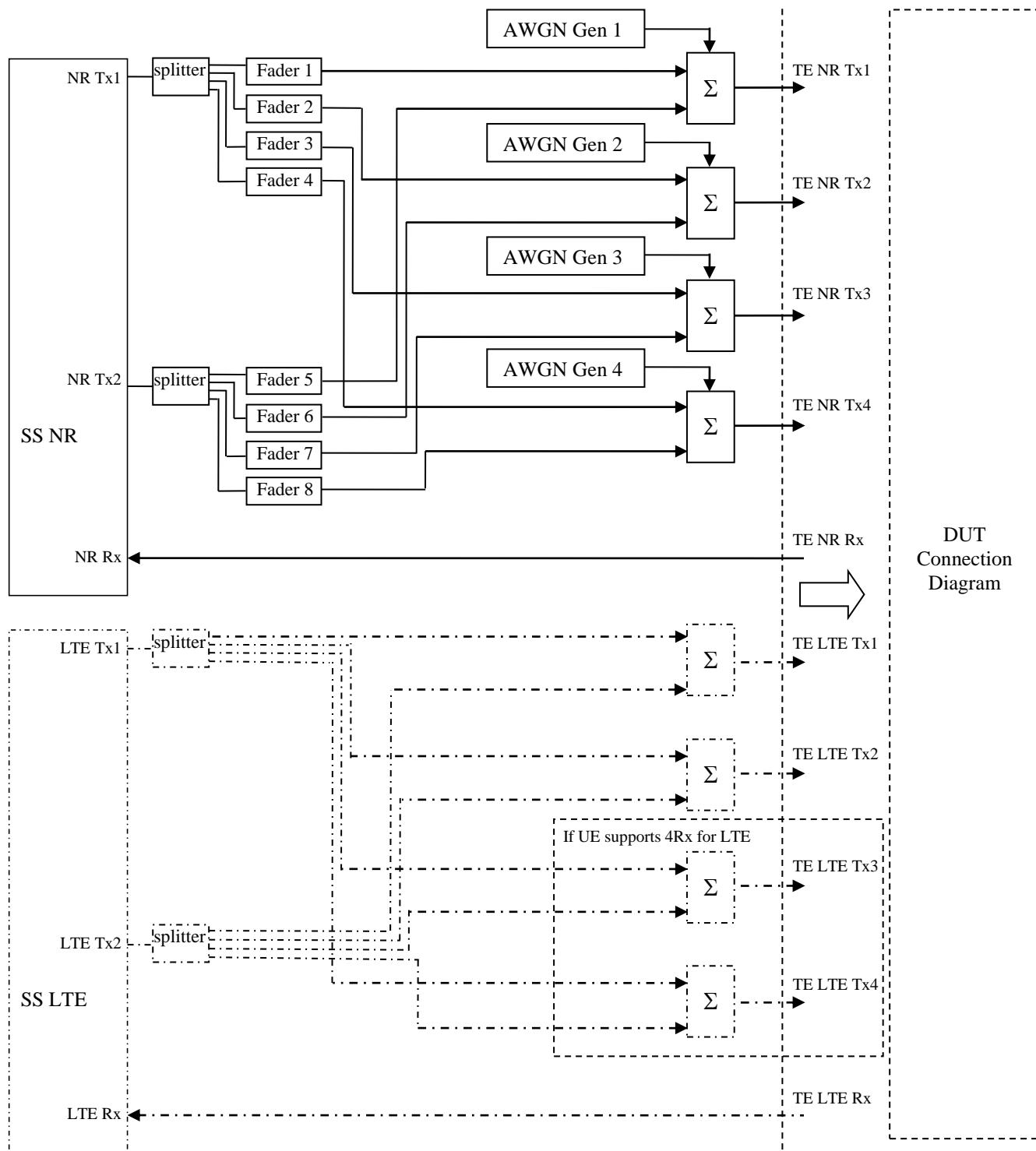
**Figure A.3.1.7.1: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 2x2**



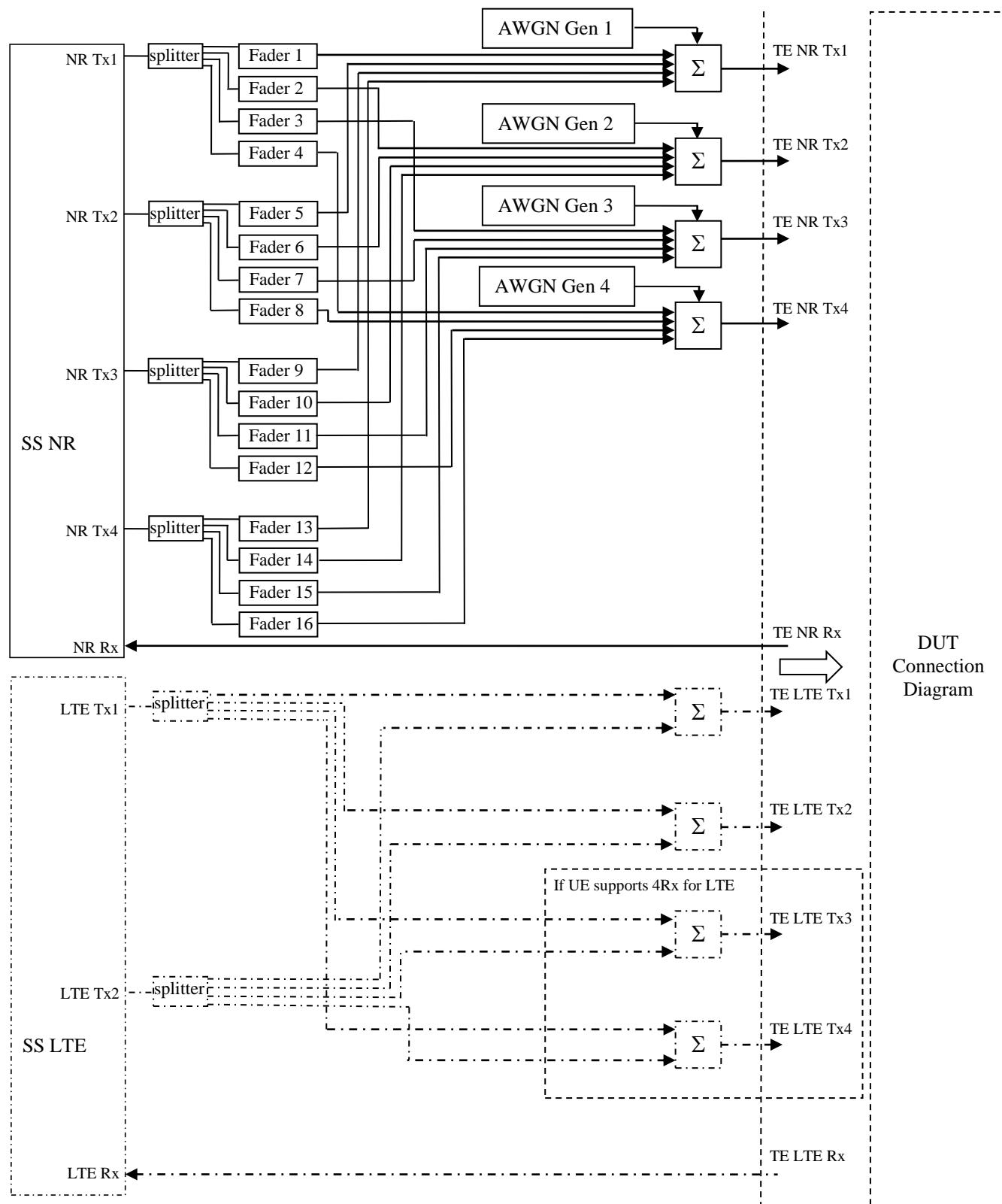
**Figure A.3.1.7.2: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 1x2**



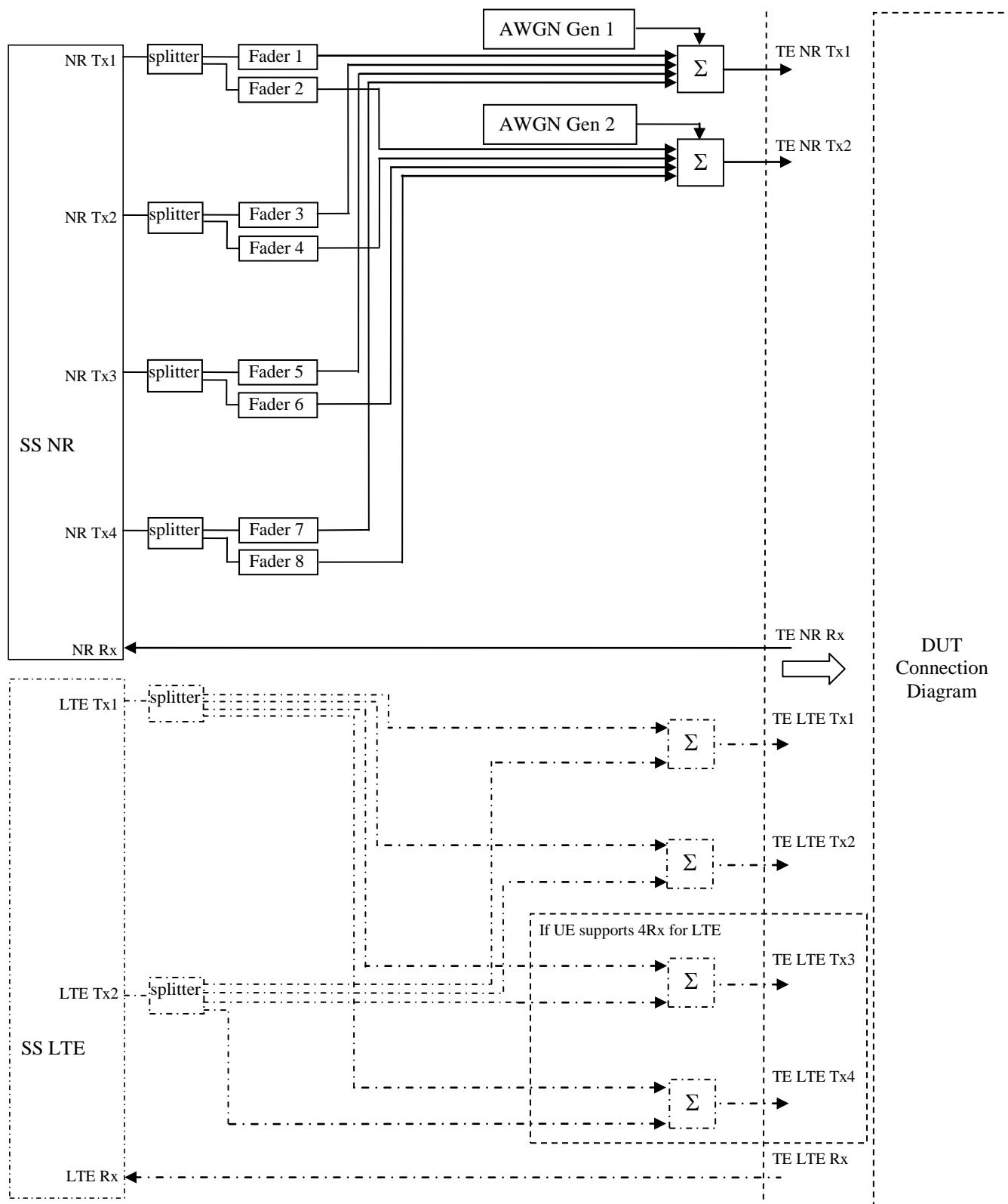
**Figure A.3.1.7.3: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 1x4**  
**(Note: LTE can be 2Rx or 4Rx and not dependent on NR #Rx)**



**Figure A.3.1.7.4: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 2x4**  
**(Note: LTE can be 2Rx or 4Rx and not dependent on NR #Rx)**



**Figure A.3.1.7.5: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 4x4**  
**(Note: LTE can be 2Rx or 4Rx and not dependent on NR #Rx)**

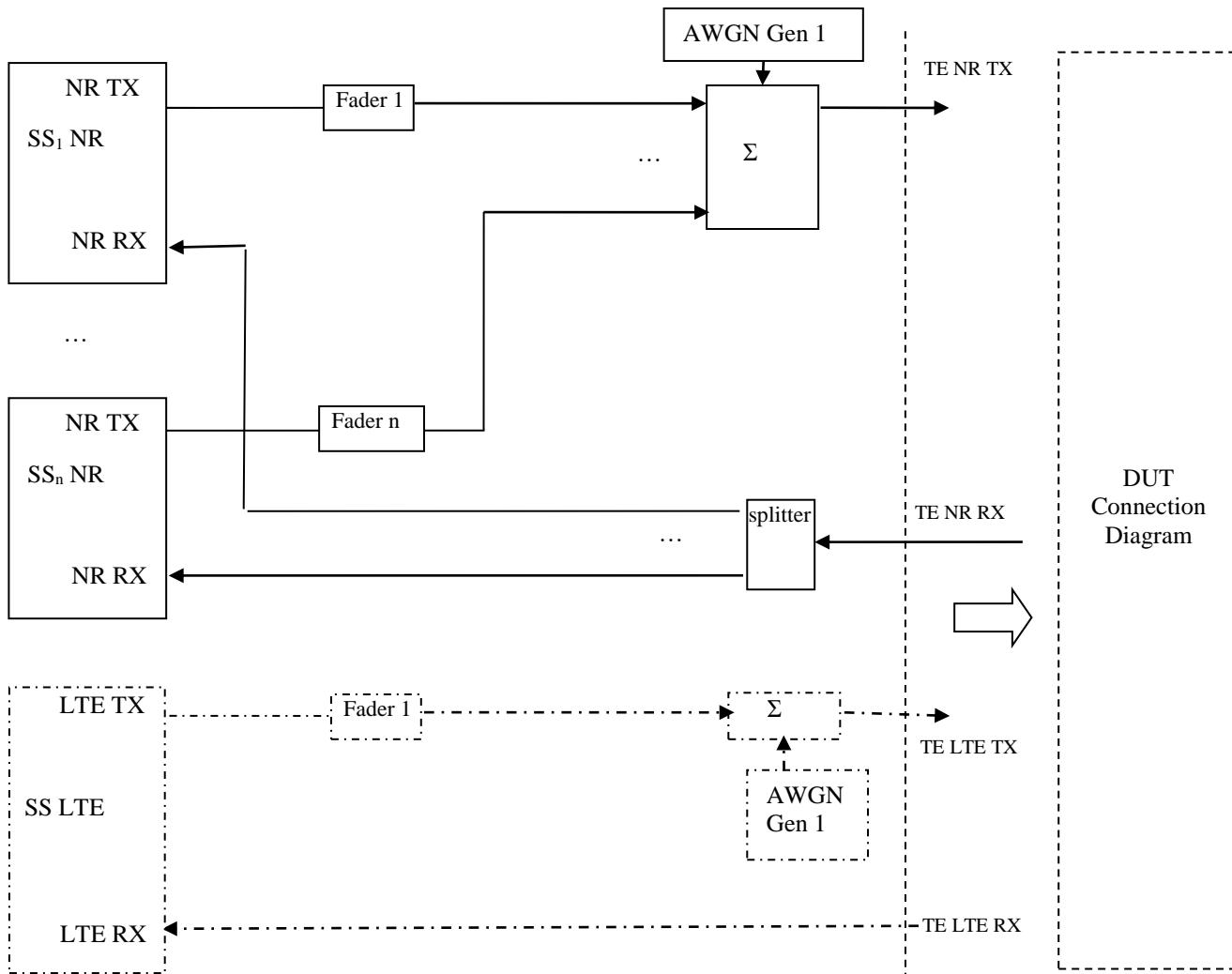


**Figure A.3.1.7.6: Test Equipment connection for Demodulation Performance and CSI reporting tests with antenna configuration 4x2**

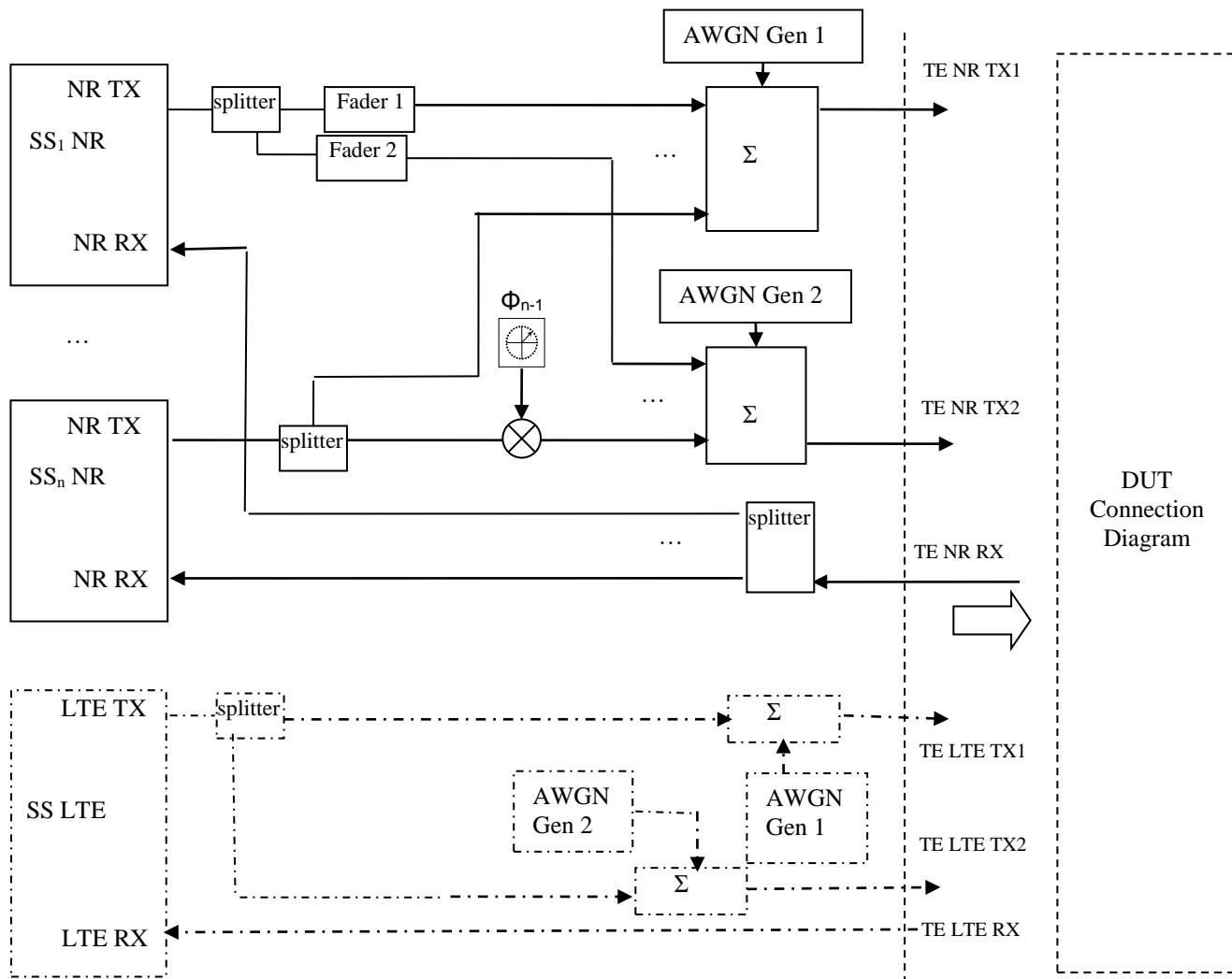
Note: LTE can be 2Rx or 4Rx and not dependent on NR #Rx.

### A.3.1.8 RRM tests with more than one NR cell

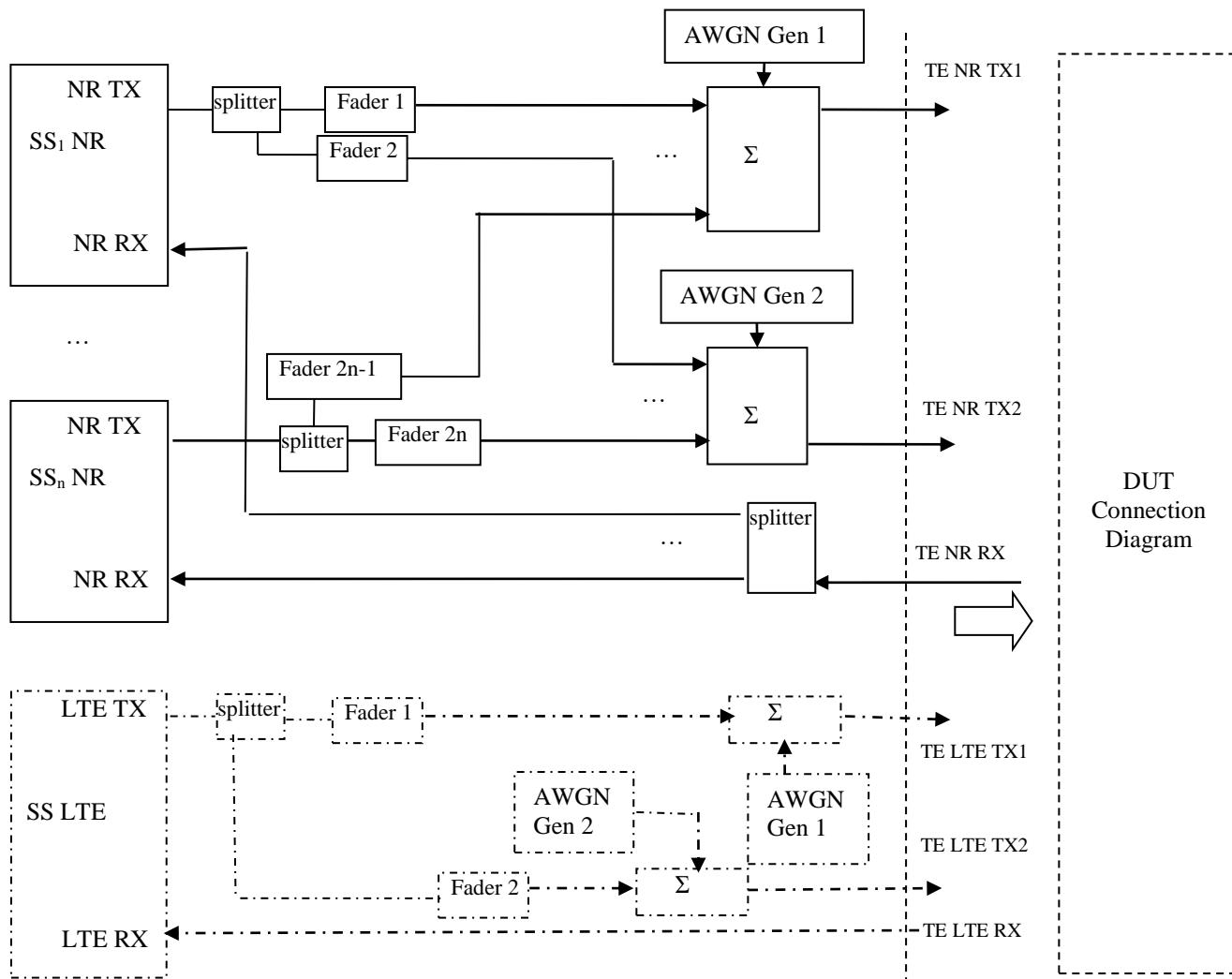
The figures in this section represent connection diagrams for test cases with more than one NR cell. The parameters in the connection diagram, e.g. the number of cells  $n$  or the value of the phase rotator  $\varphi_i$  shall be defined by the test cases.



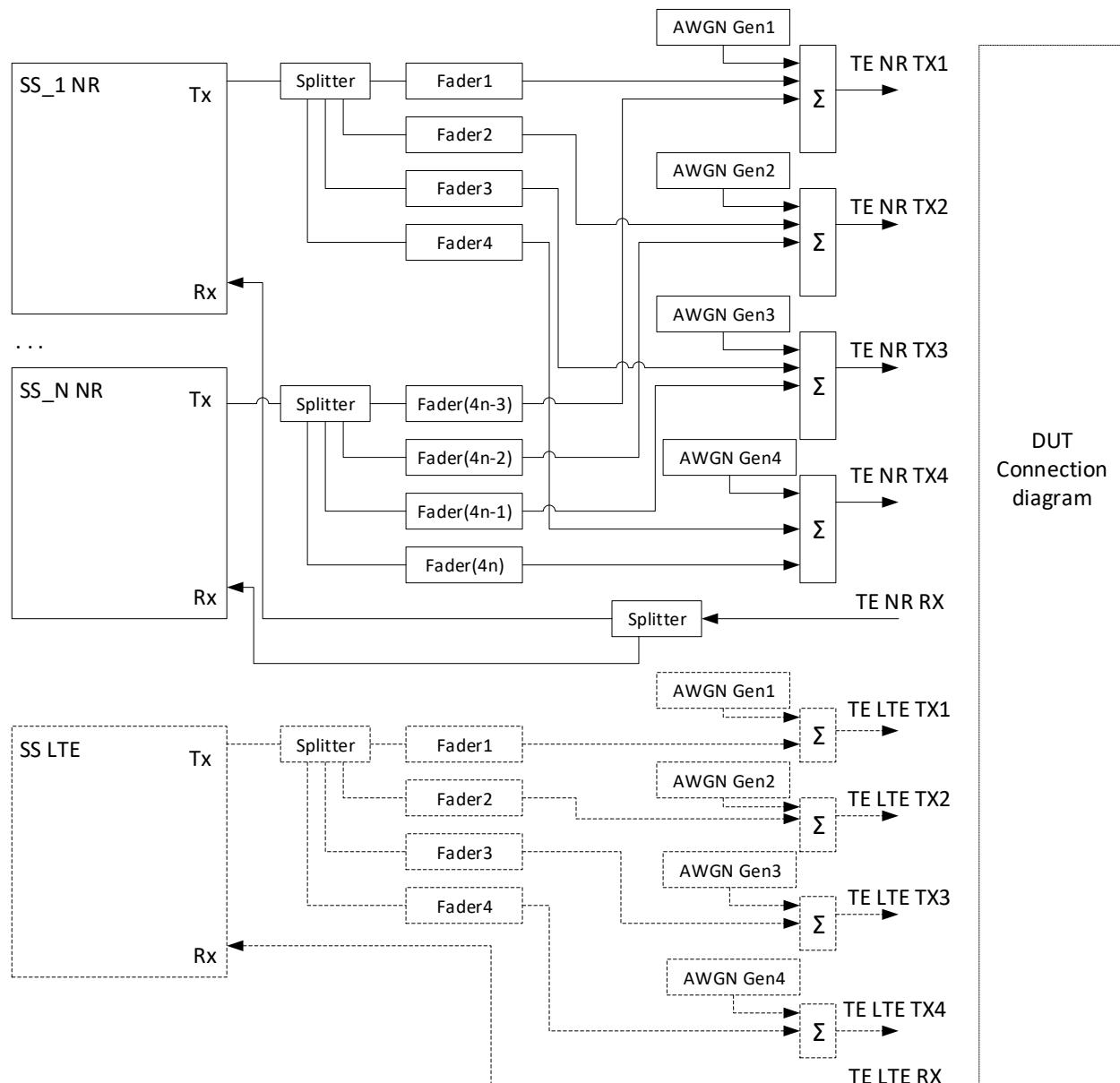
**Figure A.3.1.8.1: Test Equipment connection for tests with more than one NR cell and antenna configuration 1x1**



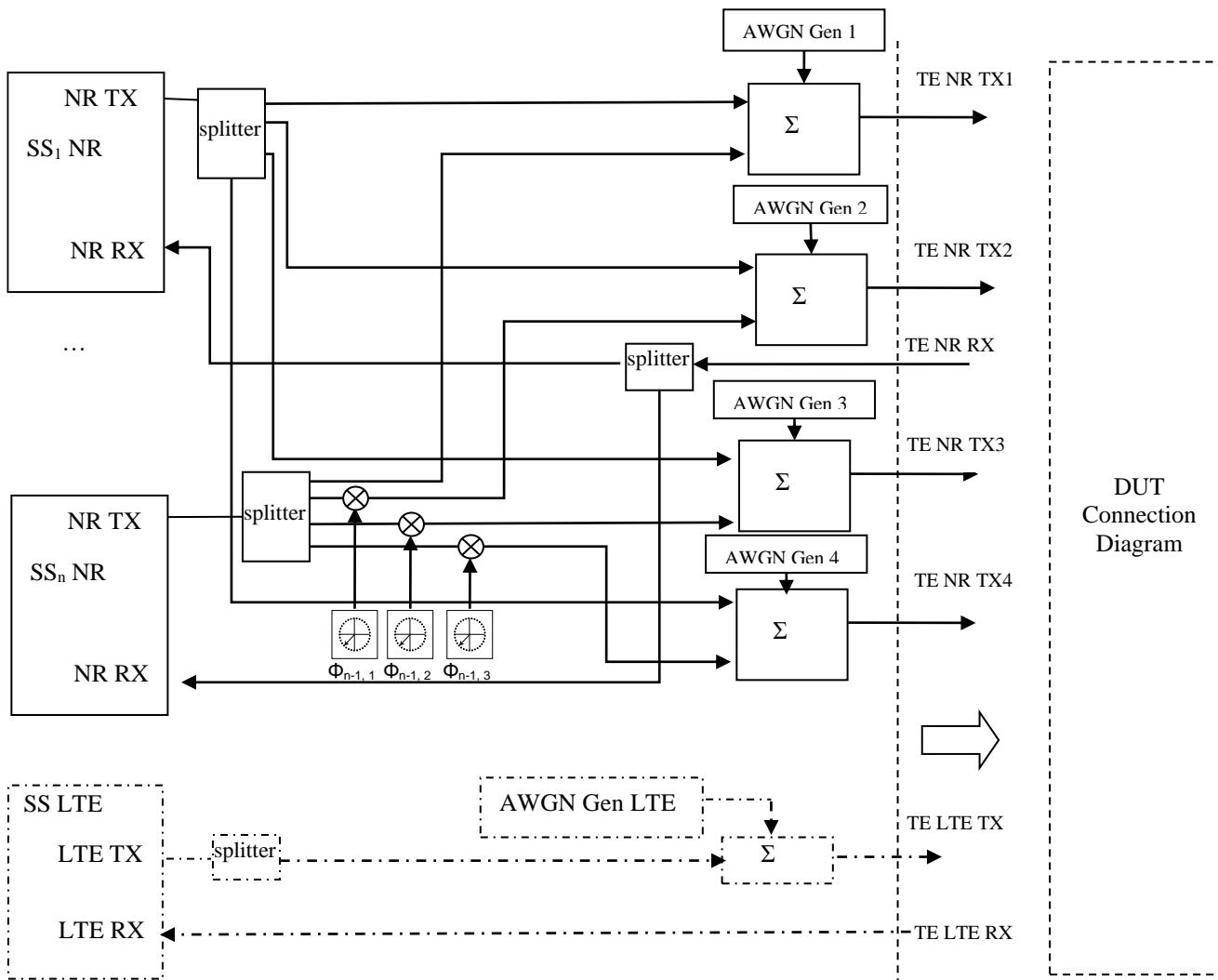
**Figure A.3.1.8.2: Test Equipment connection for tests with more than one NR cell and antenna configuration 1x2**



**Figure A.3.1.8.3: Test Equipment connection for tests with more than one NR cell and antenna configuration 1x2 and fading**



**Figure A.3.1.8.4: Test Equipment connection for tests with more than one NR cell for 4Rx capable UEs with fading**



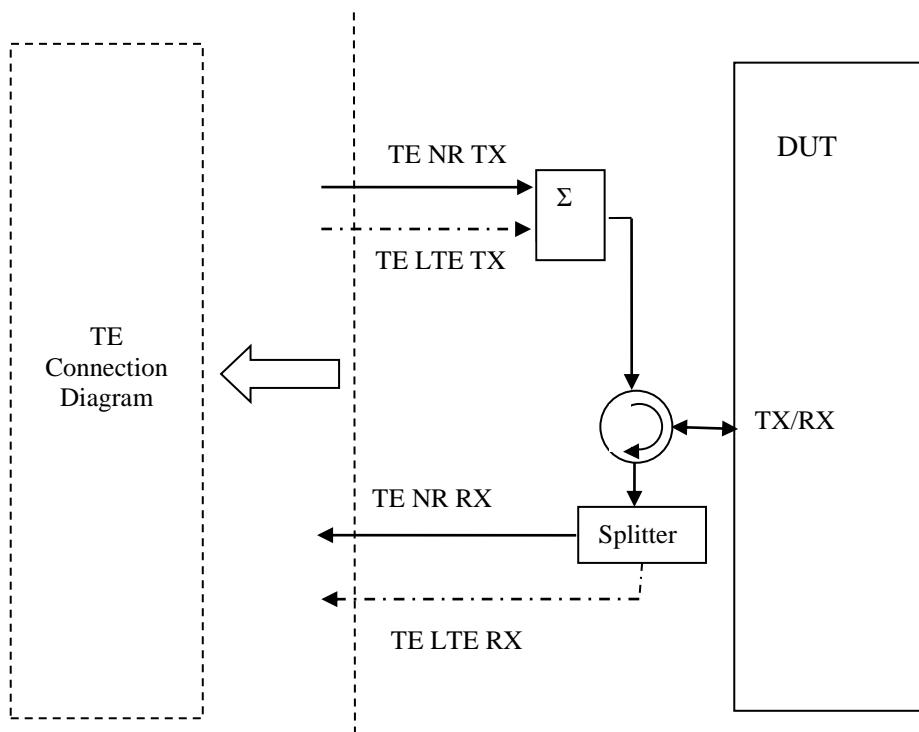
**Figure A.3.1.8.5: Test Equipment connection for tests with more than one NR cell and antenna configuration 1x4**

## A.3.2 User Equipment Parts for Conducted Measurements

### A.3.2.1 General

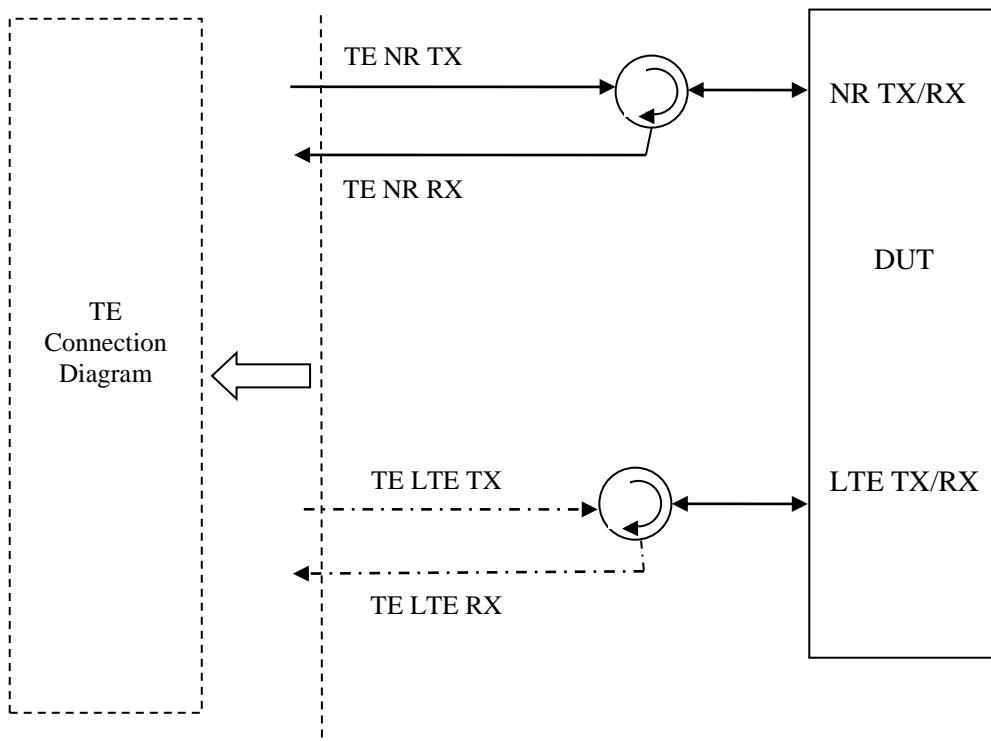
The User Equipment part is focused on the number of physical antenna connectors and how to combine in the DUT. Depending on the DUT implementation only one of the following connection diagrams applies. These connection diagrams are examples of User equipment parts.

### A.3.2.2 One Antenna Connector

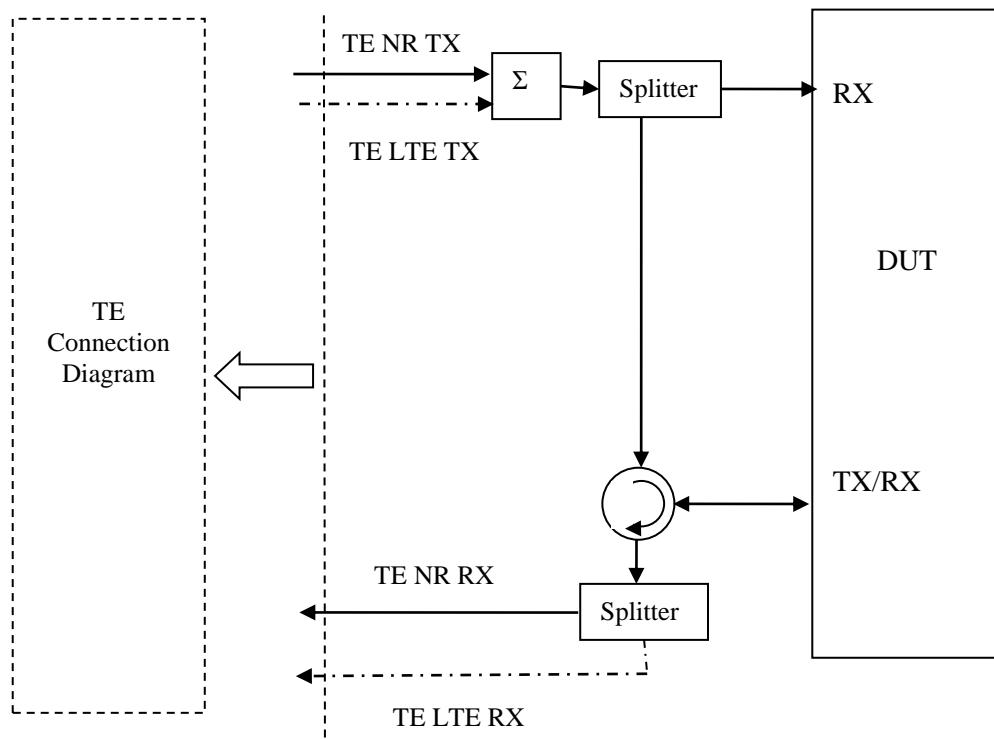


**Figure A.3.2.2.1: User Equipment connection for single basic cell**

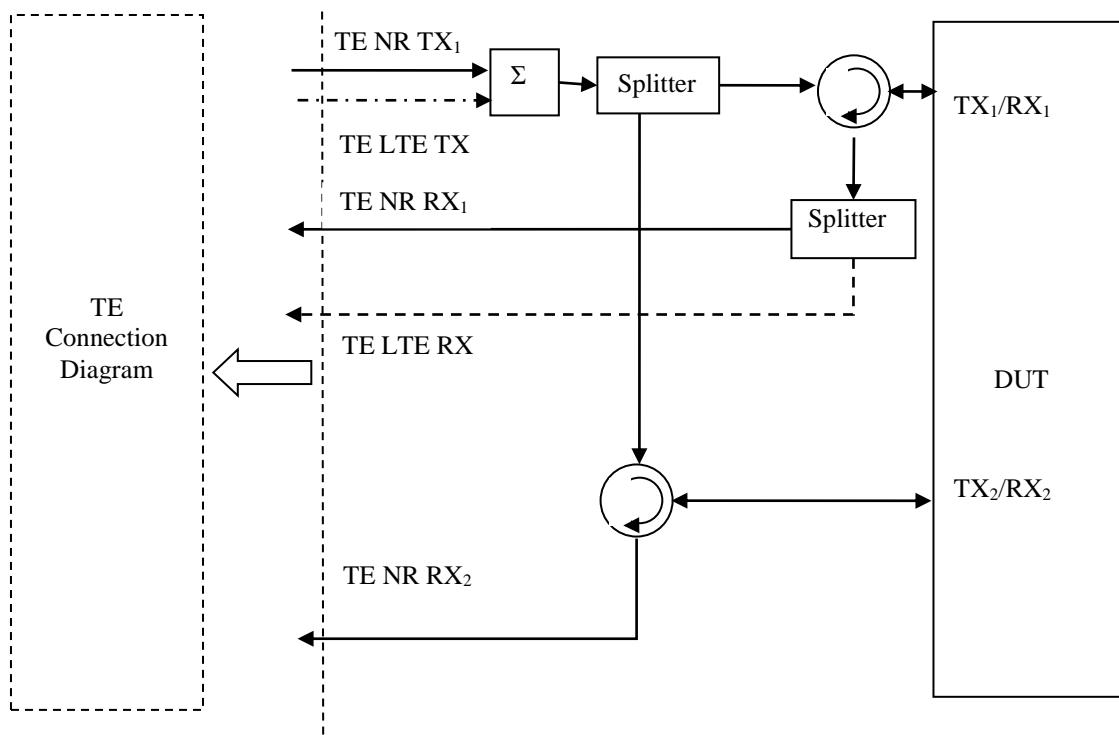
### A.3.2.3 Two Antenna Connectors



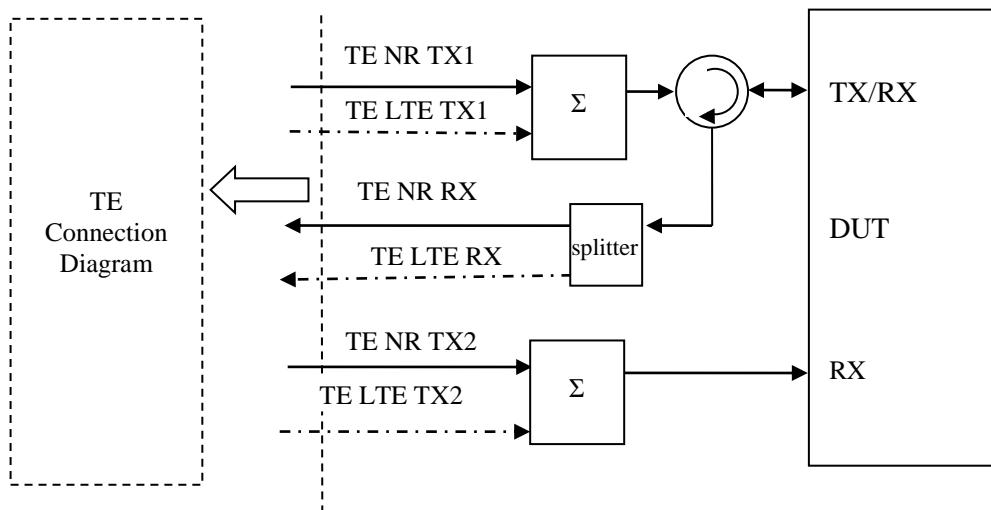
**Figure A.3.2.3.1: User Equipment connection for single basic cell with NR and LTE cells at different separated connectors**



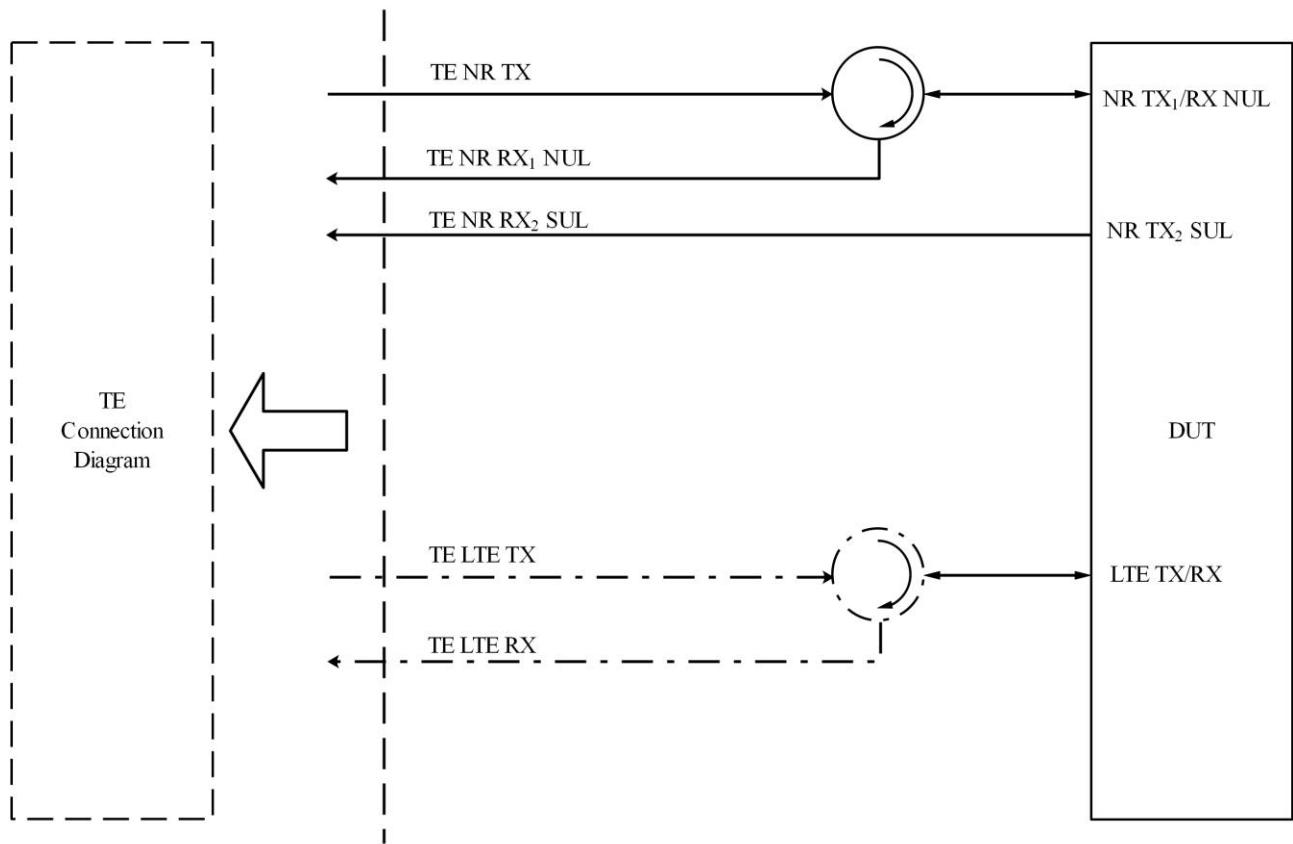
**Figure A.3.2.3.2: User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells**



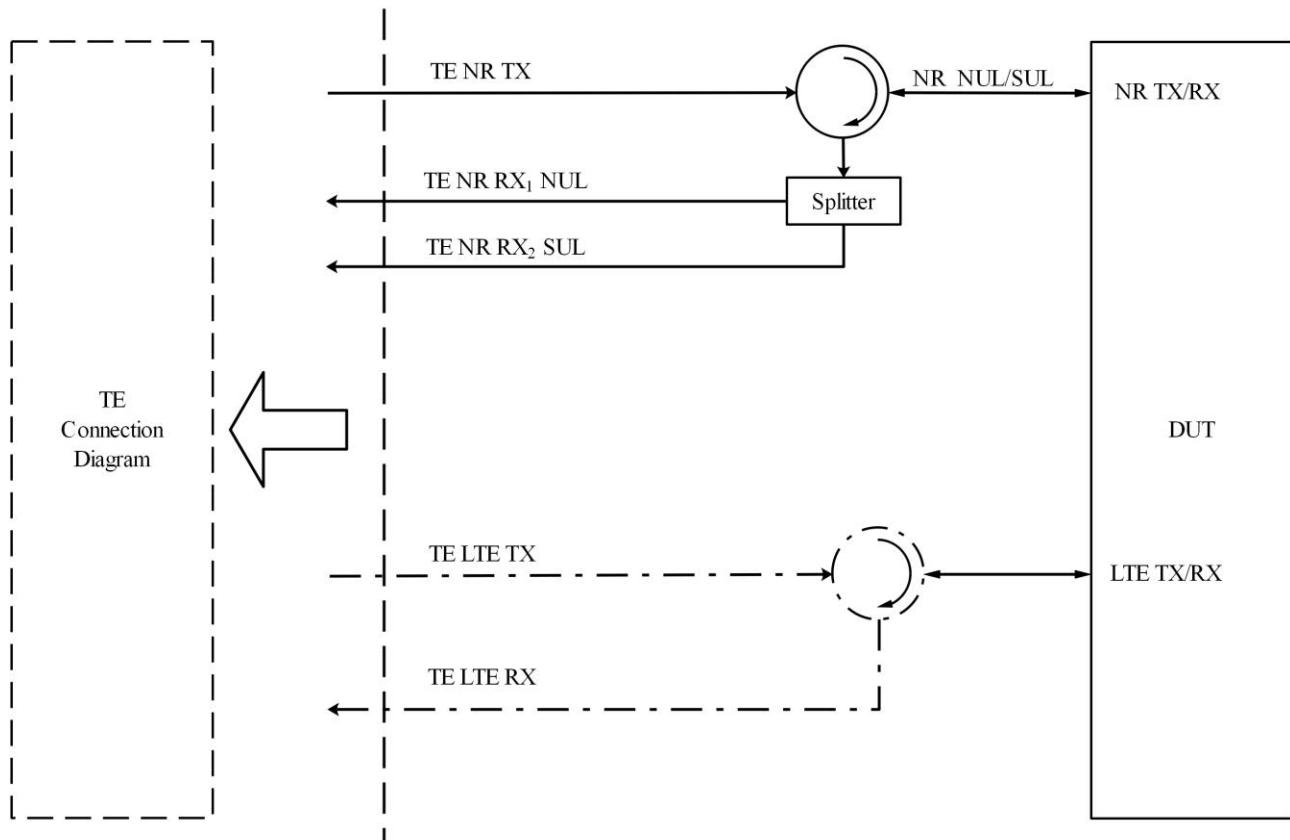
**Figure A.3.2.3.3: 2 Tx User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells and 2Tx UL MIMO supported**



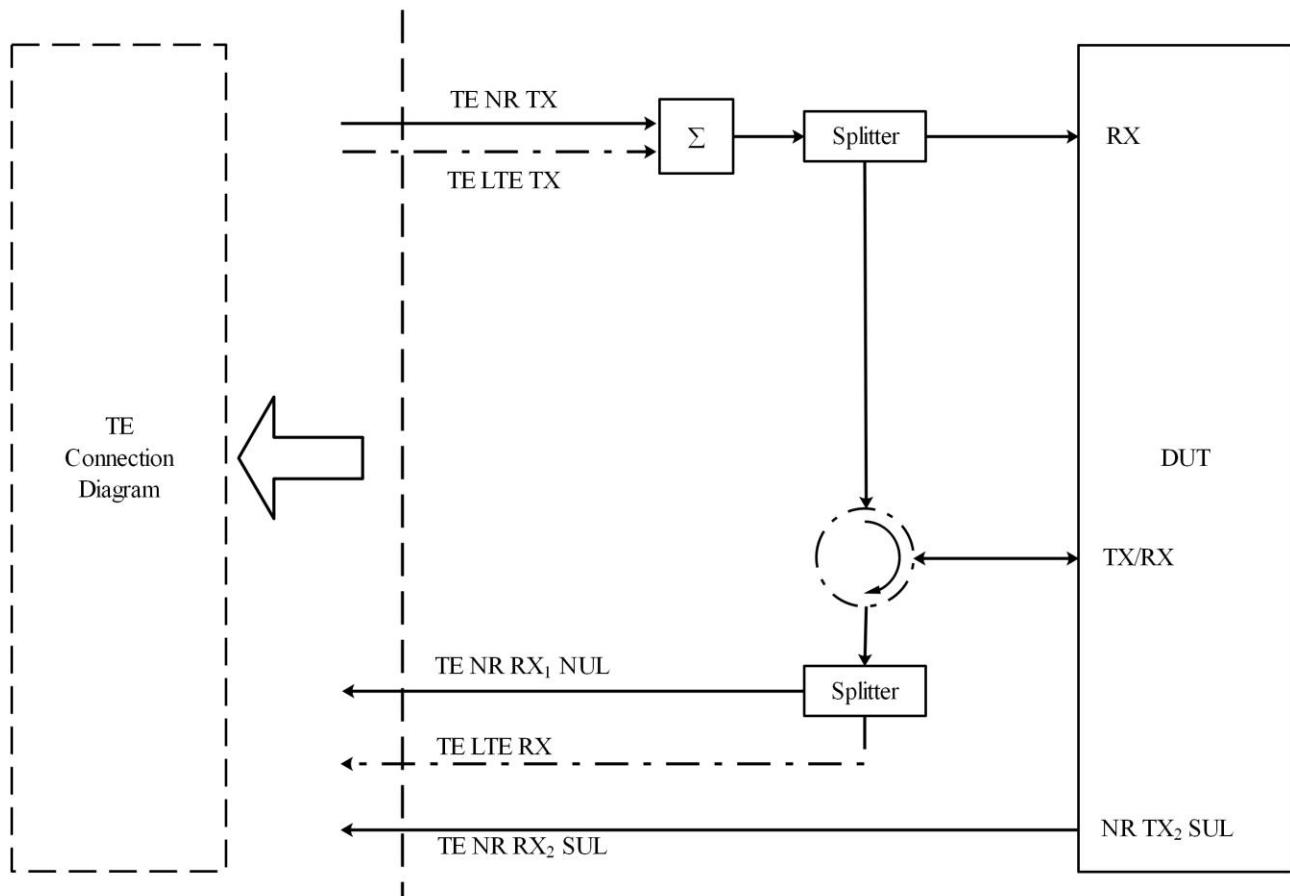
**Figure A.3.2.3.4: User Equipment connection for UEs with NR and LTE RxTx and Rx antenna at same connectors**



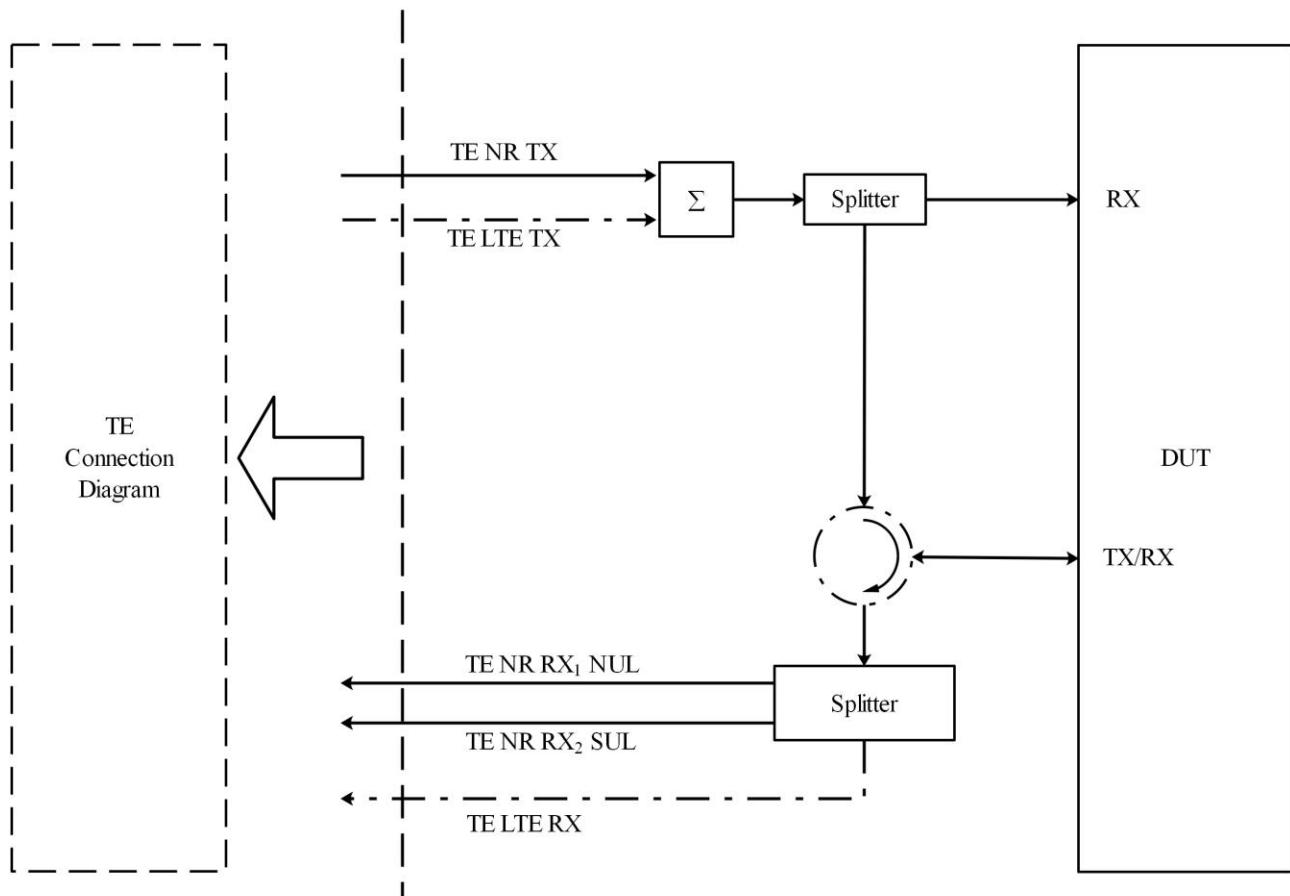
**Figure A.3.2.3.5: User Equipment connection for single basic cell with NR and LTE cells at different separated connectors with NR SUL and NR NUL transmitted on separate antenna connectors**



**Figure A.3.2.3.6: User Equipment connection for single basic cell with NR and LTE cells at different separated connectors with NR SUL and NR NUL transmitted on the same antenna connector**

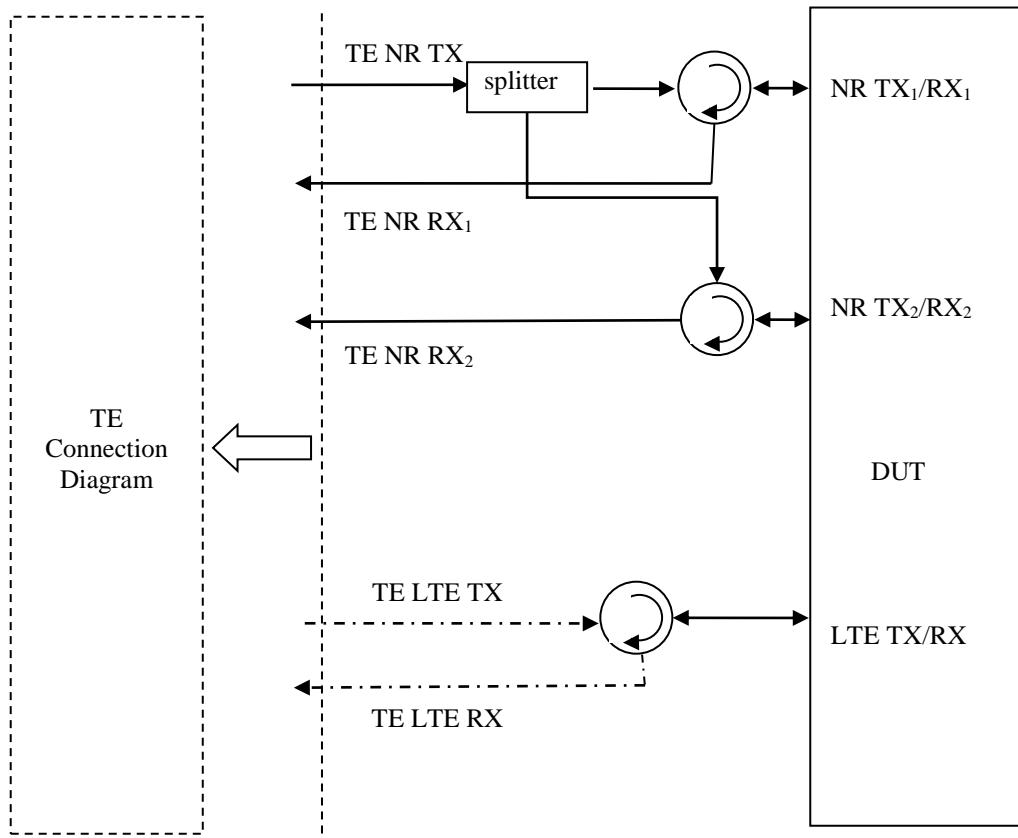


**Figure A.3.2.3.7: User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells with NR SUL and NR NUL transmitted on separate antenna connectors**



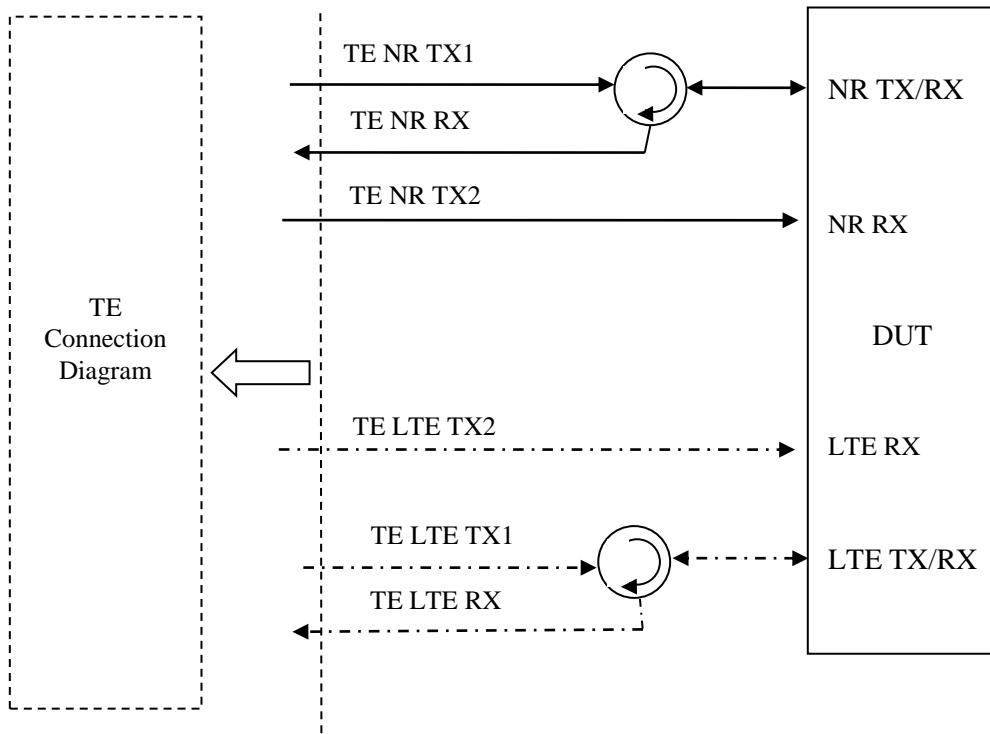
**Figure A.3.2.3.8: User Equipment connection for single basic cell with NR and LTE cells at the same connectors for both cells with NR SUL and NR NUL transmitted on the same antenna connector**

#### A.3.2.4 Three Antenna Connectors

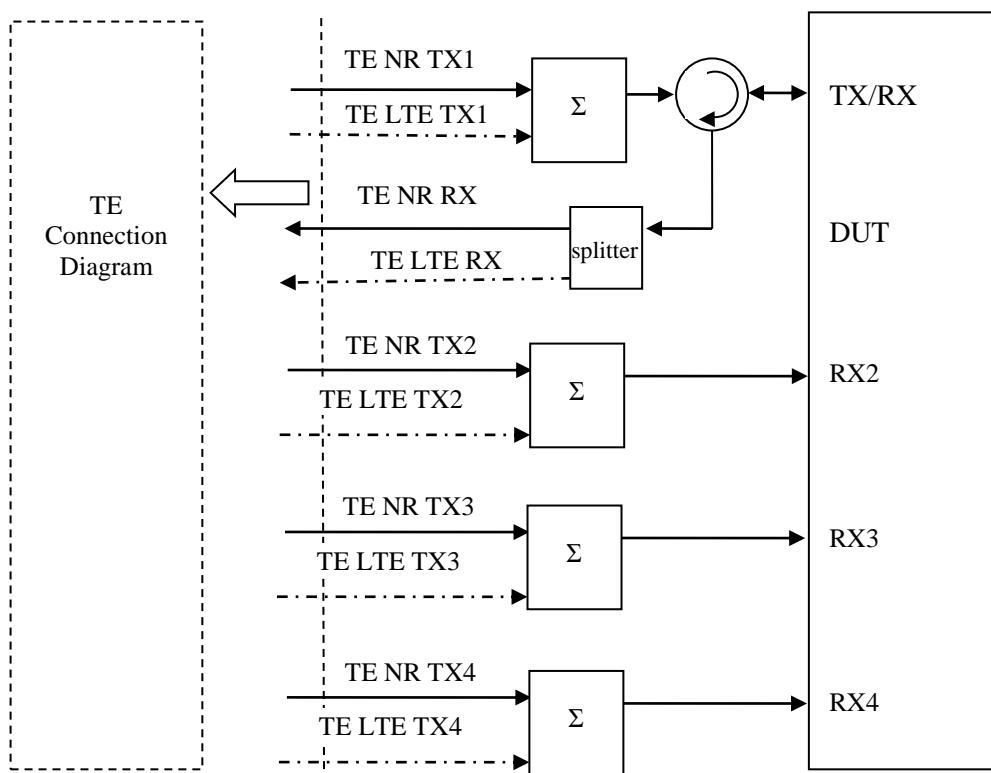


**Figure A.3.2.4.1: 2Tx User Equipment connection for single basic cell with NR and LTE cells at different separated connectors and 2TX UL MIMO supported**

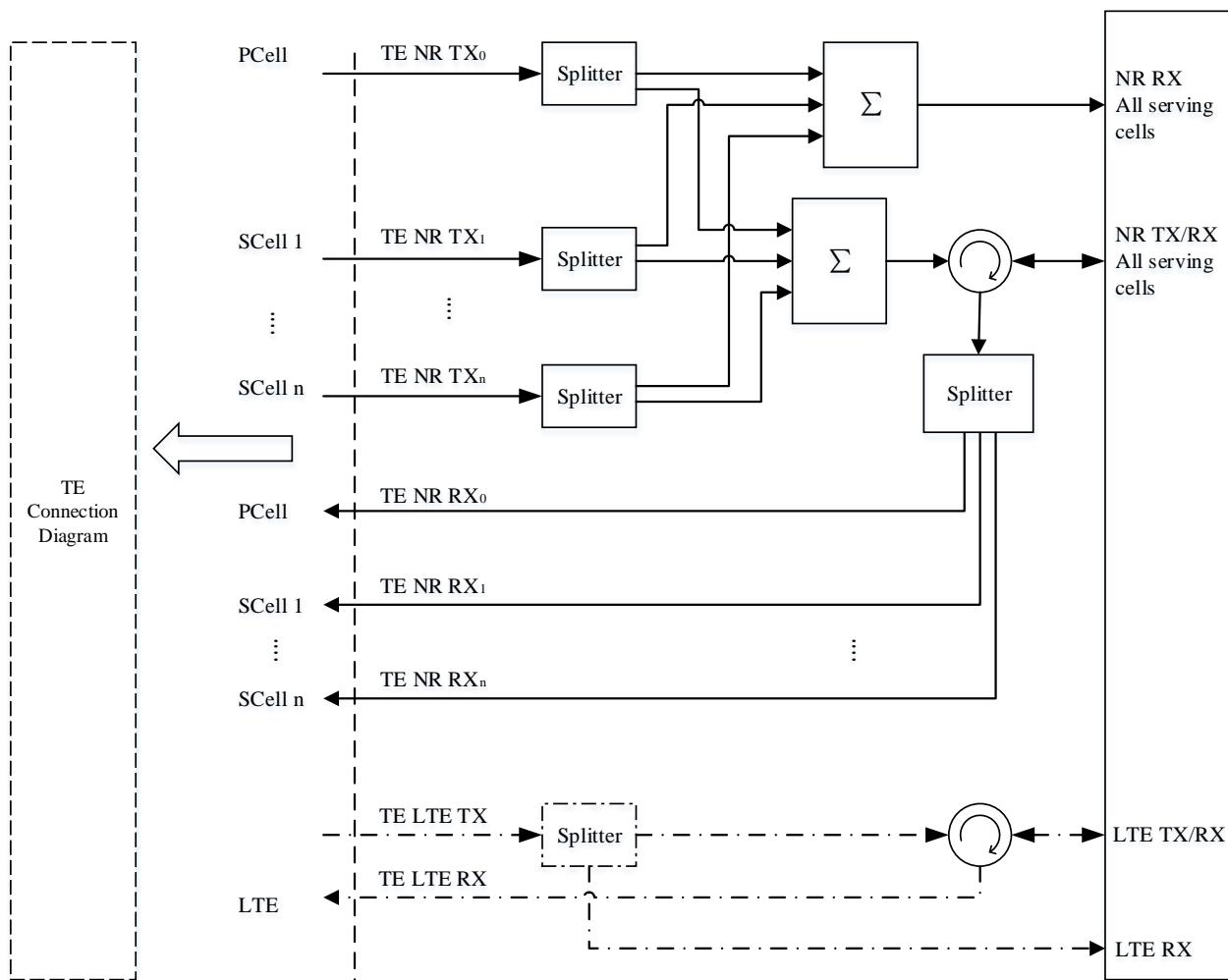
### A.3.2.5 Four Antenna Connectors



**Figure A.3.2.5.1: User Equipment connection for UEs with NR and LTE RxTx and Rx antenna at different separated connectors**

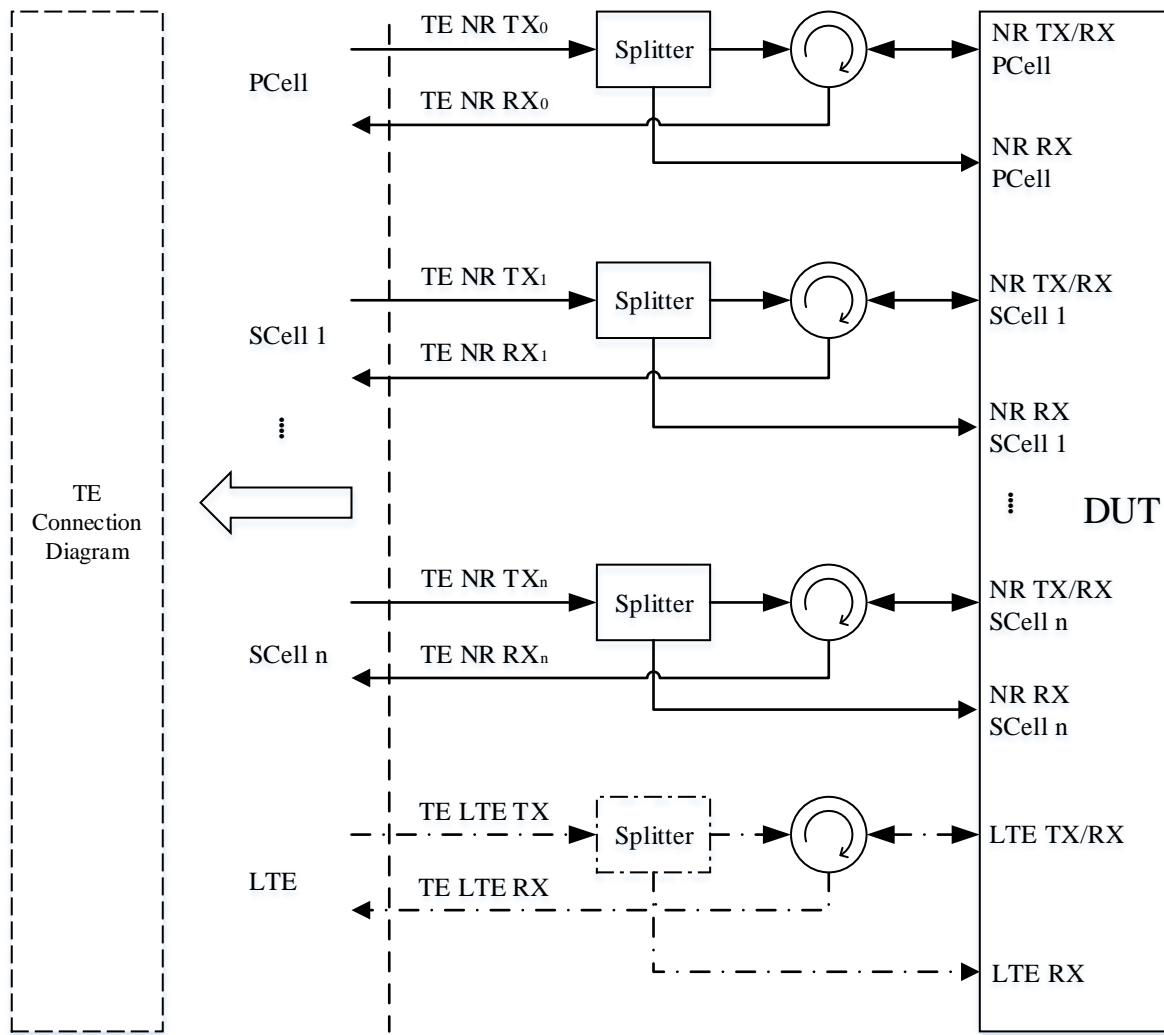


**Figure A.3.2.5.2: User Equipment connection for 4Rx capable UEs without any 2Rx RF bands (NR and LTE at same connectors)**

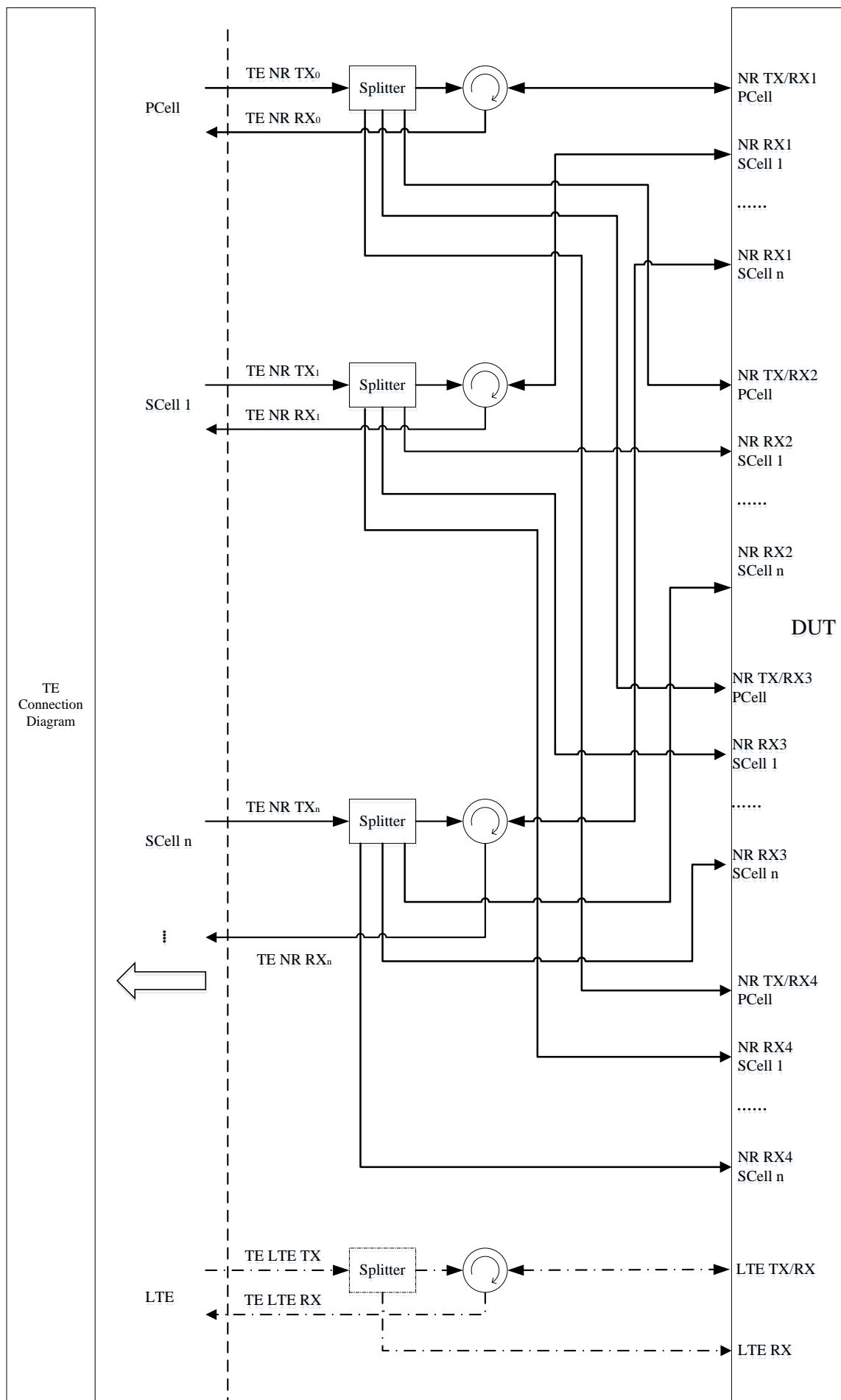


**Figure A.3.2.5.3: User Equipment connection for UEs with NR CA (component carriers on common connector) and LTE**

### A.3.2.6 Over Four Antenna Connectors



**Figure A.3.2.6.1: User Equipment connection for UEs with NR CA (component carriers on separated connectors) and LTE**



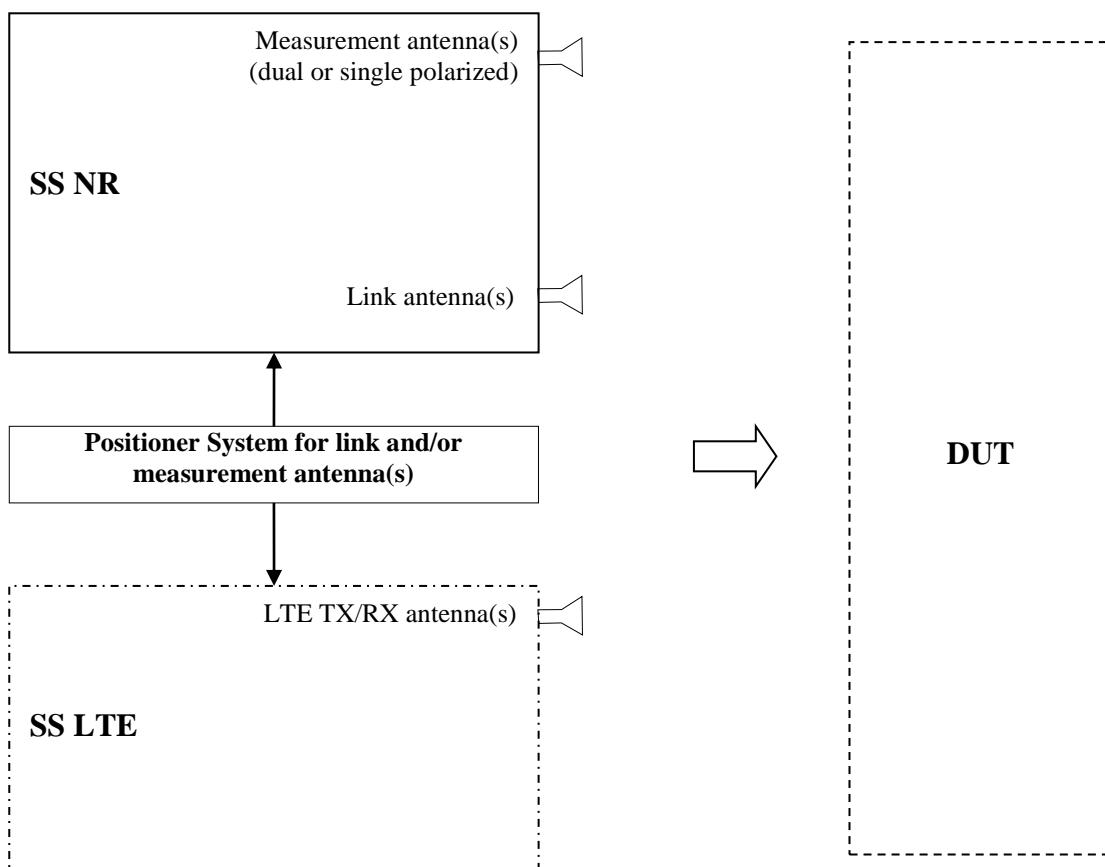
**Figure A.3.2.6.2: User Equipment connection for UEs with NR CA and NR 4Rx (component carriers on separated connectors) and LTE**

(Note: NR may be 2Rx on some of the CCs, in that case RX3 and RX4 are not used).

## A.3.3 Test Equipment Parts for Radiated Measurements

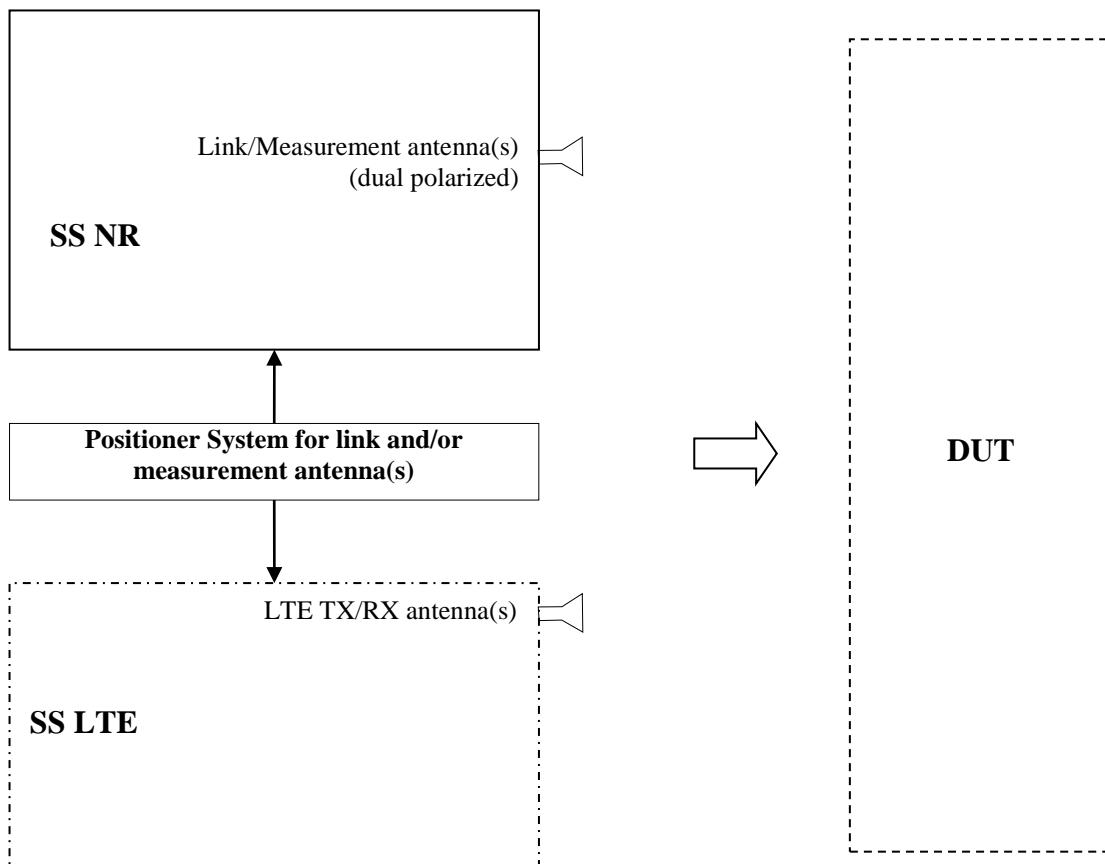
### A.3.3.1 Basic Transmitter/Receiver tests

The Test Equipment part is focused on logical representation of TE measurement and link antenna(s) and positioner controller. The Test Equipment connection diagram below is applicable for NR radiated RX and TX tests, including CA and UL MIMO tests.



**Figure A.3.3.1.1: TE diagram for radiated RX and TX tests**

### A.3.3.2 Demodulation and CSI tests



**Figure A.3.3.2.1: Demodulation and CSI tests**

### A.3.3.3 RRM tests

The Test Equipment part is focused on logical representation of TE antenna(s) and positioner. The Test Equipment connection diagram below is applicable for NR radiated RRM tests. SS NR uses several antennas to cover all required AoA offsets. The actual number of antennas is not determined and depends on the TE implementation. Positioner in the TE part is optional.

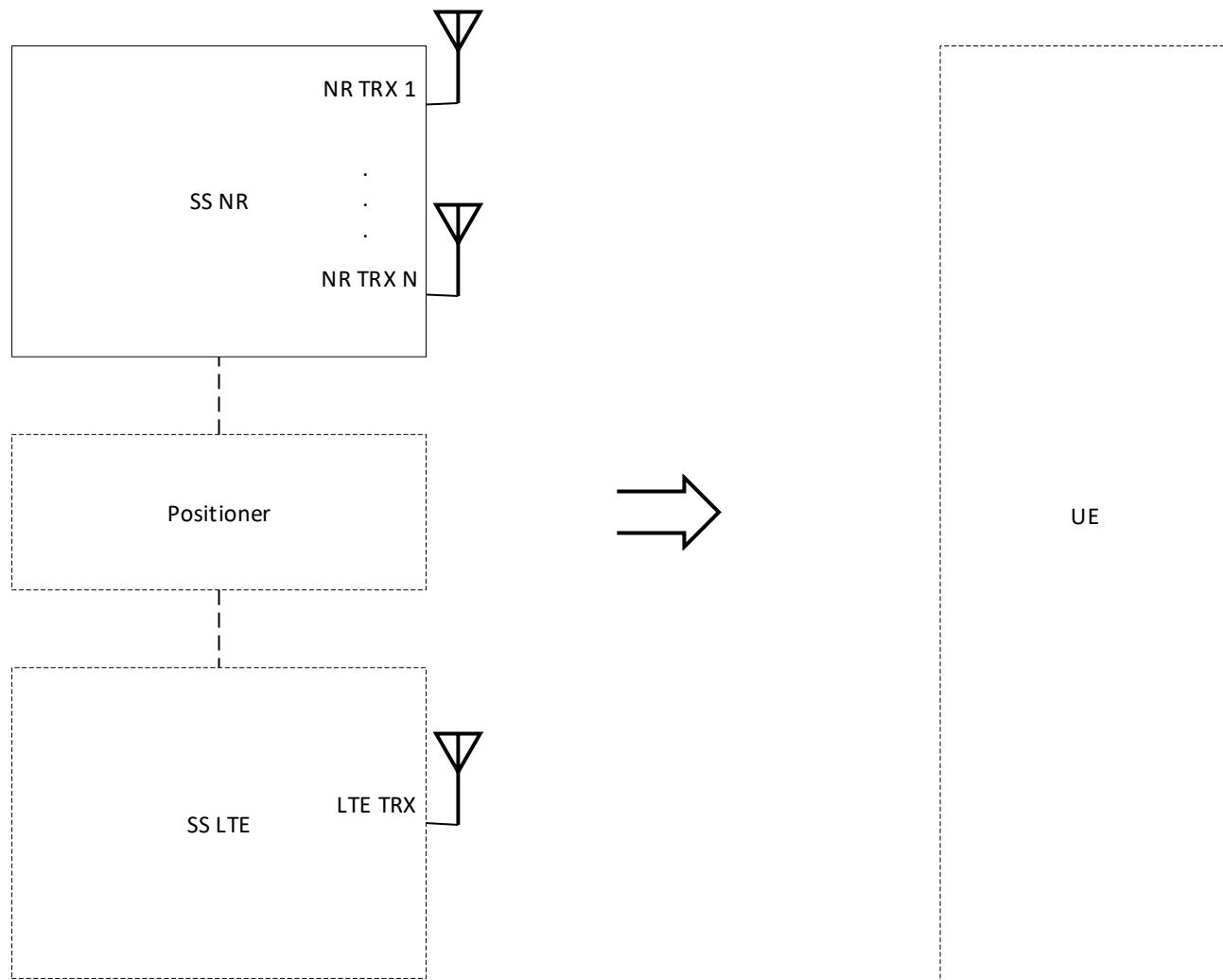
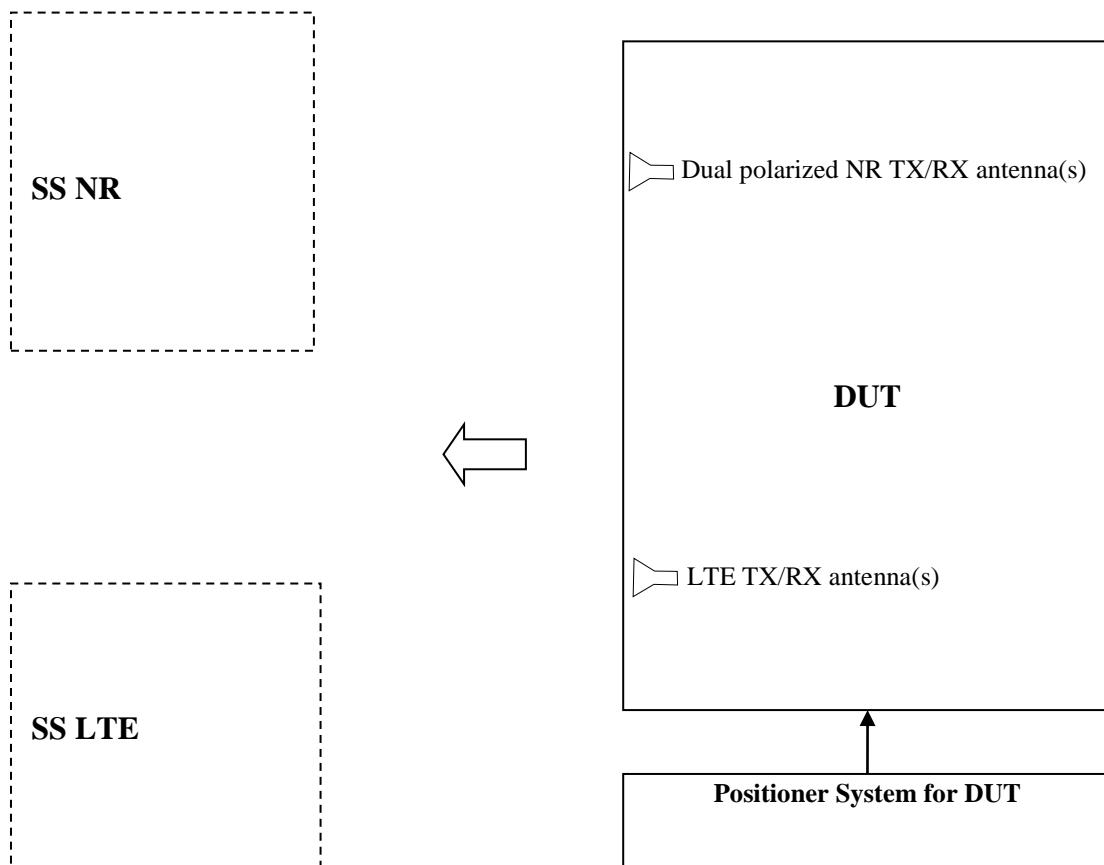


Figure A.3.3.3.1: TE diagram for radiated RRM tests

## A.3.4 User Equipment Parts for Radiated Measurements

### A.3.4.1 Basic Transmitter/Receiver tests

The User Equipment part is focused on logical representation of UE antenna(s), DUT positioner and positioner controller. The UE connection diagram below is applicable for NR radiated RX and TX tests, including CA and UL MIMO tests.



**Figure A.3.4.1.1: UE diagram for radiated RX and TX tests**

### A.3.4.2 Demodulation and CSI tests

Same as Figure A.3.4.1.1.

### A.3.4.3 RRM tests

Same as Figure A.3.4.1.1.

---

## Annex B (normative): Permitted test methods For OTA Testing

### B.1 General

**Editor's Note:** The working assumption is that the DFF or IFF: CATR based OTA test methodologies defined in Annexes B.2.2 and B.2.4 respectively should be used for Signalling test.

The applicability of the permitted test methods herein is defined by the appropriate references within clauses 5, 6, and 7. A summary of the applicability is shown in Table B.1-1.

**Table B.1-1: Permitted Test Methods Applicability Summary**

| FFS |
|-----|
|     |

---

### B.2 Permitted Test Methods

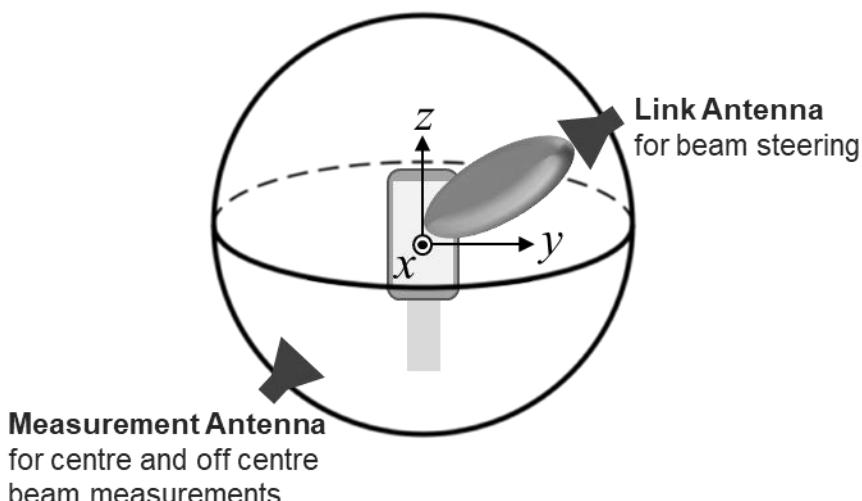
#### B.2.1 General

The main objective of this annex is to specify basic parameters of permitted OTA test methods suitable for RF Tx and Rx, Performance, and RRM measurements and Signalling Conformance tests performed at high frequency in the FR2 operating bands defined in clause 4.3.1.2. The applicability of each OTA test method is summarized in Table B.1-1.

#### B.2.2 Direct far field (DFF)

##### B.2.2.1 Description

The DFF measurement setup for FR2 is capable of centre and off-centre of beam measurements and is shown in Figure B.2.2.1-1 below.



**Figure B.2.2.1-1: DFF measurement setup**

The key aspects of the DFF setup are:

- Far-field measurement system in an anechoic chamber
  - The criterion for determining the far-field distance is described in B.2.2.4.
- A positioning system such that the angle between the dual-polarized measurement antenna and the DUT has at least two axes of freedom and maintains a polarization reference.
- A positioning system such that the angle between the link antenna and the DUT has at least two axes of freedom and maintains a polarization reference; this positioning system for the link antenna is in addition to the positioning system for the measurement antenna and provides for an angular relationship independently controllable from the measurement antenna.
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1 UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.

The applicability criteria of the DFF setup are:

- The DUT radiating aperture is  $D \leq 5$  cm
  - Either a single radiating aperture, multiple non-coherent apertures, or multiple coherent apertures DUTs can be tested
  - If multiple antenna panels that are phase coherent are defined as a single array, the criterion on DUT radiating aperture applies to this single array
  - $D$  is based on the MU assessment in Annex B.1.1.3 of TR 38.810 [24]
  - A measurement distance larger than the far-field criteria defined in B.2.2.4 is not precluded
  - If the uncertainties can be further optimized, the MU may be reduced or  $D$  may be increased
- A manufacturer declaration on the following elements is needed unless the entire DUT size is contained in a sphere of diameter of  $\leq 5$  cm:
  - Manufacturer declares antenna array size

## B.2.2.2 Quiet zone dimension

The quiet zone shall be large enough to fully contain the DUT. In order to allow testing of DUTs of various size and to allow for flexibility in test chamber implementations, there will be two defined quiet zone dimensions. The smaller quiet zone shall have a radius of 100mm to accommodate DUTs such as smartphones. The larger quiet zone shall have a radius of 150mm to accommodate larger DUTs such as tablets. The device types are listed as examples and other device types are not precluded. In either case, the DUT shall be fully contained in one of the quiet zone sizes defined herein.

## B.2.2.3 Quality of the quiet zone

The quality of the quiet zone shall be measured for the frequencies defined in FFS. The measured quality of the quiet zone performance is used in uncertainty calculations for the appropriate quality of the quiet zone dimension utilized for the DUT.

## B.2.2.4 Measurement Distance

For far-field measurements, the distance  $R$  between the DUT and the measurement antenna shall be calculated by the following equation.

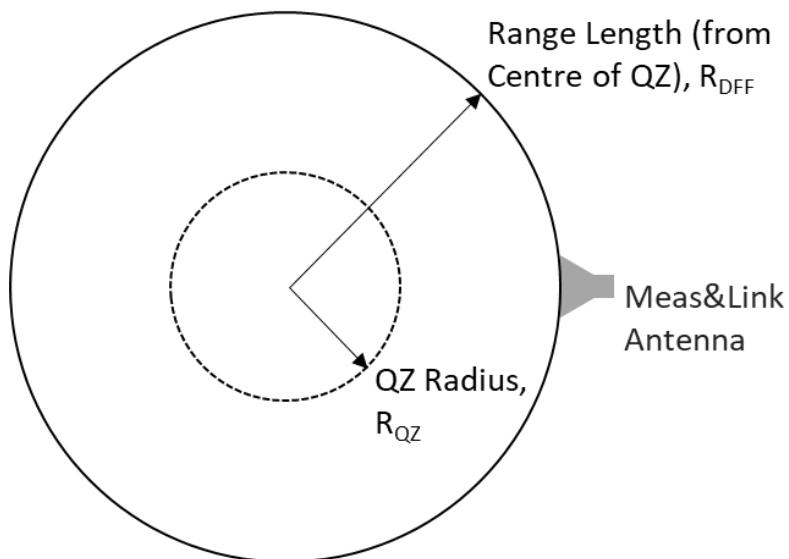
$$R > \frac{2D^2}{\lambda}$$

where  $\lambda$  is the largest wavelength within the frequency band of interest and  $D$  is the diameter of the smallest sphere that encloses the radiating parts of the DUT.

For DFF, free space path loss is calculated by applying the Free Space Loss formula with  $R$  equal to the far field

$$\text{distance: } \left( \frac{4\pi R}{\lambda} \right)^2$$

The minimum range length of a DFF system, i.e., the minimum distance between the centre of the quiet zone and the measurement antenna, needs to take into account the unknown offset of the antenna aperture from the centre of quiet zone in order to guarantee far-field conditions for any antenna array integrated inside the DUT. The distance between the centre of the quiet zone to the measurement antenna is referenced as  $R_{\text{DFF}}$ , while the radius of the quiet zone is  $R_{\text{QZ}}$  as illustrated in Figure B.2.2.4-1. The minimum distance between the antenna array integrated anywhere within the DUT and the measurement antenna needs to meet the far-field distance,  $R_{\text{FF}} = 2D^2/\lambda$ .

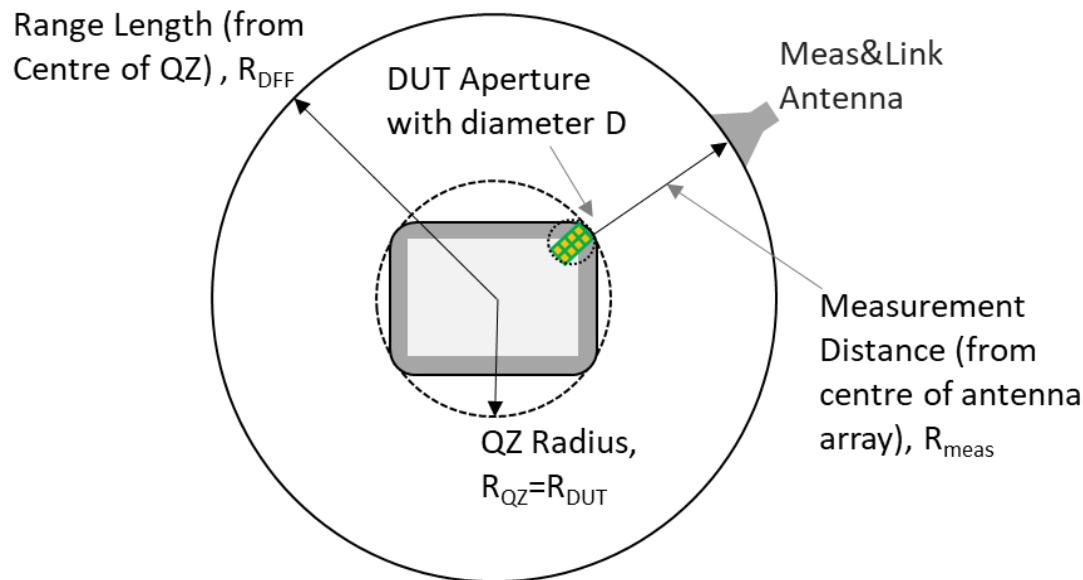


**Figure B.2.2.4-1: Illustration of DFF System for range length definition**

The setup in Figure B.2.2.4-2 is used to derive the minimum range length for NR FR2 DFF systems where the sphere enclosing the DUT matches the QZ and the DUT antenna with radiating aperture diameter  $D$  located in the corner of the DUT. With this setup, the minimum range length,  $R_{\text{DFF}}$ , can be determined as

$$R_{\text{DFF}} = R_{\text{QZ}} - D/2 + R_{\text{FF}} = R_{\text{QZ}} - D/2 + 2D^2/\lambda$$

which is tabulated in Table B.2.2.4-1 for two different QZ sizes assuming  $D=5\text{cm}$ .



**Figure B.2.2.4-2: Illustration of DFF System for minimum range length definition**

**Table B.2.2.4-1: Minimum Range Length of DFF System for  $D = 5\text{cm}$**

| $f[\text{GHz}] \backslash QZ [\text{cm}]$ | 24.25 | 30   | 40   | 50   | 52.6 |
|---|-------|------|------|------|------|
| 20  | 0.48  | 0.58 | 0.74 | 0.91 | 0.95 |
| 30  | 0.53  | 0.63 | 0.79 | 0.96 | 1.00 |

The influence of measurement distance on measurement uncertainty is discussed in Annex B.2.1 of TR 38.903 [XX].

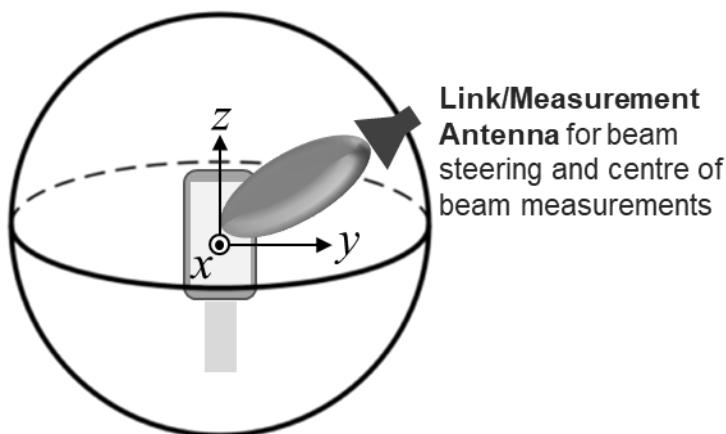
## B.2.3 Direct far field (DFF) setup simplification for centre of beam measurements

### B.2.3.1 Description

The DFF setup in Annex B.2.2 can be simplified in the following way to perform centre of the beam measurements:

- The measurement and the link antenna can be combined so that the single antenna is used to steer the beam and to perform UE measurements.

The measurement setup for FR2 capable of centre of beam measurements is shown in Figure B.2.3.1-1 below.



**Figure B.2.3.1-1: DFF simplification for centre of beam measurement setup**

The applicability criteria of the simplified DFF setup for centre of beam measurements are defined in B.2.2.1.

### B.2.3.2 Quiet zone dimension

Same as Annex B.2.2.2.

### B.2.3.3 Quality of the quiet zone

Same as Annex B.2.2.3.

### B.2.3.4 Measurement Distance

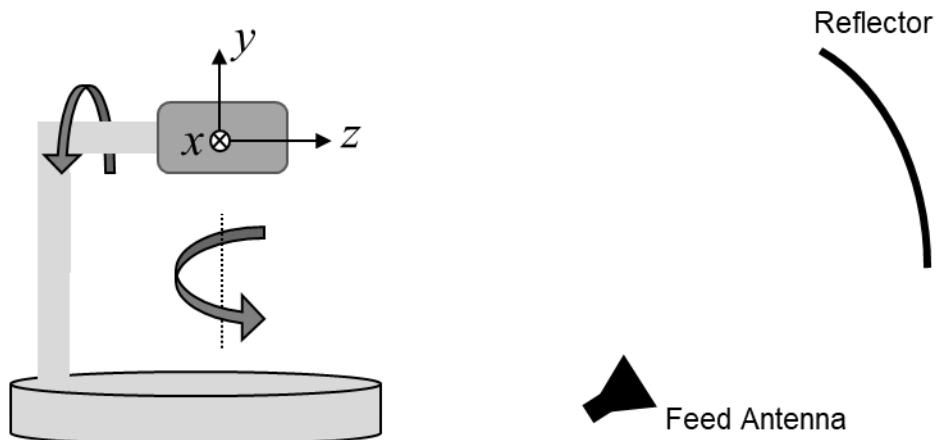
Same as Annex B.2.2.4.

## B.2.4 Indirect far field (IFF): Compact Antenna Test Range (CATR)

### B.2.4.1 Description

The IFF method utilizing a compact antenna test range (CATR) creates the far field environment using a transformation with a parabolic reflector.

The IFF CATR measurement setup for FR2 is capable of centre and off-centre of beam measurements and an example setup is shown in Figure B.2.4.1-1 below. The relative orientation of the coordinate system with respect to the reflector and the axes of rotation apply to any CATR measurement setup.



**Figure B.2.4.1-1: Example of IFF: CATR measurement setup**

The key aspects of this test method setup are:

- Indirect Far Field using Compact Antenna Test Range as described in TR 38.810 [24] with quiet zone diameter that meets the requirements of B.2.4.2.
- A positioning system such that the angle between the dual-polarized measurement antenna and the DUT has at least two axes of freedom and maintains a polarization reference.
- Before performing the UE Beamlock Test Function as defined in clause 4.9.2, the measurement probe acts as a link antenna maintaining polarization reference with respect to the DUT. Once the beam is locked then the link is to be passed to the link antenna which maintains reliable signal level with respect to the DUT.
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.

The applicability criteria of this test method are:

- The total test volume, i.e., the quiet zone is defined as a sphere with radius R.
- DUT must fit within the quiet zone for the entire duration of the test.
- Either a single radiating aperture, multiple non-coherent apertures or multiple coherent apertures DUTs can be tested.
- No manufacturer declaration of the antenna array size is needed.

## B.2.4.2 Quiet zone dimension

Same as Annex B.2.2.2.

## B.2.4.3 Quality of the quiet zone

Same as Annex B.2.2.3.

### B.2.4.4 Measurement Distance

The CATR system does not require a measurement distance of  $R > \frac{2D^2}{\lambda}$  to achieve a plane wave as in a standard far field range.

For the CATR system, the far-field distance is seen as the focal length. The focal length is the distance between the feed and the reflector of the CATR. Further information on the focal length of a CATR system can be found in clause 5.2.3.2 of TR 38.810 [24].

The measurement distance for any CATR system implementation shall be adequate to meet the quiet zone dimensions defined in B.2.4.2.

In a CATR, from the reflector to the quiet zone, there is a plane wave with no free space path loss.

For CATR, free space path loss is calculated by applying the Free Space Loss formula with  $R$  equal to the far field distance based on the focal length:  $\left(\frac{4\pi R}{\lambda}\right)^2$ .

A summary of the comparison of path losses which can be expected for the CATR compared to a Fraunhofer limit distance ( $R > \frac{2D^2}{\lambda}$ ) for different antenna sizes and frequencies can be found in clause 5.2.3.2 of TR 38.810 [24].

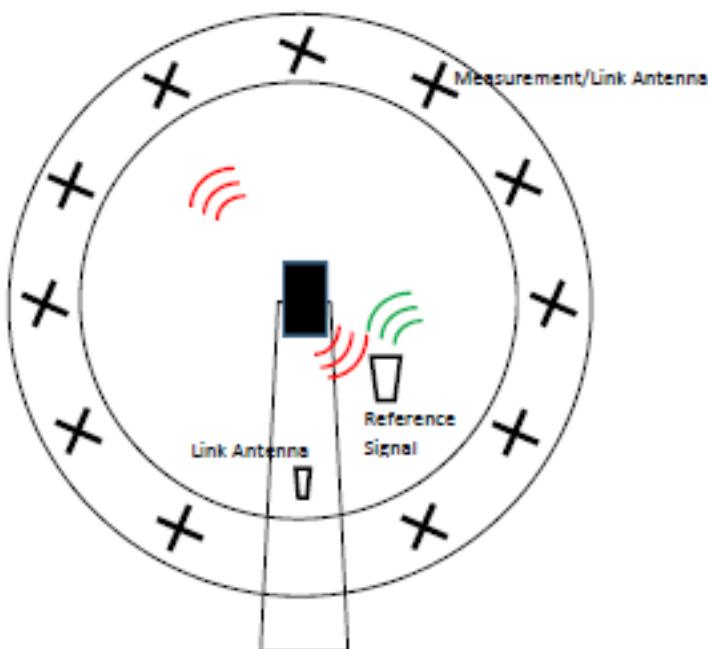
The influence of measurement distance on measurement uncertainty can be considered as zero as defined in Annex B.2.2 of TR 38.903 [XX].

### B.2.5 Near field to far field transform (NFTF)

#### B.2.5.1 Description

The NFTF method computes the metrics defined in Far Field by using the Near Field to Far Field transformation.

The NFTF measurement setup of UE RF characteristics for FR2 is capable of centre and off centre of beam measurements and an example setup is shown in Figure B.2.5.1-1:



**Figure B.2.5.1-1: Example of NFTF measurement setup**

The key aspects of the Near Field test range are:

- Radiated Near Field UE beam pattern is measured and based on the NFTF mathematical transform, the final metric such as EIRP is the same as the metric for the baseline setup
- A positioning system such as the angle between the dual-polarized measurement/link antenna and the DUT has at least two axes of freedom and maintains a polarization reference
- For setups intended for measurements of UE RF characteristics in non-standalone (NSA) mode with 1UL configuration, an LTE link antenna is used to provide the LTE link to the DUT. The LTE link antenna provides a stable LTE signal without precise path loss or polarization control.
- For setups intended for measurements in NR CA mode with FR1 and FR2 inter-band NR CA, test setup provides NR FR1 link to the DUT. The NR FR1 link has a stable and noise-free signal without precise path loss or polarization control.

The applicability criteria of the NFTF setup are:

- The DUT radiating aperture is  $D \leq 5$  cm
- Either a single radiating aperture, multiple non-coherent apertures or multiple coherent apertures DUTs can be tested
- If multiple antenna panels that are phase coherent are defined as a single array, the criterion on DUT radiating aperture applies to this single array
- $D$  is based on the MU assessment in Annex B.1.4.3 of TR 38.810 [24]
- If the uncertainties can be further optimized, the MU may be reduced or  $D$  may be increased
- A manufacturer declaration on the following elements is needed unless the entire DUT size is contained in a sphere of diameter of  $\leq 5$  cm:
  - Manufacturer declares antenna array size
- EIRP, TRP, and spurious emissions metrics can be tested.

### B.2.5.2 Quiet zone dimension

Same as Annex B.2.2.2.

### B.2.5.3 Quality of the quiet zone

Same as Annex B.2.2.3.

### B.2.5.4 Measurement Distance

The NFTF system does not require a measurement distance of  $R > \frac{2D^2}{\lambda}$  as in a standard far field range due to the use of the Near Field to Far Field transformation.

The measurement distance for any NFTF system implementation shall ensure that the DUT is not measured in the reactive near-field region and is adequate to meet the quiet zone dimensions defined in B.2.5.2.

---

## Annex C (informative): Calculation of test frequencies

### C.0 General

Test frequencies are defined in clause 4.3.1 with extensions for signalling test cases in clause 6.2.3. This annex gives a guideline to determine these test frequencies and the associated signalling parameters for a given NR band, NR CA or NR DC band combination.

Clause C.1 describes definitions and parameters used by the procedures to determine test frequencies, SS/PBCH Block (SSB) and CORESET#0 configuration parameters.

Clause C.2 describes how to calculate test frequencies for symmetric NR bands, asymmetric NR bands, NR CA and NR DC configurations.

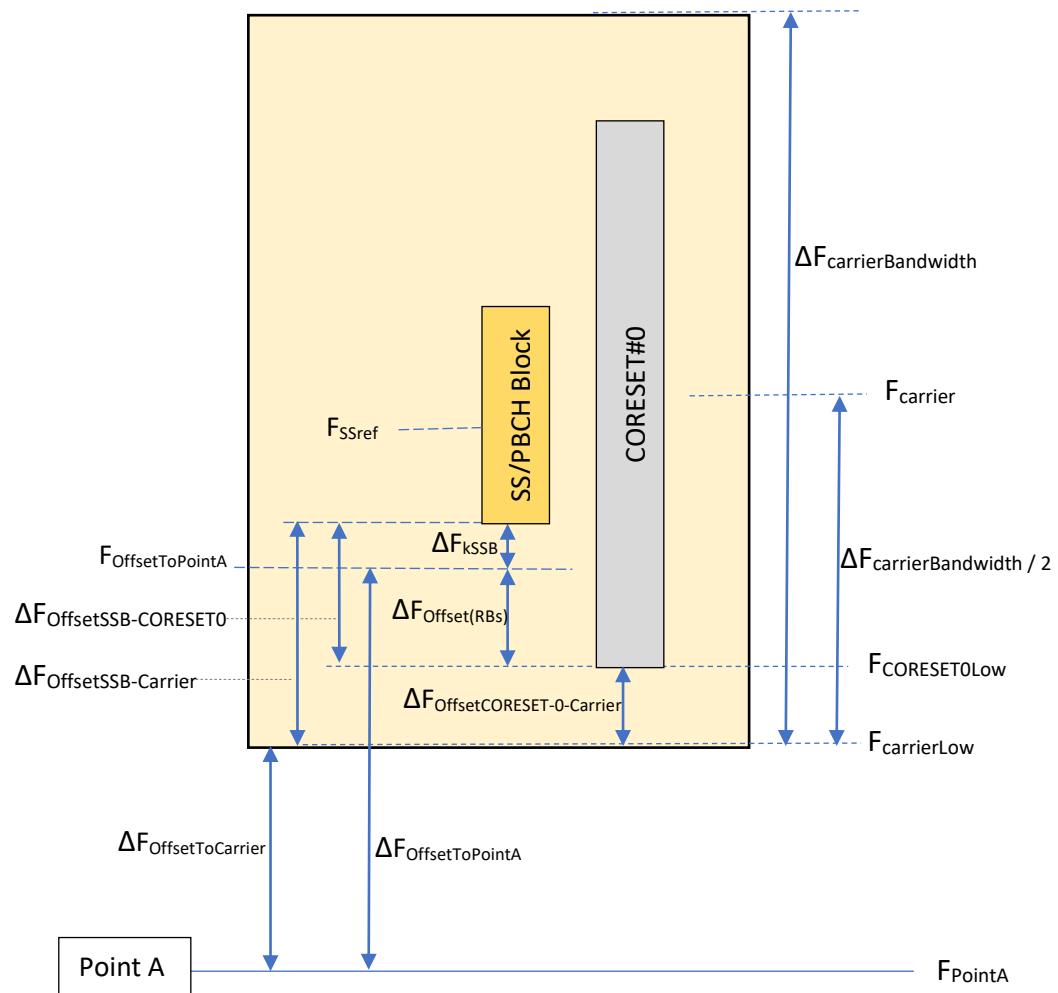
Clause C.3.2 describes how to determine the SSB, CORESET#0 and signalling parameters for a PCell.

Clause C.3.3 describes how to determine the SSB and signalling parameters for a Cell without CORESET#0.

---

### C.1 Definitions and Parameters

Figure C.1-1 shows SSB and CORESET#0 and related parameters.



**Figure C.1-1: location of SSB and CORESET#0 within a channel**

The parameters referenced in figure C.1-1 are defined in Table C.1-1.

**Table C.1-1: Definition of parameters in Figure C.1-1 used in Annex C.**

| Parameter                             | Description   |
|---------------------------------------|---|
| FPointA                               | Reference Point A frequency.  |
| F <sub>carrier</sub>                  | F <sub>carrier</sub> is the centre frequency of a carrier corresponding to its NR-ARFCN value.  |
| F <sub>carrierLow</sub>               | F <sub>carrierLow</sub> is the centre frequency of lowest subcarrier of the carrier.<br>F <sub>carrierLow</sub> = F <sub>carrier</sub> - 12 * SCS <sub>Carrier</sub> * (N <sub>RB</sub> / 2) with N <sub>RB</sub> according to Table 5.3.2-1 of TS 38.101-1 [7] and TS 38.101-2 [8] for the channel bandwidth of the carrier.   |
| ΔF <sub>carrierBandwidth</sub>        | ΔF <sub>carrierBandwidth</sub> is the carrier's channel bandwidth as provided in carrierBandwidth to the UE (SCS-SpecificCarrier).  |
| ΔF <sub>offsetToCarrier</sub>         | ΔF <sub>offsetToCarrier</sub> is the frequency offset between Point A and the lower edge of the carrier. F <sub>offsetToCarrier</sub> = offsetToCarrier * PRB size, where PRB size according to the subcarrier spacing of the carrier. offsetToCarrier is signalled to the UE (SCS-SpecificCarrier).  |
| F <sub>SSref</sub>                    | Centre frequency of SSB. For a cell selectable as PCell the F <sub>SSref</sub> corresponds to a valid GSCN value according to clause 5.4.3.1 of TS 38.101-1 [7] and TS 38.101-2 [8].  |
| ΔF <sub>Offset(RBs)</sub>             | ΔF <sub>Offset(RBs)</sub> = 12 * Offset(RBs) * subCarrierSpacingCommon, where Offset(RBs) is given in tables 13-1 to 13-10 of TS 38.213 [22].   |
| ΔF <sub>kSSB</sub>                    | ΔF <sub>kSSB</sub> = k <sub>SSB</sub> * subcarrier spacing of SSB (SCS <sub>SSB</sub> ).  |
| ΔF <sub>OffsetSSB-CORESET0</sub>      | Frequency offset between the lowest subcarrier of the SSB and the lowest subcarrier of CORESET#0. ΔF <sub>OffsetSSB-CORESET0</sub> = ΔF <sub>Offset(RBs)</sub> + ΔF <sub>kSSB</sub> .   |
| ΔF <sub>OffsetCORESET-0-Carrier</sub> | Frequency offset, F <sub>OffsetCORESET#0-Carrier</sub> , between the lowest subcarrier of CORESET#0 and the lowest subcarrier of the carrier.   |
| ΔF <sub>OffsetSSB-Carrier</sub>       | Frequency offset between the lowest subcarrier of the SSB and the lowest subcarrier of the carrier.   |
| F <sub>CORESET0Low</sub>              | Centre frequency of subcarrier 0 of CORESET#0.  |
| F <sub>OffsetToPointA</sub>           | Frequency of the lowest subcarrier of the lowest resource block, which has the subcarrier spacing provided by the higher-layer parameter subCarrierSpacingCommon and overlaps with the SS/PBCH block used by the UE for initial cell selection, expressed in units of resource blocks assuming 15 kHz subcarrier spacing for FR1 and 60 kHz subcarrier spacing for FR2 (TS 38.211 [29] clause 4.4.4.2). |
| ΔF <sub>OffsetToPointA</sub>          | Frequency offset between F <sub>OffsetToPointA</sub> and point A. ΔF <sub>OffsetToPointA</sub> = offsetToPointA * {15 kHz for FR1; 60 kHz for FR2} (TS 38.211 [29] clause 4.4.4.2).   |

Additional parameters used in this annex are defined in Table C.1-2.

**Table C.1-2: Definition of additional parameters used in Annex C.**

|                                       |  |
|---------------------------------------|--|
| $k_{SSB}$                             | as defined in TS 38.211 [29] clause 7.4.3.1  |
| $SCS_{Carrier}$                       | subcarrier spacing for the carrier ( <i>SCS-SpecificCarrier</i> ):<br>FR1: 15kHz, 30kHz or 60kHz according to TS 38.101-1 [7] Table 5.3.5-1<br>FR2: 60kHz or 120kHz according to TS 38.101-2 [8] Table 5.3.5-1   |
| $SCS_{SSB}$                           | SS/PBCH block subcarrier spacing<br>FR1: 15kHz or 30kHz according to TS 38.101-1 [7] Table 5.4.3.3-1<br>FR2: 120kHz or 240kHz according to TS 38.101-2 [8] Table 5.4.3.3-1<br>NOTE: According to the tables in clause 13 of TS 38.213 [22] not all combinations of $SCS_{SSB}$ and $SCS_{Carrier}$ are applicable. |
| $SCS_{common}$                        | Subcarrier spacing for SIB1, Msg.2/4 for initial access, paging and broadcast SI-messages. Provided to the UE in the MIB in IE <i>subCarrierSpacingCommon</i> .  |
| $PRB_{size}$                          | Physical Resource Block size of the carrier = $12 * SCS_{Carrier}$ .   |
| $CRB_{size}$                          | Common Resource Block size = $12 * SCS_{common}$ .   |
| $F_{DL\_Low}, F_{UL\_Low}$            | Lowest frequency of the downlink and uplink frequency range of the band as defined in clause 5.2 of TS 38.101-1 [7] and TS 38.101-2 [8].   |
| $F_{DL\_High}, F_{UL\_High}$          | Highest frequency of the downlink and uplink frequency range of the band as defined in clause 5.2 of TS 38.101-1 [7] and TS 38.101-2 [8].  |
| $\Delta F_{Raster}$                   | Frequency raster of the band as defined in clause 5.4.2.3 of TS 38.101-1 [7] and TS 38.101-2 [8].  |
| $BW_{DL}$                             | Bandwidth of downlink frequency range of the band.   |
| $BW_{UL}$                             | Bandwidth of uplink frequency range of the band.   |
| $CBW_{DL}$                            | Downlink channel bandwidth (MHz) of the carrier according to Table 5.3.2-1 of TS 38.101-1 [7] and TS 38.101-2 [8].   |
| $CBW_{UL}$                            | Uplink channel bandwidth (MHz) of the carrier according to Table 5.3.2-1 of TS 38.101-1 [7] and TS 38.101-2 [8].   |
| $F_{Tx-Rx\_separation}$               | Default Tx – Rx carrier centre frequency separation of the band as defined in clause 5.4.4 of TS 38.101-1 [7]. For TDD bands $F_{Tx-Rx\_separation} = 0$ .   |
| $\Delta F_{Tx-Rx\_separation}$        | $\Delta F_{Tx-Rx} =  (BW_{DL} - BW_{UL})/2 $ is the deviation to the default Tx-Rx carrier centre frequency separation ( $F_{Tx-Rx\_separation}$ ) for FDD FR1 bands supporting asymmetric channel bandwidths as defined in clause 5.3.6 of TS 38.101-1 [7].   |
| $BW_{SSB}$                            | Bandwidth of the SSB. $BW_{SSB} = 12 * SCS_{SSB} * 20$   |
| $\Delta GSCN, GSCN_{MIN}, GSCN_{MAX}$ | GSCN step size, GSCN minimum and GSCN maximum values for the NR band according to table 5.4.3.3-1 of TS 38.101-1 [7] and TS 38.101-2 [8]   |
| $Offset_{RBs}$                        | Offset (RBs) according to the applicable table 13-1 to 13-10 in TS 38.213 [22] for the given band and $\{SCS_{SSB}, SCS_{Carrier}\}$ combination of the carrier.   |
| $Offset_{RBs,max}$                    | Maximum value for Offset (RBs) for the carrier.  |
| $Offset_{RBs,min}$                    | Minimum value for Offset (RBs) for the carrier.  |

## C.2 Determination of test frequencies

### C.2.0 General

Test frequencies are determined as:

For symmetric NR bands (supporting same bandwidth in UL and DL):

- test frequencies for the supported symmetric channel bandwidth combinations are determined as described in clause C.2.1; and
- the test frequencies for the supported asymmetric channel bandwidth combinations are determined as described in clause C.2.3.

For asymmetric NR bands (supporting different bandwidth in UL and DL):

- the test frequencies for the supported symmetric channel bandwidth combinations are determined as described in clause C.2.2; and
- the test frequencies for the supported asymmetric channel bandwidth combinations are determined as described in clause C.2.3.

For NR CA and NR DC:

- the test frequencies are determined as described in the relevant subclause in C.2.4 depending to the type of configuration.

The carrier test frequencies are determined considering the channel raster according to clause 5.4.2.3 in TS 38.101-1 [7] for FR1 and in TS 38.101-2 [8] for FR2.

## C.2.1 Determination of test frequencies for symmetric NR bands and symmetric uplink and downlink channel bandwidth combinations

### C.2.1.1 Determination of test frequencies for Low-, Mid- and High-Range

Downlink:

|   |             |
|---|-------------|
| $F_{DL\_LowRange} = \text{Ceil}((F_{DL\_Low} + CBW_{DL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$    | C.2.1.1-Eq1 |
| $F_{DL\_MidRange} = \text{Round}((F_{DL\_Low} + BW_{DL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$    | C.2.1.1-Eq2 |
| $F_{DL\_HighRange} = \text{Floor}((F_{DL\_High} - CBW_{DL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$ | C.2.1.1-Eq3 |

$F_{DL\_LowRange}$  is rounded up and  $F_{DL\_HighRange}$  is rounded down to obey to the minimum guard band according to clause 5.3.3 of TS 38.101-1 [7] and TS 38.101-2 [8].

Uplink:

|   |             |
|---|-------------|
| $F_{UL\_LowRange} = F_{DL\_LowRange} - F_{Tx-Rx\_separation}$   | C.2.1.1-Eq4 |
| $F_{UL\_MidRange} = F_{DL\_MidRange} - F_{Tx-Rx\_separation}$   | C.2.1.1-Eq5 |
| $F_{UL\_HighRange} = F_{DL\_HighRange} - F_{Tx-Rx\_separation}$ | C.2.1.1-Eq6 |

### C.2.1.2 Determination test frequencies for of Mid-Low and Mid-High-Range for signalling tests

|   |             |
|---|-------------|
| $F_{Mid-LowRange} = \text{Round}((F_{LowRange} + (F_{HighRange} - F_{LowRange})/3) / \Delta F_{Raster}) * \Delta F_{Raster}$    | C.2.1.2-Eq1 |
| $F_{Mid-HighRange} = \text{Round}((F_{LowRange} + 2*(F_{HighRange} - F_{LowRange})/3) / \Delta F_{Raster}) * \Delta F_{Raster}$ | C.2.1.2-Eq2 |

## C.2.2 Determination of test frequencies for asymmetric NR bands and symmetric uplink and downlink channel bandwidth combinations

Determination of test frequencies for asymmetric NR bands, and symmetric uplink and downlink channel bandwidth combinations are determined using the procedure in clause C.2.3 with  $\Delta F_{Tx-Rx} = 0$ .

## C.2.3 Determination of test frequencies for bands supporting asymmetric channel bandwidth combinations

### C.2.3.1 General

The following procedure is used to calculate test frequencies for NR bands supporting asymmetric UL and DL channel bandwidths as described below, where  $CBW_{UL}$  and  $CBW_{DL}$  refer to the carrier's UL and DL channel bandwidths; and  $BW_{UL}$  and  $BW_{DL}$  refer to the band's total UL and DL bandwidths.

The procedure is also used to calculate test frequencies for symmetric UL and DL bandwidth combinations for asymmetric NR bands.

For FDD bands supporting asymmetric uplink and downlink bandwidth combinations a deviation of  $\Delta F_{TX-RX}$  (C.2.3.1-Eq1) is to be added to the default Tx-Rx carrier centre frequency separation,  $F_{Tx-Rx\_separation}$  (TS 38.101-1 [7] clause 5.3.6).

|  |             |
|--|-------------|
| $\Delta F_{TX-RX} =  (CBW_{DL} - CBW_{UL})/2 $ | C.2.3.1-Eq1 |
|--|-------------|

For the case of asymmetric NR bands and symmetric UL and DL bandwidth combinations  $\Delta F_{TX-RX} = 0$ . To meet the Tx-Rx frequency separation requirement for asymmetric NR bands were the supported overall UL bandwidth is smaller than the supported overall DL bandwidth it may not be possible to cover the full DL frequency range for all UL and DL channel bandwidth combinations. For CA when such band is only used for DL CC the full range can be used for all DL channel bandwidths.

To maximize the tested frequency range for the non-CA case the UL frequency range, as being smaller than the DL frequency range, need to be used as the starting point to calculate the uplink and downlink test frequencies.

### C.2.3.2 Determination of Low-, Mid- and High-Range for bands supporting asymmetric uplink and downlink bandwidth combinations

The following procedure is used to determine the test frequencies for Low-, Mid- and High-Range for bands supporting asymmetric UL and DL bandwidth combinations.

1. Calculate uplink carrier centre frequencies:

|  |             |
|--|-------------|
| $F_{UL\_LowRange} = \text{Ceil}((F_{UL\_Low} + CBW_{UL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$                   | C.2.3.2-Eq1 |
| $F_{UL\_MidRange} = \text{Round}((F_{UL\_Low} + BW_{UL\_Band}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$             | C.2.3.2-Eq2 |
| $F_{UL\_HighRange} = \text{Floor}((F_{UL\_Low} + BW_{UL\_Band} - CBW_{UL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$ | C.2.3.2-Eq3 |

2. Calculate the downlink frequencies:

Calculate the DL carrier centre frequencies from the UL frequencies in step 1.

|  |             |
|--|-------------|
| $F_{DL\_LowRange} = F_{UL\_LowRange} + F_{Tx-Rx\_separation} + \Delta F_{Tx-Rx}$   | C.2.3.2-Eq4 |
| $F_{DL\_MidRange} = F_{UL\_MidRange} + F_{Tx-Rx\_separation} + \Delta F_{Tx-Rx}$   | C.2.3.2-Eq5 |
| $F_{DL\_HighRange} = F_{UL\_HighRange} + F_{Tx-Rx\_separation} + \Delta F_{Tx-Rx}$ | C.2.3.2-Eq6 |

3. Check that the calculated centre test frequencies in step 2 for the  $BW_{DL}$  fits within the bands DL frequency range:

If  $F_{DL\_LowRange}$  is smaller than the lowest frequency of the band then recalculate the minimum  $F_{DL\_LowRange}$  and modify the associated  $F_{UL\_LowRange}$  as:

|  |             |
|--|-------------|
| $F_{DL\_LowRange} = \text{Ceil}((F_{DL\_Low} + CBW_{DL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$ | C.2.3.2-Eq7 |
| $F_{UL\_LowRange} = F_{DL\_LowRange} - F_{Tx-Rx\_separation} - \Delta F_{Tx-Rx}$                     | C.2.3.2-Eq8 |

If  $F_{DL\_HighRange}$  is larger than the higher frequency of the band then recalculate the maximum  $F_{DL\_HighRange}$  and modify the associated  $F_{UL\_HighRange}$  as:

|  |              |
|--|--------------|
| $F_{DL\_HighRange} = \text{Floor}((F_{DL\_Low} + BW_{DL\_Band} - CBW_{DL}/2) / \Delta F_{Raster}) * \Delta F_{Raster}$ | C.2.3.2-Eq9  |
| $F_{UL\_HighRange} = F_{DL\_HighRange} - F_{Tx-Rx\_separation} - \Delta F_{Tx-Rx}$                                     | C.2.3.2-Eq10 |

## C.2.4 Frequency determination for NR CA and NR DC configurations

### C.2.4.1 Determination of test frequencies for NR Inter-band CA and NR DC

Test frequencies for NR Inter-band CA configurations and NR DC use the single carrier test frequencies for each of the included NR bands in the configuration as specified in clause 4.3.1.1.1 for FR1 bands and in clause 4.3.1.2.1 for FR2 bands.

### C.2.4.2 Determination of test frequencies for NR Intra-band Contiguous CA

#### C.2.4.2.1 General

By default, test frequencies for NR Intra-band Contiguous CA in clause 4.3.1 are specified using the nominal channel spacing between the carrier components as specified in TS 38.101-1 [7] clause 5.4A.1 for FR1 and TS 38.101-2 [8] clause 5.4A.1 for FR2. In addition, some NR bands may have test frequencies specified based on an adjusted channel spacing as specified in TS 38.101-1 [7] clause 5.4A.1 for FR1 and TS 38.101-2 [8] clause 5.4A.1 for FR2.

The test frequencies for NR Intra-band Contiguous CA is calculated for each CC and specific test cases can decide which CC is used as PCell. This means that all CC test frequencies is calculated with a CORESET#0.

Note: For NR Intra-band Contiguous CA configurations for bands where Tx frequency range is lower than Rx frequency range the RAN4 requirements for reference sensitivity testing is specified having the PCC frequency lower than the SCC frequencies such that UL PRB maximise the Tx-Rx separation. This means that CC1 shall be used as PCell in the reference test case for bands where Tx frequency range is lower than Rx frequency range; and highest CC shall be used as PCell in the reference test case for bands where Tx frequency range is higher than Rx frequency range.

In addition to the definition of parameters in clause C.1 the following parameters are used to calculate carrier components (CC) test frequencies for NR Intra-band Contiguous and Non-contiguous CA configurations:

| Parameter                        | Description  |
|----------------------------------|--|
| N <sub>CC</sub>                  | Number of CCs in the for NR Intra-band configuration                           |
| CCBW <sub>DL</sub> (i)           | Channel bandwidth (MHz) of downlink CC(i), where i = 1 to N <sub>CC</sub>      |
| F <sub>Channel_Spacing</sub> (i) | Channel spacing between CC(i) and CC(i+1), where i = 1 to (N <sub>CC</sub> -1) |

#### C.2.4.2.2 Determination of test frequencies for Low-, Mid- and High-Range

Downlink CC(1), lowest frequency CC:

F<sub>DL\_LowRange\_CC</sub>(1) is rounded up and F<sub>DL\_HighRange\_CC</sub>(1) is rounded down to obey to the minimum guard band according to clause 5.3.3 of TS 38.101-1 [7] and TS 38.101-2 [8].

|   |               |
|---|---------------|
| F <sub>DL_LowRange_CC</sub> (1) = Ceil((F <sub>DL_Low</sub> + CCBW <sub>DL</sub> (1) / 2) / ΔF <sub>Raster</sub> ) * ΔF <sub>Raster</sub>   | C.2.4.2.2-Eq1 |
| F <sub>DL_MidRange_CC</sub> (1) = Round((F <sub>DL_Low</sub> + BW <sub>DL</sub> /2 - ∑ <sub>k=1 to (N<sub>CC</sub>)</sub> CCBW <sub>DL</sub> (k)/2 + CCBW <sub>DL</sub> (1)/2) / ΔF <sub>Raster</sub> ) * ΔF <sub>Raster</sub>      | C.2.4.2.2-Eq2 |
| F <sub>DL_HighRange_CC</sub> (1) = Floor((F <sub>DL_High</sub> - CCBW <sub>DL</sub> (N <sub>CC</sub> )/2 - ∑ <sub>k=1 to (N<sub>CC</sub>-1)</sub> F <sub>Channel_Spacing</sub> (k)) / ΔF <sub>Raster</sub> ) * ΔF <sub>Raster</sub> | C.2.4.2.2-Eq3 |

Downlink CC(2) to CC(N<sub>CC</sub>), in increasing frequency order:

|   |               |
|---|---------------|
| F <sub>DL_LowRange_CC</sub> (i) = F <sub>DL_LowRange_CC</sub> (i-1) + F <sub>Channel_Spacing</sub> (i)), i=2 to N <sub>CC</sub>   | C.2.4.2.2-Eq4 |
| F <sub>DL_MidRange_CC</sub> (i) = F <sub>DL_MidRange_CC</sub> (i-1) + F <sub>Channel_Spacing</sub> (i)), i=2 to N <sub>CC</sub>   | C.2.4.2.2-Eq5 |
| F <sub>DL_HighRange_CC</sub> (i) = F <sub>DL_HighRange_CC</sub> (i-1) + F <sub>Channel_Spacing</sub> (i)), i=2 to N <sub>CC</sub> | C.2.4.2.2-Eq6 |

Uplink CC(i), i=1 to N<sub>CC</sub>:

|   |               |
|---|---------------|
| $F_{UL\_LowRange\_CC}(i) = F_{DL\_LowRange\_CC}(i) - F_{Tx-Rx\_separation}$   | C.2.4.2.2-Eq7 |
| $F_{UL\_MidRange\_CC}(i) = F_{DL\_MidRange\_CC}(i) - F_{Tx-Rx\_separation}$   | C.2.4.2.2-Eq8 |
| $F_{UL\_HighRange\_CC}(i) = F_{DL\_HighRange\_CC}(i) - F_{Tx-Rx\_separation}$ | C.2.4.2.2-Eq9 |

### C.2.4.3 Determination of test frequencies for NR Intra-band Non-Contiguous CA

#### C.2.4.3.1 General

The default test frequencies in clause 4.3.1 for NR Intra-band Non-Contiguous CA are based on maximum Wgap between the carrier components of the different bands.

Test frequencies with Wgap different from maximum Wgap are specified in the specific test cases using them.

#### C.2.4.3.2 Maximum Wgap, two non-contiguous components

For the case a NR Intra-band Non-Contiguous CA configuration is limited to two non-contiguous components, where each non-contiguous components may be a single CC component or a multi CC contiguous CA component, the test frequencies for each non-contiguous component is selected such that the first component use the test frequency of the Low range and the second component use the test frequency for High range.

If a non-contiguous component is single CC component, then the test frequencies as specified in clause 4.3.1.1.1 for FR1 bands and in clause 4.3.1.2.1 for FR2 bands are used. If a non-contiguous component is a multi CC contiguous CA component, then the test frequencies as specified in clause 4.3.1.1.3 for FR1 bands and in clause 4.3.1.2.3 for FR2 bands are used.

#### C.2.4.3.3 Maximum Wgap, more than two non-contiguous components

For the case a NR Intra-band Non-Contiguous CA configuration includes more than two non-contiguous components, where each non-contiguous components may be a single CC component or a multi CC contiguous CA component the maximum Wgap is calculated as:

|   |               |
|---|---------------|
| $\text{Maximum Wgap} = (\text{BW}_{DL} - \sum_{k=1 \text{ to } (N_{CC}-1)} \text{CCBW}_{DL}(i)) / (N_{CC}-1)$ | C.2.4.3.3-Eq1 |
|---|---------------|

For each non-contiguous components the test frequencies are calculated based on the principles in clause C.2.1 for symmetric NR bands with symmetric uplink and downlink channel bandwidth combinations or; in clause C.2.2 for asymmetric NR bands with symmetric uplink and downlink channel bandwidth combinations; in clause C.2.3 for symmetric or asymmetric NR bands with asymmetric uplink and downlink channel bandwidth combinations.

## C.3 Determination of SSB and CORESET#0

### C.3.1 General

The requirements to be met and the principles used for determining the SSB and CORESET#0 for a PCell are:

1. The complete SSB and CORESET#0 shall be within the carrier's channel bandwidth.
2. The SSB centre frequency (SSref) shall be on the synchronisation raster.
3. The SSB shall be kept as close as possible to the carrier's lower edge centre frequency.
4. CORESET#0 configuration is selected using lowest number of RBs and symbols in applicable table in TS 38.213 [22], clause 13.
5. The first SSB subcarrier shall be aligned with the defined resource grid given by SCS indicated by *subCarrierSpacingCommon* in the MIB.

### C.3.2 Determination of SSB, CORESET#0 and signalling parameters for a PCell

The following procedure is used to determine an SSB on the synchronisation raster (GSCN) and a CORESET#0 configuration ( $k_{SSB}$ ,  $Offset_{RBs}$  and  $OffsetToPointA$ ) as close as possible to the carrier's lower edge. See figure C1-1 and clause C.1 for definition of parameters referenced in the procedure.

1. Determine SSB and CORESET#0:

- 1a. Calculate the lower of  $F_{SSref}$ ,  $F_{SSref\_Min}$ , correspondent to SSB lowest subcarrier being at the same frequency as the carrier's lowest subcarrier; and the higher limit of  $F_{SSref}$ ,  $F_{SSref\_Max}$ , correspondent to SSB highest subcarrier being at the same frequency as the carrier's highest subcarrier  $F_{SSref\_Max}$

|  |
|--|
| $F_{carrierLow} = \text{see formula for } F_{carrierLow} \text{ in Table C.1-1}$ |
| $F_{SSref\_Min} = F_{carrierLow} + CRB_{size} * Offset_{RBs,min} + BW_{SSB} / 2$ |
| $F_{SSref\_Max} = F_{carrierLow} + \Delta F_{carrierBandwidth} - BW_{SSB} / 2$   |

- 1b. Calculate  $GSCN_{MIN}$  correspondent to  $F_{SSref\_Min}$  in accordance to TS 38.101-1 [7], clause 5.4.3.1 for FR1 and TS 38.101-2 [7], clause 5.4.3.1 for FR2 and select the closest valid GSCN value with  $GSCN \geq GSCN_{MIN}$  for the carrier in according to the carrier's synchronisation raster as specified in clause 5.4.3.3 in TS 38.101-1 [7] and TS 38.101-2 [8].
- 1c. Calculate the  $F_{SSref}$  for the selected GSCN value in step 1b in accordance to TS 38.101-1 [7], clause 5.4.3.1 for FR1 and TS 38.101-2 [7], clause 5.4.3.1 for FR2.

- 1d. Calculate the frequency  $F_{offsetToPointA}$ , which is the lowest subcarrier of the lowest resource block with the subcarrier spacing being a multiple of resource blocks expressed in terms of common PRB size and overlaps with the SS/PBCH block subcarrier 0 of the first resource block of the SS/PBCH block,  $F_{SSBlow}$  (TS 38.211 [3], clause 7.4.3.1):

|   |
|---|
| $F_{SSBlow} = F_{SSref} - BW_{SSB} / 2$   |
| $F_{offsetToPointA} = CRB_{size} * \text{Floor}((F_{SSBlow} - F_{carrierLow}) / CRB_{size}) + F_{carrierLow}$ |

- 1e. Calculate the maximum  $Offset_{RBs}$  value with  $F_{CORESET0Low} \geq F_{carrierLow}$ :

|   |
|---|
| $\text{Max\_Offset}_{RBs} = (F_{offsetToPointA} - F_{carrierLow}) / CRB_{size}$ |
|---|

- 1f. Select the largest valid  $Offset_{RBs}$  value equal or smaller than the calculated max value,  $\text{Max\_Offset}_{RBs}$  in step 1e within the applicable values for the carrier in TS 38.213 [4], table 13-1 to 13-10 limited to the table indexes with number of RBs  $N_{RB}^{CORESET}$  and number of symbols  $N_{sym}^{CORESET}$  equal to the minimum value of  $N_{RB}^{CORESET}$  in the table and minimum value of  $N_{sym}^{CORESET}$  for the selected  $N_{RB}^{CORESET}$ . If a valid  $Offset_{RBs}$  value is found, then continue from step 1g..

If a valid  $Offset_{RBs}$  value is found, then continue from step 1g..

If no valid  $Offset_{RBs}$  value is found, then select the next valid GSCN with  $F_{SSref} \leq F_{SSref\_Max}$  within the valid GSCN range for the carrier and repeat steps 1b to 1f.

If no valid  $Offset_{RBs}$  value found within the valid GSCN range then will the carrier not be possible to use as PCell and  $F_{SSref}$ ,  $k_{SSB}$ ,  $F_{PointA}$ ,  $OffsetToCarrier$  and  $OffsetToPointA$  are calculated as described in clause C.3.2 and the procedure is completed.

- 1g. Calculate  $k_{SSB}$

|  |
|--|
| $k_{SSB} = (F_{SSBlow} - F_{offsetToPointA}) / \{15 \text{ kHz for FR1, } subCarrierSpacingCommon \text{ (MIB) for FR2}\} (\text{TS 38.211 [3], clause 7.4.3.1.})$     |
| $N = SCS_{SSB} / \{15 \text{ kHz for FR1; } subCarrierSpacingCommon \text{ (MIB) for FR2}\}.$  |
| $k_{SSB} \bmod N \neq 0$ indicates that the SSB subcarriers are not aligned with the resource grid given by the SCS indicated by $subCarrierSpacingCommon$ in the MIB. |

If  $k_{SSB}$  is an integer and  $k_{SSB} \bmod N = 0$ , then continue from step 2.

If  $k_{SSB}$  is not an integer value or  $k_{SSB} \bmod N > 0$ , then select the next valid GSCN with  $F_{SSref} < F_{SSref\_Max}$  within the valid GSCN range for the carrier and repeat steps 1b to 1g.

If  $N > 1$  and no valid  $k_{SSB}$  value found within the valid GSCN range for the currently selected carrier frequency  $F_{carrier}$  then shift  $F_{carrier}$  up by  $\Delta F_{Raster}$  for Low range; or down by  $\Delta F_{Raster}$  for Mid, Mid-Low, Mid-High and High ranges and repeat steps 1a to 1g for a maximum shift of  $3 * \Delta F_{Raster}$  (see clause C.3.1, Note 1).

If no valid  $k_{SSB}$  value found within the valid GSCN range then will the carrier not be possible to use as PCell and  $F_{SSref}$ ,  $k_{SSB}$ ,  $F_{PointA}$ ,  $OffsetToCarrier$  and  $OffsetToPointA$  are calculated as described in clause C.3.2 and the procedure is completed.

## 2. Determine OffsetToCarrier

Select offsetToCarrier value for the carrier in accordance to Table C.3.2-1.

**Table C.3.2-1: Downlink and uplink offsetToCarrier default values for different frequency ranges**

| Frequency range | Downlink<br><i>offsetToCarrier</i> | Uplink<br><i>offsetToCarrier</i> |
|-----------------|------------------------------------|----------------------------------|
| Low range       | 0                                  | 0                                |
| Mid range       | 102                                | 504                              |
| High range      | 504                                | 6                                |
| Mid-Low range   | 12                                 | 36                               |
| Mid-High range  | 24                                 | 114                              |

Note: Different values of *offsetToCarrier* have been selected for Low, Mid-Low, Mid, Mid-High and High ranges to achieve enhanced test coverage of the *offsetToCarrier* range of values.

## 2b. Determine $F_{pointA}$ :

$$F_{PointA} = F_{carrierLow} - offsetToCarrier * PRB_{size}$$

## 3. Calculate $\Delta F_{OffsetCORESET-0-Carrier}$ :

The  $\Delta F_{OffsetCORESET-0-Carrier}$  value is used to calculate the Offset Carrier CORESET#0 parameter included in the test frequency tables in sub-clauses 4.3.1 and 6.2.3.

$$\Delta F_{OffsetCORESET-0-Carrier} = F_{OffsetToPointA} - Offset_{RB} * CRB_{size} - F_{carrierLow}$$

## 4. Calculate signalling parameters:

| IE field                       | Value  |
|--------------------------------|--|
| <i>ssb-SubcarrierOffset</i>    | Set to the 4 least significant bits of $k_{SSB}$ . For the case $k_{SSB} > 15$ the extended by an additional most significant bit encoded within PBCH as specified in TS 38.213 [22].<br>The IE field <i>ssb-SubcarrierOffset</i> is signalled in the MIB. |
| <i>controlResourceSetZero</i>  | Set to the index associated with the selected $Offset_{RBs}$ value in the applicable table, 13-1 to 13-10, in TS 38.213 [22].<br>The IE field <i>controlResourceSetZero</i> is signalled in the IE <i>pdcch-ConfigSIB1</i> in the MIB.                     |
| <i>absoluteFrequencySSB</i>    | Set to $F_{SSref}$ expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.   |
| <i>absoluteFrequencyPointA</i> | Set to $F_{PointA}$ expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.  |
| <i>offsetToPointA</i>          | $(F_{OffsetToPointA} - F_{PointA}) / (12 * \{15 \text{ kHz for FR1; } 60 \text{ kHz for FR2}\})$ .<br>The IE field <i>offsetToPointA</i> is signalled in IE <i>FrequencyInfoDL-SIB</i> .   |
| <i>offsetToCarrier</i>         | Set to value calculated in step 2a.<br>The IE field <i>offsetToCarrier</i> is signalled in IE <i>SCS-SpecificCarrier</i> .   |

### C.3.3 Determination of SSB and signalling parameters for a carrier without CORESET#0

The following procedure is used for calculation of SSB and signalling parameters for a carrier without a CORESET#0.

1. Calculate  $F_{SSref}$ ,  $k_{SSB}$  and  $F_{PointA}$  with the SSB lowest subcarrier at the carrier's lowest subcarrier ( $\Delta F_{OffsetSSB-Carrier}$  in Figure C.1-1 = 0):

|   |
|---|
| $F_{SSref} = F_{carrierLow} + BW_{SSB} / 2$   |
| $k_{SSB} = \{31 \text{ for FR1; } 15 \text{ for FR2}\}$ indicating that no CORESET#0 is present for the carrier (TS 38.213 [4], clause 13). |
| $offsetToCarrier = \text{target value for } offsetToCarrier \text{ dependent on frequency range as specified in Table C.3.1-1.}$            |
| $F_{PointA} = F_{carrierLow} - offsetToCarrier * PRB_{size}$  |

2. Calculate signalling parameters:

| IE field                       | Value  |
|--------------------------------|--|
| <i>ssb-SubcarrierOffset</i>    | Set to the 4 least significant bits of $k_{SSB}$ . For the case $k_{SSB} > 15$ the extended by an additional most significant bit encoded within PBCH as specified in TS 38.213 [22].<br>The IE field <i>ssb-SubcarrierOffset</i> is signalled in the MIB. |
| <i>controlResourceSetZero</i>  | Set to 0 indicating that no CORESET#0 exist (TS 38.213 [22], clause 13).<br>The IE field <i>controlResourceSetZero</i> is signalled in the IE <i>pdcch-ConfigSIB1</i> in the MIB.  |
| <i>searchSpaceZero</i>         | Set to 0 indicating that no CORESET#0 exist (TS 38.213 [22], clause 13).<br>The IE field <i>searchSpaceZero</i> is signalled in the IE <i>pdcch-ConfigSIB1</i> in the MIB.   |
| <i>absoluteFrequencySSB</i>    | Set to $F_{SSref}$ expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.   |
| <i>absoluteFrequencyPointA</i> | Set to $F_{PointA}$ expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.  |
| <i>offsetToCarrier</i>         | Set to <i>offsetToCarrier</i> target value selected in step 1.   |

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## C.4 Determination of SSB and CORESET#0 for RRM testing with SSB SCS 120 kHz and 240 kHz

### C.4.1 General

The requirements to be met and the principles used for determining the SSB and CORESET#0 for a PCell used in RRM test cases are:

1. The complete SSB and CORESET#0 shall be within the carrier's channel bandwidth.
2. The SSB centre frequency (SSref) shall be on the synchronisation raster.
3. The SSB shall be kept as close as possible to the carrier's lower edge centre frequency.
4. The CORESET#0 configuration is selected using 24 RBs and  $Offset_{RBs} = 0$  according to Table 13-8 and Index 0 for  $SCS_{SSB} = 120$  kHz and Table 13-10 and Index 0 for  $SCS_{SSB} = 240$  kHz.
5. The first SSB subcarrier shall be aligned with the defined resource grid given by SCS indicated by *subCarrierSpacingCommon* in the MIB.

## C.4.2 Determination of SSB, CORESET#0 and signalling parameters

The following procedure is used to determine an SSB on the synchronisation raster (GSCN) and a CORESET#0 configuration ( $k_{SSB}$ ,  $\text{Offset}_{RBs} = 0$  and  $\text{OffsetToPointA}$ ) as close as possible to the carrier's lower edge. See figure C1-1 and clause C.1 for definition of parameters referenced in the procedure.

1. The target test frequencies for Low, Mid and High ranges are calculated as described in clause C.2.1.1.

For each of Low, Mid and High ranges do:

2. Determine SSB and CORESET#0:

- 2a. Calculate the lower of  $F_{SSref}$ ,  $F_{SSref\_Min}$ , correspondent to SSB lowest subcarrier being at the same frequency as the carrier's lowest subcarrier; and the higher limit of  $F_{SSref}$ ,  $F_{SSref\_Max}$ , correspondent to SSB highest subcarrier being at the same frequency as the carrier's highest subcarrier  $F_{SSref\_Min}$

|  |
|--|
| $F_{carrierLow} = \text{see formula for } F_{carrierLow} \text{ in Table C.1-1}$                   |
| $F_{SSref\_Min} = F_{carrierLow} + \text{CRBsize} * \text{Offset}_{RBs,min} + \text{BW}_{SSB} / 2$ |
| $F_{SSref\_Max} = F_{carrierLow} + \Delta F_{carrierBandwidth} - \text{BW}_{SSB} / 2$              |

- 2b. Calculate  $GSCN_{MIN}$  correspondent to  $F_{SSref\_Min}$  in accordance to TS 38.101-2 [7], clause 5.4.3.1 and select the closest valid GSCN value with  $GSCN \geq GSCN_{MIN}$  for the carrier in according to the carrier's synchronisation raster as specified in clause 5.4.3.3 in TS 38.101-2 [8].

- 2c. Calculate the  $F_{SSref}$  for the selected GSCN value in step 2b in accordance to TS 38.101-2 [7], clause 5.4.3.1 for FR2.

- 2d. Calculate the frequency  $F_{SSBLow}$  and shift the carrier frequency to achieve  $F_{carrierLow}$  equal or as close as possible  $F_{SSBLow}$  on the carrier's frequency raster.

|   |
|---|
| $F_{SSBLow} = F_{SSref} - \text{BW}_{SSB} / 2$  |
| $F_{carrier} = \text{calculated using the formula in clause C.2.1.1 with } F_{DL\_Low} = F_{SSBLow}$            |
| $F_{carrierLow} = \text{see formula for } F_{carrierLow} \text{ in Table C.1-1 with new value of } F_{carrier}$ |

- 2e. Calculate  $k_{SSB}$

|   |
|---|
| $k_{SSB} = (F_{SSBLow} - F_{carrierLow}) / \text{subCarrierSpacingCommon} \text{ (MIB, FR2)} \text{ (TS 38.211 [3], clause 7.4.3.1).}$                                      |
| $N = \text{SCS}_{SSB} / \text{subCarrierSpacingCommon} \text{ (MIB, FR2).}$   |
| $k_{SSB} \text{ MOD } N \neq 0$ indicates that the SSB subcarriers are not aligned with the resource grid given by the SCS indicated by subCarrierSpacingCommon in the MIB. |

If  $k_{SSB}$  is an integer and  $k_{SSB} \text{ MOD } N = 0$ , then continue from step 3 else modify the carrier frequency to get valid value of  $k_{SSB}$  and  $k_{SSB} \text{ MOD } N = 0$ .

3. Calculate Point A frequency,  $\Delta F_{offsetToCarrier}$  and  $\Delta F_{OffsetToPointA}$ :

The CORESET#0 configuration is selected using 24 RBs and  $\text{Offset}_{RBs} = 0$  according to Table 13-8 and Index 0 for  $\text{SCS}_{SSB} = 120$  kHz and Table 13-10 and Index 0 for  $\text{SCS}_{SSB} = 240$  kHz (see C.4.1). This means that  $\text{OffsetToPointA} = F_{carrierLow}$ . By selecting Point A equal to  $F_{carrierLow}$  this gives:

|                                  |
|----------------------------------|
| $F_{PointA} = F_{carrierLow}$    |
| $\Delta F_{offsetToCarrier} = 0$ |
| $\Delta F_{OffsetToPointA} = 0$  |

4. Calculate signalling parameters:

| IE field                       | Value   |
|--------------------------------|---|
| <i>ssb-SubcarrierOffset</i>    | Set to the 4 least significant bits of $k_{SSB}$ .<br>The IE field <i>ssb-SubcarrierOffset</i> is signalled in the MIB.   |
| <i>controlResourceSetZero</i>  | 0 (Index=0 in table 13-8 for $SCS_{SSB} = 120$ KHz and table 13-10 for $SCS_{SSB} = 240$ KHz in TS 38.213 [22]).<br>The IE field <i>controlResourceSetZero</i> is signalled in the IE <i>pdcch-ConfigSIB1</i> in the MIB. |
| <i>absoluteFrequencySSB</i>    | Set to $F_{SSref}$ expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.  |
| <i>absoluteFrequencyPointA</i> | Set to $F_{PointA}$ expressed in ARFCN as defined in TS 38.101-1 [15] and TS 38.101-2 [39], clause 5.4.2.   |
| <i>offsetToPointA</i>          | 0<br>The IE field <i>offsetToPointA</i> is signalled in IE <i>FrequencyInfoDL-SIB</i> .   |
| <i>offsetToCarrier</i>         | 0<br>The IE field <i>offsetToCarrier</i> is signalled in IE <i>SCS-SpecificCarrier</i> .  |

## Annex D (informative): Change history

| Change history |                    |           |    |     |     |  |             |
|----------------|--------------------|-----------|----|-----|-----|--|-------------|
| Date           | Meeting            | TDoc      | CR | Rev | Cat | Subject/Comment  | New version |
| 2017-12        | RAN5#77            | R5-176995 | -  | -   | -   | TP on clauses of test equipment requirement in 38.508-1                        | 0.1.0       |
| 2017-12        | RAN5#77            | R5-176779 | -  | -   | -   | Add references   | 0.1.0       |
| 2017-12        | RAN5#77            | R5-176917 | -  | -   | -   | Introduce general chapter for generic procedures                               | 0.1.0       |
| 2017-12        | RAN5#77            | R5-176918 | -  | -   | -   | Add generic procedures RRC_IDLE and RRC_CONNECTED                              | 0.1.0       |
| 2017-12        | RAN5#77            | R5-176920 | -  | -   | -   | Introduce RRC chapters   | 0.1.0       |
| 2018-01        | RAN5#1-5G-NR Adhoc | R5-180066 | -  | -   | -   | Definition of downlink physical layer parameters for NR                        | 0.2.0       |
| 2018-03        | RAN5#78            | R5-181697 | -  | -   | -   | Addition of the environmental information into TS 38.508-1                     | 0.3.0       |
| 2018-03        | RAN5#78            | R5-180265 | -  | -   | -   | Introduce chapter for reference configurations                                 | 0.3.0       |
| 2018-03        | RAN5#78            | R5-181311 | -  | -   | -   | Update the general chapter   | 0.3.0       |
| 2018-03        | RAN5#78            | R5-180382 | -  | -   | -   | Update RRCCoreConfiguration  | 0.3.0       |
| 2018-03        | RAN5#78            | R5-180383 | -  | -   | -   | Add draft RRC messages   | 0.3.0       |
| 2018-03        | RAN5#78            | R5-180577 | -  | -   | -   | Update chapter for test frequencies  | 0.3.0       |
| 2018-03        | RAN5#78            | R5-180709 | -  | -   | -   | Add CellGroupConfig  | 0.3.0       |
| 2018-03        | RAN5#78            | R5-180773 | -  | -   | -   | Add radioBearerConfig  | 0.3.0       |
| 2018-03        | RAN5#78            | R5-180775 | -  | -   | -   | Add draft Radio resource control information elements                          | 0.3.0       |
| 2018-03        | RAN5#78            | R5-180966 | -  | -   | -   | Update RRC Connected state   | 0.3.0       |
| 2018-03        | RAN5#78            | R5-181035 | -  | -   | -   | Update RRC IDLE state  | 0.3.0       |
| 2018-03        | RAN5#78            | R5-180253 | -  | -   | -   | Revised WID on: UE Conformance Test Aspects - 5G system with NR and LTE        | 0.3.0       |
| 2018-04        | RAN5#1-5G-NR Adhoc | R5-181812 | -  | -   | -   | Update Radio resource control information elements                             | 0.4.0       |
| 2018-04        | RAN5#1-5G-NR Adhoc | R5-182109 | -  | -   | -   | Update CellGroupConfig   | 0.4.0       |
| 2018-04        | RAN5#1-5G-NR Adhoc | R5-182064 | -  | -   | -   | Update radioBearerConfig   | 0.4.0       |
| 2018-04        | RAN5#1-5G-NR Adhoc | R5-182062 | -  | -   | -   | Update MIB   | 0.4.0       |
| 2018-04        | RAN5#1-5G-NR Adhoc | R5-182063 | -  | -   | -   | Introduce radio conditions   | 0.4.0       |
| 2018-04        | RAN5#1-5G-NR Adhoc | R5-181786 | -  | -   | -   | Update RRCCoreConfiguration  | 0.4.0       |
| 2018-04        | RAN5#1-5G-NR Adhoc | R5-181971 | -  | -   | -   | Add Other information elements   | 0.4.0       |
| 2018-04        | RAN5#1-5G-NR Adhoc | R5-182065 | -  | -   | -   | Update chapter 4.5.1 General   | 0.4.0       |
| 2018-04        | RAN5#1-5G-NR Adhoc | R5-181813 | -  | -   | -   | Update RRC IDLE state  | 0.4.0       |
| 2018-04        | RAN5#1-5G-NR Adhoc | R5-182066 | -  | -   | -   | Update RRC CONNECTED state   | 0.4.0       |
| 2018-04        | RAN5#1-5G-NR Adhoc | R5-182110 | -  | -   | -   | Text proposal to add clause 4.4 reference system configurations to TS 38.508-1 | 0.4.0       |
| 2018-04        | RAN5#1-5G-NR Adhoc | R5-182067 | -  | -   | -   | TP for definition of physical channel allocations in 38.508-1                  | 0.4.0       |
| 2018-04        | RAN5#1-5G-NR Adhoc | R5-182091 | -  | -   | -   | TP for clauses of signal level   | 0.4.0       |
| 2018-04        | RAN5#1-5G-NR Adhoc | R5-181972 | -  | -   | -   | TP for updating of Downlink physical layer parameters                          | 0.4.0       |
| 2018-04        | RAN5#1-            | R5-181893 | -  | -   | -   | Addition of UE capability information elements                                 | 0.4.0       |

|         |                    |           |      |   |   |   |        |
|---------|--------------------|-----------|------|---|---|---|--------|
|         | 5G-NR Adhoc        |           |      |   |   |   |        |
| 2018-04 | RAN5#1-5G-NR Adhoc | R5-181973 | -    | - | - | TP for adding Mid channel BW definition in TS 38.508-1                                | 0.4.0  |
| 2018-04 | RAN5#1-5G-NR Adhoc | R5-181974 | -    | - | - | Addition of SRB3  | 0.4.0  |
| 2018-04 | RAN5#1-5G-NR Adhoc | R5-182068 | -    | - | - | Update MeasConfig information elements  | 0.4.0  |
| 2018-05 | RAN5#79            | R5-183082 | -    | - | - | Update radio resource control information elements                                    | 1.0.0  |
| 2018-05 | RAN5#79            | R5-182288 | -    | - | - | TP for updating of downlink physical layer parameters in 38.508-1                     | 1.0.0  |
| 2018-05 | RAN5#79            | R5-182349 | -    | - | - | Corrections to clause 4.4 reference system configurations                             | 1.0.0  |
| 2018-05 | RAN5#79            | R5-182792 | -    | - | - | TP for clauses of Supported Channels for a NR cell                                    | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183218 | -    | - | - | pCR update chapter for test frequencies - EN-DC                                       | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183234 | -    | - | - | TP for updating of physical channel allocation part in 38.508-1                       | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183256 | -    | - | - | pCR update chapter for test frequencies - FR1   | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183916 | -    | - | - | TP for Annex A in TS 38.508-1 and adding a set of Connection Diagrams                 | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183920 | -    | - | - | Introduction of Environmental conditions for FR1                                      | 1.0.0  |
| 2018-05 | RAN5#79            | R5-182249 | -    | - | - | Add reference to NR cell table  | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183210 | -    | - | - | Update PDCCH  | 1.0.0  |
| 2018-05 | RAN5#79            | R5-182312 | -    | - | - | Update chapter 4.5.1 General  | 1.0.0  |
| 2018-05 | RAN5#79            | R5-182313 | -    | - | - | Update RRC CONNECTED state  | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183087 | -    | - | - | Addition of new RRCReconfiguration definition for AM/UM bearers                       | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183088 | -    | - | - | Updates to UE capability information elements   | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183250 | -    | - | - | Updates to UE capability information elements   | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183083 | -    | - | - | Update RACH   | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183084 | -    | - | - | Update ARFCN  | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183211 | -    | - | - | Update BWP-UplinkDedicated  | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183212 | -    | - | - | Update serving cell   | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183214 | -    | - | - | Update RadioBearerConfig  | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183215 | -    | - | - | Update RRCReconfiguration   | 1.0.0  |
| 2018-05 | RAN5#79            | R5-182381 | -    | - | - | Update MIB  | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183090 | -    | - | - | Update RRCReconfiguration for measurements  | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183264 | -    | - | - | Corrections to clause 4.5   | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183249 | -    | - | - | Correction to the Table CellGroupConfig   | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183255 | -    | - | - | Update of FR1 signal levels   | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183216 | -    | - | - | Update CellGroupConfig and some related information elements                          | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183086 | -    | - | - | Update CSI-MeasConfig   | 1.0.0  |
| 2018-05 | RAN5#79            | R5-183260 | -    | - | - | Update some information elements related to MeasConfig                                | 1.0.0  |
| 2018-06 | RAN#80             | RP-181207 | -    | - | - | put under revision control as v15.0.0 with small editorial changes                    | 15.0.0 |
| 2018-09 | RAN#81             | R5-184087 | 0004 | - | F | Update chapter 3  | 15.1.0 |
| 2018-09 | RAN#81             | R5-184297 | 0012 | - | F | Addition of Mid channel bandwidth definition for several missing bands                | 15.1.0 |
| 2018-09 | RAN#81             | R5-184327 | 0014 | - | F | Adding condition for CP-OFDM waveform   | 15.1.0 |
| 2018-09 | RAN#81             | R5-184347 | 0019 | - | F | Modified RRC_IDLE procedure to allow multi PDN configuration throughout the test case | 15.1.0 |
| 2018-09 | RAN#81             | R5-184471 | 0044 | - | F | Introduction of test frequencies for NR band n77                                      | 15.1.0 |
| 2018-09 | RAN#81             | R5-184472 | 0045 | - | F | Introduction of test frequencies for NR band n78                                      | 15.1.0 |
| 2018-09 | RAN#81             | R5-184473 | 0046 | - | F | Introduction of test frequencies for NR band n79                                      | 15.1.0 |
| 2018-09 | RAN#81             | R5-184474 | 0047 | - | F | Introduction of test frequencies for NR band n257                                     | 15.1.0 |
| 2018-09 | RAN#81             | R5-184475 | 0048 | - | F | Introduction of test frequencies for NR band n258                                     | 15.1.0 |
| 2018-09 | RAN#81             | R5-184476 | 0049 | - | F | Introduction of test frequencies for NR band n260                                     | 15.1.0 |
| 2018-09 | RAN#81             | R5-184477 | 0050 | - | F | Introduction of test frequencies for NR band n261                                     | 15.1.0 |
| 2018-09 | RAN#81             | R5-184599 | 0056 | - | F | Add IE SS-RSSI-Measurement  | 15.1.0 |
| 2018-09 | RAN#81             | R5-184617 | 0059 | - | F | Update MIB  | 15.1.0 |
| 2018-09 | RAN#81             | R5-184630 | 0072 | - | F | Editorial Update in clause 4.6.3  | 15.1.0 |
| 2018-09 | RAN#81             | R5-184783 | 0079 | - | F | Introduce 5GMM messages   | 15.1.0 |
| 2018-09 | RAN#81             | R5-184785 | 0080 | - | F | Introduce 5GSM messages   | 15.1.0 |
| 2018-09 | RAN#81             | R5-184806 | 0081 | - | F | Mid test CH BW for n71  | 15.1.0 |
| 2018-09 | RAN#81             | R5-185028 | 0002 | 1 | F | Add SRB1 and SRB2 with NR PDCP  | 15.1.0 |
| 2018-09 | RAN#81             | R5-185029 | 0003 | 1 | F | Update serving cell   | 15.1.0 |
| 2018-09 | RAN#81             | R5-185030 | 0005 | 1 | F | Introduce SA RRC messages   | 15.1.0 |
| 2018-09 | RAN#81             | R5-185031 | 0006 | 1 | F | Correct IE FrequencyInfoDL  | 15.1.0 |
| 2018-09 | RAN#81             | R5-185032 | 0007 | 1 | F | Introduce SA system information blocks  | 15.1.0 |
| 2018-09 | RAN#81             | R5-185033 | 0008 | 1 | F | Introduce SA other information elements   | 15.1.0 |
| 2018-09 | RAN#81             | R5-185035 | 0013 | 1 | F | Correct IE GSCN-ValueNR   | 15.1.0 |
| 2018-09 | RAN#81             | R5-185036 | 0017 | 1 | F | Update of FR1 signal levels   | 15.1.0 |
| 2018-09 | RAN#81             | R5-185037 | 0022 | 1 | F | Addition of IP Connectivity check procedure   | 15.1.0 |
| 2018-09 | RAN#81             | R5-185038 | 0053 | 1 | F | Introduce SA radio resource control information elements                              | 15.1.0 |

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| 2018-09 | RAN#81 | R5-185039 | 0054 | 1 | F | Update IE PhysicalCellGroupConfig   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185040 | 0055 | 1 | F | Introduce cell configurations and timer tolerances chapter headers                      | 15.1.0 |
| 2018-09 | RAN#81 | R5-185041 | 0057 | 1 | F | Add IE SSB-MTC  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185042 | 0058 | 1 | F | Update BWP  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185043 | 0060 | 1 | F | Update PDSCH-Config   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185044 | 0062 | 1 | F | Update PUCCH and PUSCH configuration  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185045 | 0063 | 1 | F | Update RACH configuration   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185046 | 0065 | 1 | F | Update CellGroupConfig  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185047 | 0066 | 1 | F | Update CSI-MeasConfig   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185048 | 0067 | 1 | F | Update MeasConfig   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185049 | 0068 | 1 | F | Update other information elements   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185050 | 0070 | 1 | F | Update RadioBearerConfig  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185051 | 0073 | 1 | F | Specifying content for MeasResultSCG-Failure  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185052 | 0075 | 1 | F | Editorial correction to band representation of non-contiguous EN-DC band combination    | 15.1.0 |
| 2018-09 | RAN#81 | R5-185053 | 0076 | 1 | F | Correction to RLC-Config IE   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185054 | 0077 | 1 | F | Correction to RadioBearerConfig-DRB   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185055 | 0078 | 1 | F | Corrections and updates to BandCombinationList and Feature Set IEs                      | 15.1.0 |
| 2018-09 | RAN#81 | R5-185056 | 0084 | 1 | F | Corrections and updates to UE Capability IEs  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185085 | 0087 | - | F | Addition of UM condition to RLC-Bearer-Config IE  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185133 | 0086 | 1 | F | Correction of clause 4.3.3.2.3  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185163 | 0018 | 1 | F | Modified RRC_Connected procedure for Multi PDN throughout the test case.                | 15.1.0 |
| 2018-09 | RAN#81 | R5-185165 | 0020 | 1 | F | Update EN-DC Generic Procedure Parameter for Multi-PDN addition throughout Test Case    | 15.1.0 |
| 2018-09 | RAN#81 | R5-185168 | 0082 | 1 | F | Introduction of OTA signalling test environment   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185171 | 0009 | 2 | F | Updates to PDCCH and SearchSpace configurations   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185173 | 0016 | 1 | F | Test Frequencies  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185177 | 0051 | 1 | F | Introduction of test frequencies for signalling testing in clause 6                     | 15.1.0 |
| 2018-09 | RAN#81 | R5-185250 | 0023 | 1 | F | Introduction of test frequencies for NR band n1   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185251 | 0024 | 1 | F | Introduction of test frequencies for NR band n2   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185252 | 0025 | 1 | F | Introduction of test frequencies for NR band n3   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185253 | 0026 | 1 | F | Introduction of test frequencies for NR band n5   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185254 | 0027 | 1 | F | Introduction of test frequencies for NR band n7   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185255 | 0028 | 1 | F | Introduction of test frequencies for NR band n8   | 15.1.0 |
| 2018-09 | RAN#81 | R5-185256 | 0029 | 1 | F | Introduction of test frequencies for NR band n12  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185257 | 0030 | 1 | F | Introduction of test frequencies for NR band n20  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185258 | 0031 | 1 | F | Introduction of test frequencies for NR band n25  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185259 | 0032 | 1 | F | Introduction of test frequencies for NR band n28  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185260 | 0033 | 1 | F | Introduction of test frequencies for NR band n34  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185261 | 0034 | 1 | F | Introduction of test frequencies for NR band n38  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185262 | 0035 | 1 | F | Introduction of test frequencies for NR band n39  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185263 | 0036 | 1 | F | Introduction of test frequencies for NR band n40  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185264 | 0037 | 1 | F | Update of test frequencies for NR band n41  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185265 | 0038 | 1 | F | Introduction of test frequencies for NR band n51  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185266 | 0039 | 1 | F | Introduction of test frequencies for NR band n66  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185267 | 0040 | 1 | F | Introduction of test frequencies for NR band n70  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185268 | 0041 | 1 | F | Update of test frequencies for NR band n71  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185269 | 0042 | 1 | F | Introduction of test frequencies for NR band n75  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185270 | 0043 | 1 | F | Introduction of test frequencies for NR band n76  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185443 | 0052 | 1 | F | Correction to power level for FR1 RF tests  | 15.1.0 |
| 2018-09 | RAN#81 | R5-185557 | 0085 | 1 | F | FR2_UE_BeamlockProcedure_38.508-1   | 15.1.0 |
| 2018-12 | RAN#82 | R5-186453 | 0239 | - | F | Updates to clause 4.3.3, physical channel allocations                                   | 15.2.0 |
| 2018-12 | RAN#82 | R5-186457 | 0240 | - | F | Correction to E-UTRA test frequency for intra-band contiguous configuration for band 41 | 15.2.0 |
| 2018-12 | RAN#82 | R5-186468 | 0241 | - | F | E-UTRA test frequencies for EN-DC intra-band contiguous configurations for band 71      | 15.2.0 |
| 2018-12 | RAN#82 | R5-186491 | 0245 | - | F | Update chapter 4.5 for RF connected procedure   | 15.2.0 |
| 2018-12 | RAN#82 | R5-186508 | 0249 | - | F | FR2 UE and TE radiated connection diagram   | 15.2.0 |
| 2018-12 | RAN#82 | R5-186575 | 0251 | - | F | Update IE ServingCellConfig   | 15.2.0 |
| 2018-12 | RAN#82 | R5-186612 | 0252 | - | F | Add CounterCheck  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186613 | 0253 | - | F | Update DLInformationTransfer  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186641 | 0255 | - | F | Update IE SchedulingRequestResourceConfig   | 15.2.0 |
| 2018-12 | RAN#82 | R5-186665 | 0258 | - | F | Update LocationMeasurementIndication  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186666 | 0259 | - | F | Update MeasurementReport  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186677 | 0261 | - | F | Resubmission of update to 38.508 for mid channel bandwidth                              | 15.2.0 |
| 2018-12 | RAN#82 | R5-186682 | 0262 | - | F | Update MobilityFromNRCommand  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186691 | 0264 | - | F | Update Paging   | 15.2.0 |
| 2018-12 | RAN#82 | R5-186692 | 0265 | - | F | Update RRCCReestablishment  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186714 | 0267 | - | F | Update RRCCReject   | 15.2.0 |

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| 2018-12 | RAN#82 | R5-186719 | 0268 | - | F | Updates related to introduction of test frequencies                           | 15.2.0 |
| 2018-12 | RAN#82 | R5-186722 | 0271 | - | F | Update SecurityAlgorithmConfig  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186723 | 0272 | - | F | Updates to MeasResults  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186734 | 0273 | - | F | Update RRCRelease   | 15.2.0 |
| 2018-12 | RAN#82 | R5-186744 | 0274 | - | F | Update RRCHResume   | 15.2.0 |
| 2018-12 | RAN#82 | R5-186825 | 0279 | - | F | Correction of test frequencies for NR band n1                                 | 15.2.0 |
| 2018-12 | RAN#82 | R5-186826 | 0280 | - | F | Correction of test frequencies for NR band n2                                 | 15.2.0 |
| 2018-12 | RAN#82 | R5-186827 | 0281 | - | F | Correction of test frequencies for NR band n3                                 | 15.2.0 |
| 2018-12 | RAN#82 | R5-186828 | 0282 | - | F | Correction of test frequencies for NR band n5                                 | 15.2.0 |
| 2018-12 | RAN#82 | R5-186829 | 0283 | - | F | Correction of test frequencies for NR band n7                                 | 15.2.0 |
| 2018-12 | RAN#82 | R5-186830 | 0284 | - | F | Correction of test frequencies for NR band n8                                 | 15.2.0 |
| 2018-12 | RAN#82 | R5-186831 | 0285 | - | F | Correction of test frequencies for NR band n12                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186832 | 0286 | - | F | Correction of test frequencies for NR band n20                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186833 | 0287 | - | F | Correction of test frequencies for NR band n25                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186834 | 0288 | - | F | Correction of test frequencies for NR band n28                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186835 | 0289 | - | F | Correction of test frequencies for NR band n34                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186836 | 0290 | - | F | Correction of test frequencies for NR band n38                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186837 | 0291 | - | F | Correction of test frequencies for NR band n39                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186838 | 0292 | - | F | Correction of test frequencies for NR band n40                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186839 | 0293 | - | F | Correction of test frequencies for NR band n41                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186840 | 0294 | - | F | Correction of test frequencies for NR band n51                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186841 | 0295 | - | F | Introduction of test frequencies for NR band n66                              | 15.2.0 |
| 2018-12 | RAN#82 | R5-186842 | 0296 | - | F | Introduction of test frequencies for NR band n70                              | 15.2.0 |
| 2018-12 | RAN#82 | R5-186844 | 0298 | - | F | Correction of test frequencies for NR band n75                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186845 | 0299 | - | F | Correction of test frequencies for NR band n76                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186846 | 0300 | - | F | Correction of test frequencies for NR band n77                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186847 | 0301 | - | F | Correction of test frequencies for NR band n78                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186848 | 0302 | - | F | Correction of test frequencies for NR band n79                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-186850 | 0304 | - | F | Correction of test frequencies for NR band n258                               | 15.2.0 |
| 2018-12 | RAN#82 | R5-186851 | 0305 | - | F | Correction of test frequencies for NR band n260                               | 15.2.0 |
| 2018-12 | RAN#82 | R5-186852 | 0306 | - | F | Correction of test frequencies for NR band n261                               | 15.2.0 |
| 2018-12 | RAN#82 | R5-186855 | 0309 | - | F | Introduction of preamble test states  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186857 | 0311 | - | F | Introduction DCI format 1_0 for paging, SI and random access                  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186858 | 0312 | - | F | Correction to DCI format 1_1  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186859 | 0313 | - | F | Update IE RateMatchPattern  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186861 | 0315 | - | F | Correction of generic procedure parameter naming for test loop function       | 15.2.0 |
| 2018-12 | RAN#82 | R5-186862 | 0316 | - | F | Correction of test procedures to activate and deactivate UE Beamlock Function | 15.2.0 |
| 2018-12 | RAN#82 | R5-186893 | 0318 | - | F | Corrections to the notes in the OTA signal level tables                       | 15.2.0 |
| 2018-12 | RAN#82 | R5-186911 | 0320 | - | F | Add RRCSsetupComplete   | 15.2.0 |
| 2018-12 | RAN#82 | R5-186912 | 0321 | - | F | Add RRCSsetupRequest  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186913 | 0322 | - | F | Add RRCSsystemInfoRequest   | 15.2.0 |
| 2018-12 | RAN#82 | R5-186916 | 0323 | - | F | Add SecurityModeCommand   | 15.2.0 |
| 2018-12 | RAN#82 | R5-186918 | 0324 | - | F | Update SystemInformation  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186920 | 0325 | - | F | Add UEAssistanceInformation   | 15.2.0 |
| 2018-12 | RAN#82 | R5-186921 | 0326 | - | F | Update UECapabilityEnquiry  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186922 | 0327 | - | F | Update ULInformationTransfer  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186923 | 0328 | - | F | Update IE PTRS-UplinkConfig   | 15.2.0 |
| 2018-12 | RAN#82 | R5-186925 | 0330 | - | F | Update RRCHResumeRequest  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186929 | 0331 | - | F | Update PTRS-DownlinkConfig  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186936 | 0335 | - | F | Update PUCCH-SpatialRelationInfo  | 15.2.0 |
| 2018-12 | RAN#82 | R5-186987 | 0342 | - | F | Addition of SIB3 message_Resubmission of 185792                               | 15.2.0 |
| 2018-12 | RAN#82 | R5-186988 | 0343 | - | F | Addition of SIB5 message_Resubmission of 186054                               | 15.2.0 |
| 2018-12 | RAN#82 | R5-186989 | 0344 | - | F | Addition of SIB6 - SIB8 message_Resubmission of 186055                        | 15.2.0 |
| 2018-12 | RAN#82 | R5-186990 | 0345 | - | F | Addition of SIB9 message_Resubmission of 186056                               | 15.2.0 |
| 2018-12 | RAN#82 | R5-187026 | 0348 | - | F | Addition of P-Max in Test environment for RF test                             | 15.2.0 |
| 2018-12 | RAN#82 | R5-187028 | 0350 | - | F | Addition of test frequencies for SUL band n80                                 | 15.2.0 |
| 2018-12 | RAN#82 | R5-187030 | 0352 | - | F | Addition of test frequencies for SUL band n82                                 | 15.2.0 |
| 2018-12 | RAN#82 | R5-187031 | 0353 | - | F | Addition of test frequencies for SUL band n83                                 | 15.2.0 |
| 2018-12 | RAN#82 | R5-187032 | 0354 | - | F | Addition of test frequencies for SUL band n84                                 | 15.2.0 |
| 2018-12 | RAN#82 | R5-187033 | 0355 | - | F | Addition of test frequencies for SUL band n86                                 | 15.2.0 |
| 2018-12 | RAN#82 | R5-187110 | 0358 | - | F | Correction to default message contents for SRB3 configuration                 | 15.2.0 |
| 2018-12 | RAN#82 | R5-187159 | 0361 | - | F | Updates to Configuration Update 5GMM messages                                 | 15.2.0 |
| 2018-12 | RAN#82 | R5-187160 | 0362 | - | F | Updates to De-registration 5GMM messages                                      | 15.2.0 |
| 2018-12 | RAN#82 | R5-187161 | 0363 | - | F | Updates to Identity 5GMM messages   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187162 | 0364 | - | F | Updates to NAS Transport 5GMM messages  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187163 | 0365 | - | F | Updates to Notification 5GMM messages   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187164 | 0366 | - | F | Updates to PDU session authentication 5GSM messages                           | 15.2.0 |
| 2018-12 | RAN#82 | R5-187166 | 0368 | - | F | Updates to PDU session modification 5GSM messages                             | 15.2.0 |
| 2018-12 | RAN#82 | R5-187172 | 0374 | - | F | Removal of Editor's Notes in section 4.6.3                                    | 15.2.0 |

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| 2018-12 | RAN#82 | R5-187175 | 0377 | - | F | Addition and updates to Information Elements in section 4.6.5                                     | 15.2.0 |
| 2018-12 | RAN#82 | R5-187270 | 0381 | - | F | Updating 4.2.1 General functional requirements  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187271 | 0382 | - | F | Update the section for test equipment requirements for TRx  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187272 | 0383 | - | F | FR2 downlink signal level(38.508-1)   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187413 | 0389 | - | F | Uplink RNTI to valid value in TS 38.508-1   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187415 | 0390 | - | F | Update maxPayloadMinus1 in PUCCH config in TS 38.508-1  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187420 | 0393 | - | F | Addition of connection diagram for 2 TX UL MIMO   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187557 | 0396 | - | F | Addition of low and high test channel bandwidth in 38.508   | 15.2.0 |
| 2018-12 | RAN#82 | R5-188205 | 0397 | 1 | F | Updates to Annex B to add Permitted OTA Test Methods  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187610 | 0398 | - | F | Corrections to IEs part of PDSCH-ServingCellConfig, ServingCellConfig and ServingCellConfigCommon | 15.2.0 |
| 2018-12 | RAN#82 | R5-187659 | 0243 | 1 | F | Wordings for Uplink NAS messages  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187660 | 0247 | 1 | F | Default cell configurations for NAS   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187661 | 0248 | 1 | F | Update IE SI-SchedulingInfo   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187662 | 0349 | 1 | F | Addition of Combinations of system information blocks in 4.4.3.1.2                                | 15.2.0 |
| 2018-12 | RAN#82 | R5-187664 | 0263 | 1 | F | Correction to various Radio resource control IEs  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187665 | 0308 | 1 | F | Correction to DCI formats 0_0 and 0_1   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187666 | 0310 | 1 | F | Introduction of SDL and SUL cells in simulated cells in clause 4.4.2                              | 15.2.0 |
| 2018-12 | RAN#82 | R5-187667 | 0314 | 1 | F | Correction to RRC_IDLE procedure  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187668 | 0332 | 1 | F | Update CSI related information elements   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187669 | 0333 | 1 | F | Update ServingCellConfigCommon and TDD-UL-DL-Config   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187670 | 0334 | 1 | F | Update SRS-Config   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187671 | 0336 | 1 | F | Update some information elements for measurements   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187672 | 0337 | 1 | F | Update CellGroupConfig and related information elements   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187673 | 0338 | 1 | F | CR of NR 508-1 clause 4.6.2_SIB2, SIB4  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187674 | 0339 | 1 | F | CR of NR 508-1 Table 4.4.2-2_Default NR Cells parameters  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187675 | 0341 | 1 | F | Update RLC-Config   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187676 | 0357 | 1 | F | Specifying Test procedure to check that UE is camped on a new NR cell belonging to a new TA       | 15.2.0 |
| 2018-12 | RAN#82 | R5-187677 | 0360 | 1 | F | Updates to Authentication 5GMM messages   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187678 | 0369 | 1 | F | Updates to PDU session release 5GSM messages  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187679 | 0371 | 1 | F | Updates to Security mode 5GMM messages  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187680 | 0375 | 1 | F | Addition of new Information Elements in section 4.6.3   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187681 | 0379 | 1 | F | Updates to SIG OTA Calibration for FR2  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187682 | 0394 | 1 | F | Addition of default QoS configurations  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187720 | 0319 | 2 | F | Uplink PTRS disable for RF testing  | 15.2.0 |
| 2018-12 | RAN#82 | R5-188238 | 0242 | 2 | F | Addition to E-UTRA test frequencies for intra-band contiguous configuration for band 41           | 15.2.0 |
| 2018-12 | RAN#82 | R5-187723 | 0303 | 1 | F | Correction of test frequencies for NR band n257   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187724 | 0269 | 1 | F | New annex for NR test frequency calculations  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187725 | 0297 | 1 | F | Correction of test frequencies for NR band n71  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187745 | 0238 | 1 | F | Update SIB1   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187747 | 0257 | 1 | F | Correction to Signal levels for conducted testing   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187748 | 0270 | 1 | F | Updates to E-UTRA RRC_CONNECTED generic procedure   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187750 | 0275 | 1 | F | Add RRCCancelComplete   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187751 | 0278 | 1 | F | Update chapter 4.5.3 RRC_INACTIVE   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187752 | 0307 | 1 | F | Correction of test frequencies for signalling testing in clause 6                                 | 15.2.0 |
| 2018-12 | RAN#82 | R5-187753 | 0317 | 1 | F | Specifying Test procedure to check that UE is in RRC_IDLE state on a certain NR cell              | 15.2.0 |
| 2018-12 | RAN#82 | R5-187754 | 0329 | 1 | F | Update IE RLF-TimersAndConstants  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187755 | 0346 | 1 | F | Add RRCCancel   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187756 | 0347 | 1 | F | Update RRCCancelConfiguration   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187757 | 0356 | 1 | F | Update IE RadioBearerConfig   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187759 | 0370 | 1 | F | Updates to Registration 5GMM messages   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187760 | 0372 | 1 | F | Updates to Security protected 5GS NAS and 5GMM status messages                                    | 15.2.0 |
| 2018-12 | RAN#82 | R5-187761 | 0373 | 1 | F | Updates to Service Request 5GMM messages  | 15.2.0 |
| 2018-12 | RAN#82 | R5-187762 | 0376 | 1 | F | Addition and updates to Information Elements in section 4.6.4                                     | 15.2.0 |
| 2018-12 | RAN#82 | R5-187763 | 0388 | 1 | F | Addition of 5GS related new EEs to Test UICC definition   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187764 | 0395 | 1 | F | Update IE CellGroupConfig   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187802 | 0384 | 1 | F | Updating power levels for LTE Anchor Link   | 15.2.0 |
| 2018-12 | RAN#82 | R5-187887 | 0351 | 1 | F | Addition of test frequencies for SUL band n81   | 15.2.0 |
| 2018-12 | RAN#82 | R5-188031 | 0391 | 1 | F | Addition of 2TX_UL_MIMO condition   | 15.2.0 |
| 2018-12 | RAN#82 | R5-188107 | 0367 | 2 | F | Updates to PDU session establishment 5GSM messages  | 15.2.0 |
| 2018-12 | RAN#82 | R5-188122 | 0260 | 2 | F | Update chapter 4.5.2 RRC_IDLE   | 15.2.0 |
| 2018-12 | RAN#82 | R5-188123 | 0250 | 1 | F | Update chapter 4.5.4 RRC_CONNECTED  | 15.2.0 |
| 2019-03 | RAN#83 | R5-191047 | 0526 | - | F | Update IE PDCCH-ConfigCommon  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191048 | 0527 | - | F | Update IE RadioBearerConfig   | 15.3.0 |
| 2019-03 | RAN#83 | R5-191094 | 0529 | - | F | Updates of test channel bandwidth in TS 38.508-1  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191129 | 0530 | - | F | Update IE SDAP-Config   | 15.3.0 |
| 2019-03 | RAN#83 | R5-191145 | 0531 | - | F | Update IE CellGroupld   | 15.3.0 |

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| 2019-03 | RAN#83 | R5-191155 | 0532 | - | F | Correction to temperature and voltage of Common test environments     | 15.3.0 |
| 2019-03 | RAN#83 | R5-191187 | 0534 | - | F | Updates for Other SI support  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191189 | 0536 | - | F | Correction to RadioBearerConfig                                       | 15.3.0 |
| 2019-03 | RAN#83 | R5-191191 | 0538 | - | F | Correction to SystemInformation                                       | 15.3.0 |
| 2019-03 | RAN#83 | R5-191192 | 0539 | - | F | Correction to PUCCH-Config  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191193 | 0540 | - | F | Correction to SIB3 and SIB4   | 15.3.0 |
| 2019-03 | RAN#83 | R5-191194 | 0541 | - | F | Correction of PUSCH-TimeDomainResourceAllocationList                  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191195 | 0542 | - | F | Corrections and clarifications regarding DCI formats 0_1 and 1_1      | 15.3.0 |
| 2019-03 | RAN#83 | R5-191219 | 0545 | - | F | Updates to Authentication 5GMM messages                               | 15.3.0 |
| 2019-03 | RAN#83 | R5-191220 | 0546 | - | F | Updates to Configuration Update 5GMM messages                         | 15.3.0 |
| 2019-03 | RAN#83 | R5-191221 | 0547 | - | F | Updates to De-registration 5GMM messages                              | 15.3.0 |
| 2019-03 | RAN#83 | R5-191222 | 0548 | - | F | Updates to NAS transport 5GMM messages                                | 15.3.0 |
| 2019-03 | RAN#83 | R5-191223 | 0549 | - | F | Updates to PDU session establishment 5GSM messages                    | 15.3.0 |
| 2019-03 | RAN#83 | R5-191224 | 0550 | - | F | Updates to PDU session modification 5GSM messages                     | 15.3.0 |
| 2019-03 | RAN#83 | R5-191225 | 0551 | - | F | Updates to PDU session release 5GSM messages                          | 15.3.0 |
| 2019-03 | RAN#83 | R5-191226 | 0552 | - | F | Updates to Registration 5GMM messages                                 | 15.3.0 |
| 2019-03 | RAN#83 | R5-191227 | 0553 | - | F | Updates to Security Mode 5GMM messages                                | 15.3.0 |
| 2019-03 | RAN#83 | R5-191228 | 0554 | - | F | Updates to Security Protected 5GS NAS message                         | 15.3.0 |
| 2019-03 | RAN#83 | R5-191229 | 0555 | - | F | Updates to Service Request 5GMM messages                              | 15.3.0 |
| 2019-03 | RAN#83 | R5-191233 | 0556 | - | F | Update IE BWP-Id  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191234 | 0557 | - | F | Add IE RejectWaitTime   | 15.3.0 |
| 2019-03 | RAN#83 | R5-191235 | 0558 | - | F | Update IE ShortMAC-I  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191236 | 0559 | - | F | Update IE UE-TimersAndConstants                                       | 15.3.0 |
| 2019-03 | RAN#83 | R5-191237 | 0560 | - | F | Update IE PUCCH-ConfigCommon  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191242 | 0561 | - | F | Addition of Positioning specifications                                | 15.3.0 |
| 2019-03 | RAN#83 | R5-191243 | 0562 | - | F | Update AS security Algorithm for RF testing                           | 15.3.0 |
| 2019-03 | RAN#83 | R5-191274 | 0563 | - | F | Update of structure of test frequency clauses                         | 15.3.0 |
| 2019-03 | RAN#83 | R5-191280 | 0564 | - | F | Correction to UL configuration  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191281 | 0565 | - | F | Correction to default value of IE's in PDSCH-Config in Table 4.6.3-75 | 15.3.0 |
| 2019-03 | RAN#83 | R5-191301 | 0568 | - | F | Correction of test frequencies for signalling testing in clause 6     | 15.3.0 |
| 2019-03 | RAN#83 | R5-191302 | 0569 | - | F | Correction of test frequencies for EN-DC configuration DC_(n)41       | 15.3.0 |
| 2019-03 | RAN#83 | R5-191304 | 0571 | - | F | Correction of test frequencies for NR band n1                         | 15.3.0 |
| 2019-03 | RAN#83 | R5-191305 | 0572 | - | F | Correction of test frequencies for NR band n2                         | 15.3.0 |
| 2019-03 | RAN#83 | R5-191306 | 0573 | - | F | Correction of test frequencies for NR band n3                         | 15.3.0 |
| 2019-03 | RAN#83 | R5-191307 | 0574 | - | F | Correction of test frequencies for NR band n5                         | 15.3.0 |
| 2019-03 | RAN#83 | R5-191308 | 0575 | - | F | Correction of test frequencies for NR band n7                         | 15.3.0 |
| 2019-03 | RAN#83 | R5-191309 | 0576 | - | F | Correction of test frequencies for NR band n8                         | 15.3.0 |
| 2019-03 | RAN#83 | R5-191310 | 0577 | - | F | Correction of test frequencies for NR band n12                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191311 | 0578 | - | F | Correction of test frequencies for NR band n20                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191312 | 0579 | - | F | Correction of test frequencies for NR band n25                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191313 | 0580 | - | F | Correction of test frequencies for NR band n28                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191314 | 0581 | - | F | Correction of test frequencies for NR band n34                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191315 | 0582 | - | F | Correction of test frequencies for NR band n38                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191316 | 0583 | - | F | Correction of test frequencies for NR band n39                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191317 | 0584 | - | F | Correction of test frequencies for NR band n40                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191318 | 0585 | - | F | Correction of test frequencies for NR band n41                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191319 | 0586 | - | F | Introduction of test frequencies for NR band n50                      | 15.3.0 |
| 2019-03 | RAN#83 | R5-191320 | 0587 | - | F | Correction of test frequencies for NR band n51                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191321 | 0588 | - | F | Correction of test frequencies for NR band n66                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191322 | 0589 | - | F | Correction of test frequencies for NR band n70                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191323 | 0590 | - | F | Correction of test frequencies for NR band n71                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191324 | 0591 | - | F | Introduction of test frequencies for NR band n74                      | 15.3.0 |
| 2019-03 | RAN#83 | R5-191325 | 0592 | - | F | Correction of test frequencies for NR band n75                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191326 | 0593 | - | F | Correction of test frequencies for NR band n76                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191327 | 0594 | - | F | Correction of test frequencies for NR band n77                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191328 | 0595 | - | F | Correction of test frequencies for NR band n78                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191329 | 0596 | - | F | Correction of test frequencies for NR band n79                        | 15.3.0 |
| 2019-03 | RAN#83 | R5-191330 | 0597 | - | F | Correction of test frequencies for NR band n257                       | 15.3.0 |
| 2019-03 | RAN#83 | R5-191331 | 0598 | - | F | Correction of test frequencies for NR band n258                       | 15.3.0 |
| 2019-03 | RAN#83 | R5-191332 | 0599 | - | F | Correction of test frequencies for NR band n260                       | 15.3.0 |
| 2019-03 | RAN#83 | R5-191333 | 0600 | - | F | Correction of test frequencies for NR band n261                       | 15.3.0 |
| 2019-03 | RAN#83 | R5-191334 | 0601 | - | F | Correction of DCI format 1_0  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191352 | 0603 | - | F | Update CounterCheckResponse   | 15.3.0 |
| 2019-03 | RAN#83 | R5-191354 | 0604 | - | F | Add FailureInformation  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191355 | 0605 | - | F | Update LocationMeasurementIndication                                  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191356 | 0606 | - | F | Updates to section 4.8.3 (test USIM parameters)                       | 15.3.0 |
| 2019-03 | RAN#83 | R5-191360 | 0607 | - | F | Update MeasurementReport  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191361 | 0608 | - | F | Update MobilityFromNRCommand  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191364 | 0609 | - | F | Update Paging   | 15.3.0 |
| 2019-03 | RAN#83 | R5-191366 | 0610 | - | F | Update RRCSetupComplete   | 15.3.0 |

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| 2019-03 | RAN#83 | R5-191368 | 0611 | - | F | Update SecurityModeComplete   | 15.3.0 |
| 2019-03 | RAN#83 | R5-191370 | 0612 | - | F | Update SecurityModeFailure  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191371 | 0613 | - | F | Update UEAssistanceInformation  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191372 | 0614 | - | F | Update UECapabilityInformation  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191384 | 0616 | - | F | Correction to SecurityConfig of RadioBearerConfig                                       | 15.3.0 |
| 2019-03 | RAN#83 | R5-191385 | 0617 | - | F | Correction to SIB9  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191386 | 0618 | - | F | Correction to SRS-Config of BWP-UplinkDedicated   | 15.3.0 |
| 2019-03 | RAN#83 | R5-191446 | 0620 | - | F | Correction of default configuration of RRC IEs in 38.508-1                              | 15.3.0 |
| 2019-03 | RAN#83 | R5-191450 | 0621 | - | F | Addition of NR system information combination SIB6, SIB7                                | 15.3.0 |
| 2019-03 | RAN#83 | R5-191538 | 0624 | - | F | Update ULInformationTransfer  | 15.3.0 |
| 2019-03 | RAN#83 | R5-191539 | 0625 | - | F | Update IE QuantityConfig and CSI-ReportConfig   | 15.3.0 |
| 2019-03 | RAN#83 | R5-191620 | 0629 | - | F | Clarification for NR inter-band measurement test case configuration                     | 15.3.0 |
| 2019-03 | RAN#83 | R5-191762 | 0637 | - | F | Editorial update in MeasObjectNR and ReportConfigNR                                     | 15.3.0 |
| 2019-03 | RAN#83 | R5-191763 | 0638 | - | F | Update ReportConfigNR and TimeToTrigger   | 15.3.0 |
| 2019-03 | RAN#83 | R5-192271 | 0570 | 1 | F | Correction of test frequencies for EN-DC configuration DC_(n)71                         | 15.3.0 |
| 2019-03 | RAN#83 | R5-192272 | 0602 | 1 | F | Update chapter 4.5 RRC Connected initiation   | 15.3.0 |
| 2019-03 | RAN#83 | R5-192273 | 0626 | 1 | F | Update RRCRelease   | 15.3.0 |
| 2019-03 | RAN#83 | R5-192274 | 0615 | 1 | F | Correction to NR SchedulingRequestResourceConfig  | 15.3.0 |
| 2019-03 | RAN#83 | R5-192275 | 0627 | 1 | F | Update IE I-RNTI-Value  | 15.3.0 |
| 2019-03 | RAN#83 | R5-192276 | 0628 | 1 | F | Update IE ShortI-RNTI-Value   | 15.3.0 |
| 2019-03 | RAN#83 | R5-192277 | 0630 | 1 | F | Updates to test environments for Signalling test  | 15.3.0 |
| 2019-03 | RAN#83 | R5-192278 | 0633 | 1 | F | Addition of USIM Profiles for Signaling TC  | 15.3.0 |
| 2019-03 | RAN#83 | R5-192279 | 0636 | 1 | F | Update QoS Configuration  | 15.3.0 |
| 2019-03 | RAN#83 | R5-192280 | 0643 | 1 | F | Update to of Generic procedure E-UTRA RRC_IDLE  | 15.3.0 |
| 2019-03 | RAN#83 | R5-192281 | 0644 | 1 | F | Introduction of EAP AKA   | 15.3.0 |
| 2019-03 | RAN#83 | R5-192290 | 0655 | - | F | Update chapter 4.5 RRC_INACTIVE   | 15.3.0 |
| 2019-03 | RAN#83 | R5-192363 | 0631 | 1 | F | Updating P-Max IE   | 15.3.0 |
| 2019-03 | RAN#83 | R5-192364 | 0632 | 2 | F | Updating IEs part of SearchSpace  | 15.3.0 |
| 2019-03 | RAN#83 | R5-192400 | 0528 | 1 | F | Setup diagram for receiver test using spectrum analyzer                                 | 15.3.0 |
| 2019-03 | RAN#83 | R5-192541 | 0622 | 1 | F | Connection diagrams for RRM tests   | 15.3.0 |
| 2019-03 | RAN#83 | R5-192542 | 0646 | 1 | F | Antenna Connection diagram for UE part for RRM  | 15.3.0 |
| 2019-03 | RAN#83 | R5-192543 | 0649 | 1 | F | Connection diagram for FR1 demod test cases   | 15.3.0 |
| 2019-03 | RAN#83 | R5-192705 | 0645 | 1 | F | Introduction of Non 3GPP Access over WLAN   | 15.3.0 |
| 2019-03 | RAN#83 | R5-192735 | 0533 | 1 | F | Correction to PUSCH-Config  | 15.3.0 |
| 2019-03 | RAN#83 | R5-192736 | 0535 | 1 | F | Addition of details on Test State 0   | 15.3.0 |
| 2019-03 | RAN#83 | R5-192737 | 0537 | 1 | F | Correction of CellGroupConfig tables and logical channel identities                     | 15.3.0 |
| 2019-03 | RAN#83 | R5-192738 | 0543 | 1 | F | Additions and updates to UE capability Information Elements                             | 15.3.0 |
| 2019-03 | RAN#83 | R5-192739 | 0544 | 1 | F | Updates and additions of default QoS configurations                                     | 15.3.0 |
| 2019-03 | RAN#83 | R5-192740 | 0566 | 1 | F | Update chapter 4.5 General for PDUs   | 15.3.0 |
| 2019-03 | RAN#83 | R5-192741 | 0567 | 1 | F | Update of Annex C on calculation of test frequencies                                    | 15.3.0 |
| 2019-03 | RAN#83 | R5-192742 | 0619 | 1 | F | Correction to schedulingRequestID Configuration   | 15.3.0 |
| 2019-03 | RAN#83 | R5-192743 | 0639 | 1 | F | Addition of Switch/Power UE procedures  | 15.3.0 |
| 2019-03 | RAN#83 | R5-192744 | 0640 | 1 | F | Update to Test procedure to check that UE is camped on a new cell belonging to a new TA | 15.3.0 |
| 2019-03 | RAN#83 | R5-192745 | 0641 | 1 | F | Update to Test procedure to check that UE is in state 5GC RRC_IDLE on a certain cell    | 15.3.0 |
| 2019-03 | RAN#83 | R5-192846 | 0648 | 1 | F | Updates to Annex B to add Permitted OTA Test Methods                                    | 15.3.0 |
| 2019-03 | RAN#83 | -         | -    | - | - | Editorial updates of table numbering  | 15.3.0 |
| 2019-06 | RAN#84 | R5-193537 | 0680 | - | F | Remove unused DCI formats from 38.508-1   | 15.4.0 |
| 2019-06 | RAN#84 | R5-193540 | 0681 | - | F | Adding setup diagram for Receiver performance tests 2x2                                 | 15.4.0 |
| 2019-06 | RAN#84 | R5-193542 | 0682 | - | F | Remove brackets from parameters for DCI formats for scheduling                          | 15.4.0 |
| 2019-06 | RAN#84 | R5-193613 | 0691 | - | F | Update default configuration of QuantityConfig  | 15.4.0 |
| 2019-06 | RAN#84 | R5-193681 | 0693 | - | F | Update chapter 4.5.3 RRC_INACTIVE procedures  | 15.4.0 |
| 2019-06 | RAN#84 | R5-193682 | 0694 | - | F | Update chapter 4.5.4 RRC_CONNECTED procedures   | 15.4.0 |
| 2019-06 | RAN#84 | R5-193683 | 0695 | - | F | Update chapter 4.5.5 SWITCHED_OFF procedures  | 15.4.0 |
| 2019-06 | RAN#84 | R5-193690 | 0696 | - | F | Resubmission: Connection diagram for 1x2 Demod test cases                               | 15.4.0 |
| 2019-06 | RAN#84 | R5-193734 | 0701 | - | F | Update IE I-RNTI-Value  | 15.4.0 |
| 2019-06 | RAN#84 | R5-193735 | 0702 | - | F | Update IE ShortI-RNTI-Value   | 15.4.0 |
| 2019-06 | RAN#84 | R5-193746 | 0710 | - | F | Update IE SubcarrierSpacing   | 15.4.0 |
| 2019-06 | RAN#84 | R5-193813 | 0711 | - | F | Update of USIM EF5GS3GPPLOCI & EF5GSN3GPPLOCI   | 15.4.0 |
| 2019-06 | RAN#84 | R5-193828 | 0713 | - | F | Add IE MultiFrequencyBandListNR-SIB   | 15.4.0 |
| 2019-06 | RAN#84 | R5-193829 | 0714 | - | F | Add IE NR-NS-PmaxList   | 15.4.0 |
| 2019-06 | RAN#84 | R5-193843 | 0716 | - | F | Update IE ServingCellConfig   | 15.4.0 |
| 2019-06 | RAN#84 | R5-193862 | 0717 | - | F | Corrections to References   | 15.4.0 |
| 2019-06 | RAN#84 | R5-193980 | 0725 | - | F | New test procedure for Registration Reject  | 15.4.0 |
| 2019-06 | RAN#84 | R5-193981 | 0726 | - | F | Updates to test procedure 4.9.1   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194038 | 0728 | - | F | Editorial Correction - USIM Profiles for Signaling TC                                   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194040 | 0729 | - | F | Correction to QoS Configuration   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194086 | 0733 | - | F | Update K2 value to align with RF DL RMC   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194087 | 0734 | - | F | Update aggregationlevel2 in SearchSpace IE  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194303 | 0740 | - | F | TDD-UL-DL-Config for FR1 SCS 60kHz  | 15.4.0 |

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| 2019-06 | RAN#84 | R5-194359 | 0742 | - | F | Removal of column for Number of PDU sessions established from tables for Test States                                     | 15.4.0 |
| 2019-06 | RAN#84 | R5-194362 | 0743 | - | F | Editorial correction to test frequency clauses   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194364 | 0744 | - | F | Update of test frequencies for EN-DC combination DC_41A_n41A   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194367 | 0745 | - | F | Common procedure to configure SCC for CA RF testing  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194369 | 0746 | - | F | Introduction of test frequencies for inter-band Rel-15 EN-DC two bands configurations                                    | 15.4.0 |
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| 2019-06 | RAN#84 | R5-194420 | 0751 | - | F | Update IE BWP-Downlink   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194435 | 0752 | - | F | Update IE BWP-Id   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194438 | 0755 | - | F | Updates to UE 4.6.5 Other Information Elements   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194441 | 0757 | - | F | Update IE BWP-Uplink   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194479 | 0758 | - | F | Editorial updates to 4.7.1 Contents of 5GMM messages   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194480 | 0759 | - | F | Editorial updates to 4.7.2 Contents of 5GSM messages   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194510 | 0762 | - | F | Update of Switch off - Power off procedure in RRC_CONNECTED  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194539 | 0767 | - | F | Introduction of test frequencies for EN-DC CA configuration DC_30A_n260(A-I)   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194541 | 0768 | - | F | Antenna Connection diagram for TE part for RRM   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194709 | 0785 | - | F | Update 38.508 RF and RRM clauses with agreed recommendation to configure UE as non-IMS                                   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194783 | 0774 | - | F | Introduction of test frequencies for NR band n50 and signalling testing  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194784 | 0775 | - | F | Introduction of test frequencies for NR band n74 and signalling testing  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194790 | 0778 | - | F | Updates to power allocations   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194791 | 0779 | - | F | Update of DownlinkConfigCommonSIB  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194794 | 0684 | 1 | F | Update IE PDSCH-Config   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194795 | 0687 | 1 | F | Update NR MeasObjectNR   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194796 | 0690 | 1 | F | Update default configuration of ReportConfigNR   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194797 | 0692 | 1 | F | Update chapter 4.5.2 RRC_IDLE procedures   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194798 | 0704 | 1 | F | Correction to the note associated to the Table 4.7.1-2   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194800 | 0708 | 1 | F | Update IE MIB  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194801 | 0709 | 1 | F | Update IE SchedulingRequestResourceConfig  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194802 | 0712 | 1 | F | Correct clause numbers in 4.5A   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194803 | 0718 | 1 | F | Update IE ServingCellConfigCommon  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194804 | 0721 | 1 | F | Update IE FrequencyInfoUL  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194805 | 0722 | 1 | F | Update IE FrequencyInfoUL-SIB  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194806 | 0723 | 1 | F | Update generic procedures chapter general  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194807 | 0724 | 1 | F | Update chapter 4.5.2 RRC_IDLE Initiation   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194808 | 0730 | 1 | F | Updates to RadioBearerConfig   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194809 | 0732 | 1 | F | Updates to PhysicalCellGroupConfig   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194810 | 0739 | 1 | F | New test procedure for RRC_CONNECTED   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194811 | 0741 | 1 | F | Updated IE MeasObjectEUTRA and ReportConfigInterRAT  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194812 | 0753 | 1 | F | Updates to Registration 5GMM messages  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194813 | 0754 | 1 | F | Updates to UE 4.6.4 UE Capability Information Elements   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194814 | 0760 | 1 | F | New Test procedure for UE for Tracking area updating / inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode | 15.4.0 |
| 2019-06 | RAN#84 | R5-194817 | 0777 | 1 | F | New Test procedure for UE for Tracking area updating / inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode | 15.4.0 |
| 2019-06 | RAN#84 | R5-194821 | 0780 | - | F | Introducing conditions for Handover in RRCReconfiguration and RadioBearerConfig  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194824 | 0781 | - | F | Updates to Service Request 5GMM message  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194879 | 0735 | 1 | F | Updates to Multi-Cell SIG OTA testing for FR2  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194881 | 0763 | 1 | F | Introduction of test frequencies for NR CA configuration CA_n257B  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194882 | 0764 | 1 | F | Introduction of test frequencies for NR CA configuration CA_n260B  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194883 | 0765 | 1 | F | Introduction of test frequencies for NR CA configuration CA_n260I  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194884 | 0766 | 1 | F | Introduction of test frequencies for NR CA configuration CA_n261B  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194885 | 0782 | 1 | F | Introduction of test frequencies for NR CA configuration CA_n260(A-I)  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194889 | 0737 | 1 | F | corrections to Non 3GPP Access over WLAN procedures  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194894 | 0783 | - | F | Update FFS in ResumeCause  | 15.4.0 |
| 2019-06 | RAN#84 | R5-194896 | 0784 | - | F | Updates to reference QoS configurations for EPS interworking   | 15.4.0 |
| 2019-06 | RAN#84 | R5-194902 | 0685 | 1 | F | Correction of Setup Diagrams for Receiver tests using Signal Generator in 38.508-1                                       | 15.4.0 |
| 2019-06 | RAN#84 | R5-195095 | 0750 | 1 | F | Introduction of Connection diagram for 2x4 and 4x4 Demod test cases  | 15.4.0 |
| 2019-06 | RAN#84 | R5-195322 | 0686 | 1 | F | Update NR SIB1   | 15.4.0 |
| 2019-06 | RAN#84 | R5-195323 | 0703 | 1 | F | Update IE CommonCellGroupConfig  | 15.4.0 |
| 2019-06 | RAN#84 | R5-195324 | 0715 | 1 | F | Update default configuration of MeasGapConfig  | 15.4.0 |
| 2019-06 | RAN#84 | R5-195325 | 0719 | 1 | F | Addition of Switch off / Power off procedure in RRC_INACTIVE   | 15.4.0 |

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| 2019-06 | RAN#84 | R5-195326 | 0720 | 1 | F | Update of SIB5   | 15.4.0 |
| 2019-06 | RAN#84 | R5-195327 | 0731 | 1 | F | Updates to RLC-BearerConfig  | 15.4.0 |
| 2019-06 | RAN#84 | R5-195328 | 0756 | 1 | F | Updates to PDU session establishment 5GSM messages                                     | 15.4.0 |
| 2019-06 | RAN#84 | R5-195329 | 0773 | 1 | F | Introduction of test frequencies for inter-RAT signalling testing                      | 15.4.0 |
| 2019-06 | RAN#84 | R5-195330 | 0776 | 1 | F | Correction to PUSCH-Config   | 15.4.0 |
| 2019-06 | RAN#84 | R5-195426 | 0727 | 2 | F | 38.508-1 implementation of FR2 UL demod CTA tests using single pol Rx TE               | 15.4.0 |
| 2019-06 | RAN#84 | R5-195427 | 0772 | 2 | F | Addition of message contents needed for DEMOD test cases                               | 15.4.0 |
| 2019-06 | RAN#84 | R5-194370 | 0747 | - | F | Introduction of test frequencies for inter-band Rel-16 EN-DC two bands configurations  | 16.0.0 |
| 2019-06 | RAN#84 | R5-194371 | 0748 | - | F | Introduction of test frequencies for inter-band Rel-16 EN-DC five bands configurations | 16.0.0 |
| 2019-06 | RAN#84 | R5-194373 | 0749 | - | F | Introduction of test frequencies for NR CA configuration CA_n41C                       | 16.0.0 |
| 2019-09 | RAN#85 | R5-195696 | 0795 | - | F | Update IE PDCP-Config  | 16.1.0 |
| 2019-09 | RAN#85 | R5-195711 | 0797 | - | F | Add IE CGI-InfoEUTRA   | 16.1.0 |
| 2019-09 | RAN#85 | R5-195729 | 0798 | - | F | Update IE CGI-Info   | 16.1.0 |
| 2019-09 | RAN#85 | R5-195730 | 0799 | - | F | Update IE MeasResults  | 16.1.0 |
| 2019-09 | RAN#85 | R5-195731 | 0800 | - | F | Update of 4.3.1.0A mid test CBW in 38.508-1  | 16.1.0 |
| 2019-09 | RAN#85 | R5-195747 | 0803 | - | F | Update IE MeasResultCellListSFTD   | 16.1.0 |
| 2019-09 | RAN#85 | R5-195748 | 0804 | - | F | Add IE MeasResultCellListSFTD-EUTRA  | 16.1.0 |
| 2019-09 | RAN#85 | R5-195749 | 0805 | - | F | Add IE MeasResult2EUTRA  | 16.1.0 |
| 2019-09 | RAN#85 | R5-195750 | 0806 | - | F | Add IE MeasResult2NR   | 16.1.0 |
| 2019-09 | RAN#85 | R5-195751 | 0807 | - | F | Add IE SK-Counter  | 16.1.0 |
| 2019-09 | RAN#85 | R5-195752 | 0808 | - | F | Update IE SS-RSSI-Measurement  | 16.1.0 |
| 2019-09 | RAN#85 | R5-195792 | 0811 | - | F | Update MeasurementReport   | 16.1.0 |
| 2019-09 | RAN#85 | R5-195885 | 0814 | - | F | Update RRCCResume  | 16.1.0 |
| 2019-09 | RAN#85 | R5-195886 | 0815 | - | F | Editorial update RRCCReconfigurationComplete   | 16.1.0 |
| 2019-09 | RAN#85 | R5-195887 | 0816 | - | F | Editorial update RRCCReject  | 16.1.0 |
| 2019-09 | RAN#85 | R5-195888 | 0817 | - | F | Editorial update RRCCRelease   | 16.1.0 |
| 2019-09 | RAN#85 | R5-195889 | 0818 | - | F | Add SCGFailureInformation  | 16.1.0 |
| 2019-09 | RAN#85 | R5-195890 | 0819 | - | F | Add SCGFailureInformationEUTRA   | 16.1.0 |
| 2019-09 | RAN#85 | R5-195895 | 0820 | - | F | Update UECapabilityEnquiry   | 16.1.0 |
| 2019-09 | RAN#85 | R5-195909 | 0821 | - | F | Editorial update UECapabilityInformation   | 16.1.0 |
| 2019-09 | RAN#85 | R5-195910 | 0822 | - | F | Add ULInformationTransferMRDC  | 16.1.0 |
| 2019-09 | RAN#85 | R5-195926 | 0823 | - | F | Editorial update RRC IEs   | 16.1.0 |
| 2019-09 | RAN#85 | R5-195927 | 0824 | - | F | Editorial update S-NSSAI   | 16.1.0 |
| 2019-09 | RAN#85 | R5-195944 | 0826 | - | F | Correction to ReportConfigNR   | 16.1.0 |
| 2019-09 | RAN#85 | R5-195945 | 0827 | - | F | Updates to default configurations for 5GC NAS test cases                               | 16.1.0 |
| 2019-09 | RAN#85 | R5-196030 | 0829 | - | F | Handling of thresholds in FR2 when Events A3 and A6 are inter-frequency                | 16.1.0 |
| 2019-09 | RAN#85 | R5-196031 | 0830 | - | F | Adding references to TS 38.508-1   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196136 | 0836 | - | F | Addition new NR cell for SS-RSRP RRM tests   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196148 | 0837 | - | F | Update of Annex C for selecting SSB location for cells not selectable as PCell         | 16.1.0 |

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| 2019-09 | RAN#85 | R5-196158 | 0838 | - | F | Correction of references to test frequency tables  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196159 | 0839 | - | F | Correction of clause numbers for test frequencies for Non-3GPP Access                                | 16.1.0 |
| 2019-09 | RAN#85 | R5-196168 | 0840 | - | F | Correction of test frequency parameters for SSB location for NR band n1 and SCS 60kHz                | 16.1.0 |
| 2019-09 | RAN#85 | R5-196169 | 0841 | - | F | Correction of test frequency parameters for SSB location for NR band n2 and SCS 60kHz                | 16.1.0 |
| 2019-09 | RAN#85 | R5-196170 | 0842 | - | F | Correction of test frequency parameters for SSB location for NR band n3 and SCS 60kHz                | 16.1.0 |
| 2019-09 | RAN#85 | R5-196171 | 0843 | - | F | Correction of test frequency parameters for SSB location for NR band n7 and SCS 60kHz                | 16.1.0 |
| 2019-09 | RAN#85 | R5-196172 | 0844 | - | F | Correction of test frequency parameters for SSB location for NR band n25 and SCS 60kHz               | 16.1.0 |
| 2019-09 | RAN#85 | R5-196174 | 0846 | - | F | Correction of test frequency parameters for SSB location for NR band n38 and SCS 60kHz               | 16.1.0 |
| 2019-09 | RAN#85 | R5-196175 | 0847 | - | F | Correction of test frequency parameters for SSB location for NR band n39 and SCS 60kHz               | 16.1.0 |
| 2019-09 | RAN#85 | R5-196176 | 0848 | - | F | Correction of test frequency parameters for SSB location for NR band n40 and SCS 60kHz               | 16.1.0 |
| 2019-09 | RAN#85 | R5-196177 | 0849 | - | F | Correction of test frequency parameters for SSB location for NR band n41 and SCS 60kHz               | 16.1.0 |
| 2019-09 | RAN#85 | R5-196178 | 0850 | - | F | Correction of test frequency parameters for SSB location for NR band n50 and SCS 60kHz               | 16.1.0 |
| 2019-09 | RAN#85 | R5-196179 | 0851 | - | F | Correction of test frequency parameters for SSB location for NR band n66 and SCS 60kHz               | 16.1.0 |
| 2019-09 | RAN#85 | R5-196180 | 0852 | - | F | Correction of test frequency parameters for SSB location for NR band n70 and SCS 60kHz               | 16.1.0 |
| 2019-09 | RAN#85 | R5-196181 | 0853 | - | F | Correction of test frequency parameters for SSB location for NR band n74 and SCS 60kHz               | 16.1.0 |
| 2019-09 | RAN#85 | R5-196182 | 0854 | - | F | Correction of test frequency parameters for SSB location for NR band n75 and SCS 15kHz and SCS 60kHz | 16.1.0 |
| 2019-09 | RAN#85 | R5-196183 | 0855 | - | F | Correction of test frequency parameters for SSB location for NR band n77 and SCS 60kHz               | 16.1.0 |
| 2019-09 | RAN#85 | R5-196184 | 0856 | - | F | Correction of test frequency parameters for SSB location for NR band n78 and SCS 60kHz               | 16.1.0 |
| 2019-09 | RAN#85 | R5-196185 | 0857 | - | F | Correction of test frequency parameters for SSB location for NR band n79 and SCS 60kHz               | 16.1.0 |
| 2019-09 | RAN#85 | R5-196197 | 0860 | - | F | Update IE ServingCellConfigCommon  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196198 | 0861 | - | F | Update IE SubcarrierSpacing  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196262 | 0863 | - | F | Editorial update IE RLC-BearerConfig   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196289 | 0864 | - | F | Update chapter 4.5A.2 UE-requested PDU session establishment procedure                               | 16.1.0 |
| 2019-09 | RAN#85 | R5-196310 | 0867 | - | F | Addition of SUL bands for protocol testing in clause 6.2.3.1   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196311 | 0868 | - | F | Update of test frequency parameters for NR CA configuration CA_n41C                                  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196315 | 0872 | - | F | Update of test frequency parameters for NR CA configuration CA_n260(A-I)                             | 16.1.0 |
| 2019-09 | RAN#85 | R5-196316 | 0873 | - | F | Introduction of test frequencies for NR CA configuration CA_n261B                                    | 16.1.0 |

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| 2019-09 | RAN#85 | R5-196317 | 0874 | - | F | Update of test frequency table for EN-DC configuration DC_41A_n41A for BCS1  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196318 | 0875 | - | F | Correction of test frequency parameters for EN-DC configuration DC_(n)41AA   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196319 | 0876 | - | F | Correction of test frequency parameters for EN-DC configuration DC_(n)71AA   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196468 | 0885 | - | F | Introduction of test frequencies for NR CA configuration CA_n258B and CA_n258C   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196469 | 0886 | - | F | Introduction of test frequencies for NR CA configuration CA_n258G to CA_n258M  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196470 | 0887 | - | F | Introduction of test frequencies for NR CA configuration CA_n260G to CA_n260I  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196472 | 0889 | - | F | Introduction of test frequencies for NR CA configuration CA_n261G to CA_n261I  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196473 | 0890 | - | F | Introduction of test frequencies for NR CA configuration CA_n261O to CA_n261Q  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196490 | 0894 | - | F | Introduction of test frequencies for NR CA configuration CA_n78C   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196539 | 0895 | - | F | Update to 38.508-1 for Demod specific message contents   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196581 | 0897 | - | F | Removing brackets from values for DCI formats  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196597 | 0899 | - | F | Cleanup of editor note of EFOPL5G  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196637 | 0900 | - | F | Update of default messages for EMERGENCY services test scenarios   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196641 | 0904 | - | F | Update of Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode | 16.1.0 |
| 2019-09 | RAN#85 | R5-196654 | 0905 | - | F | Editorial correction of reference test conditions  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196751 | 0911 | - | F | AP#82.01: Update default DCI format to 0_1 / 1_1 in TS 38.508-1 for SIG test cases   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196824 | 0917 | - | F | Updates to UE 4.6.4 UE Capability Information Elements   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196825 | 0918 | - | F | Addition of default test control messages  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196873 | 0922 | - | F | Introduction of test frequencies for NR CA configuration CA_n258D to CA_n258F  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196874 | 0923 | - | F | Introduction of test frequencies for NR CA configuration CA_n260D to CA_n260F  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196875 | 0924 | - | F | Introduction of test frequencies for NR CA configuration CA_n260O to CA_n260Q  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196942 | 0927 | - | F | Correction of clause 2 and 4.3 in 38.508-1   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196980 | 0786 | 1 | F | Using generic procedure for IMS registration to 5GS  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196981 | 0788 | 1 | F | Update of SIB2   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196982 | 0790 | 1 | F | Update of SIB5   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196984 | 0792 | 1 | F | Update of frequency definition for Inter-RAT test cases  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196985 | 0793 | 1 | F | Update IE CellGroupConfig  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196986 | 0858 | 1 | F | Update MIB   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196987 | 0865 | 1 | F | Update chapter 4.5.4 RRC_CONNECTED procedures  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196988 | 0831 | 1 | F | Addition of IE MasterKeyUpdate   | 16.1.0 |

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| 2019-09 | RAN#85 | R5-196990 | 0833 | 1 | F | USIM Configuration for Signalling Test Cases   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196991 | 0835 | 1 | F | Correction to SIG OTA UE Orientation procedure   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196992 | 0878 | 1 | F | Addition of New Test Procedure - Response\No response to Paging for 5GC NAS testing  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196994 | 0913 | 1 | F | Update IE ServingCellConfig  | 16.1.0 |
| 2019-09 | RAN#85 | R5-196995 | 0910 | 1 | F | Corrections to DCI_1_0 configuration   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196996 | 0919 | 1 | F | Updates to generic procedure using SERVICE REQUEST procedure   | 16.1.0 |
| 2019-09 | RAN#85 | R5-196997 | 0901 | 1 | F | Introduction of Test Procedure for IMS Emergency call establishment in 5GC NORMAL-SERVICE                                      | 16.1.0 |
| 2019-09 | RAN#85 | R5-196998 | 0903 | 1 | F | Update of Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode | 16.1.0 |
| 2019-09 | RAN#85 | R5-197014 | 0928 | - | F | Addition of NR CA test frequencies for protocol testing in clause 6.2.3  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197099 | 0929 | - | F | Correction to Switch off-Power off procedure in RRC_CONNECTED  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197104 | 0884 | 1 | F | Introduction of test frequencies for NR CA configuration CA_n257G to CA_n257M  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197106 | 0892 | 1 | F | Update of EN-DC inter-band configurations in clause 4.3.1  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197139 | 0891 | 2 | F | Update of NR CA inter-band configurations in clause 4.3.1  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197226 | 0915 | 1 | F | changes for Non 3GPP Access over WLAN  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197230 | 0883 | 1 | F | Introduction of test frequencies for NR CA configuration CA_n257D to CA_n257F  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197231 | 0869 | 1 | F | Update of test frequency parameters for NR CA configuration CA_n257B and CA_n257C  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197232 | 0870 | 1 | F | Introduction of test frequencies for NR CA configuration CA_n260B and CA_n260C   | 16.1.0 |
| 2019-09 | RAN#85 | R5-197233 | 0888 | 1 | F | Introduction of test frequencies for NR CA configuration CA_n260J to CA_n260M  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197234 | 0813 | 1 | F | Update RRCCoreConfiguration  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197235 | 0796 | 1 | F | Update RadioBearerConfig-DRB   | 16.1.0 |
| 2019-09 | RAN#85 | R5-197236 | 0825 | 1 | F | Update RRCCoreConfiguration-HO   | 16.1.0 |
| 2019-09 | RAN#85 | R5-197241 | 0791 | 1 | F | Update of EUTRA-AllowedMeasBandwidth   | 16.1.0 |
| 2019-09 | RAN#85 | R5-197243 | 0809 | 1 | F | Addition of Delta to signalling threshold in System Information in FR2   | 16.1.0 |
| 2019-09 | RAN#85 | R5-197244 | 0866 | 1 | F | Correction to REGISTRATION REJECT message  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197246 | 0902 | 1 | F | Introduction of Test Procedure for IMS Emergency call establishment in 5GC LIMITED-SERVICE or NO-SUPI                          | 16.1.0 |
| 2019-09 | RAN#85 | R5-197296 | 0898 | 2 | F | Update of PHR-Config   | 16.1.0 |
| 2019-09 | RAN#85 | R5-197300 | 0787 | 1 | F | 4x2 Connection Diagram for demodulation tests  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197301 | 0862 | 1 | F | Correction to Section 5.4.2 Message definition for Performance Test  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197302 | 0882 | 1 | F | Addition of FR2 CA connection diagram  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197303 | 0920 | 1 | F | Corrections to test frequencies and formulas   | 16.1.0 |
| 2019-09 | RAN#85 | R5-197304 | 0896 | 1 | F | Removing IOT bit information from test channel bandwidth tables  | 16.1.0 |
| 2019-09 | RAN#85 | R5-197305 | 0908 | 1 | F | Addition of SMTC Configuration for RRM test cases  | 16.1.0 |

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| 2019-09 | RAN#85 | R5-197507 | 0906 | 1 | F | Addition of TDD UL DL Config for RRM test cases                       | 16.1.0 |
| 2019-09 | RAN#85 | R5-197508 | 0907 | 1 | F | Addition of FilterCoefficient configuration for RRM test cases        | 16.1.0 |
| 2019-09 | RAN#85 | R5-197638 | 0881 | 2 | F | Addition of FR1 CA connection diagram                                 | 16.1.0 |
| 2019-10 | RAN#85 | -         | -    | - | - | Implementation fixes  | 16.1.1 |
| 2019-12 | RAN#86 | R5-197727 | 0932 | - | F | Editorial update IE BWP-Id  | 16.2.0 |
| 2019-12 | RAN#86 | R5-197751 | 0933 | - | F | Editorial update IE PDSCH-TimeDomainResourceAllocationList            | 16.2.0 |
| 2019-12 | RAN#86 | R5-197835 | 0937 | - | F | Correction to IE ReportConfigNR                                       | 16.2.0 |
| 2019-12 | RAN#86 | R5-197897 | 0940 | - | F | Editorial update IE CodebookConfig                                    | 16.2.0 |
| 2019-12 | RAN#86 | R5-197932 | 0946 | - | F | Editorial update IE PDSCH-Config                                      | 16.2.0 |
| 2019-12 | RAN#86 | R5-197967 | 0948 | - | F | Update of Annex C on calculation of test frequencies and parameters   | 16.2.0 |
| 2019-12 | RAN#86 | R5-197968 | 0949 | - | F | Correction of test frequency parameters for NR band n1                | 16.2.0 |
| 2019-12 | RAN#86 | R5-197969 | 0950 | - | F | Correction of test frequency parameters for NR band n2                | 16.2.0 |
| 2019-12 | RAN#86 | R5-197970 | 0951 | - | F | Correction of test frequency parameters for NR band n3                | 16.2.0 |
| 2019-12 | RAN#86 | R5-197971 | 0952 | - | F | Correction of test frequency parameters for NR band n5                | 16.2.0 |
| 2019-12 | RAN#86 | R5-197972 | 0953 | - | F | Correction of test frequency parameters for NR band n7                | 16.2.0 |
| 2019-12 | RAN#86 | R5-197973 | 0954 | - | F | Correction of test frequency parameters for NR band n8                | 16.2.0 |
| 2019-12 | RAN#86 | R5-197974 | 0955 | - | F | Correction of test frequency parameters for NR band n12               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197975 | 0956 | - | F | Correction of test frequency parameters for NR band n20               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197976 | 0957 | - | F | Correction of test frequency parameters for NR band n25               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197977 | 0958 | - | F | Correction of test frequency parameters for NR band n28               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197978 | 0959 | - | F | Correction of test frequency parameters for NR band n34               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197979 | 0960 | - | F | Correction of test frequency parameters for NR band n38               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197980 | 0961 | - | F | Correction of test frequency parameters for NR band n39               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197981 | 0962 | - | F | Correction of test frequency parameters for NR band n40               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197982 | 0963 | - | F | Correction of test frequency parameters for NR band n41               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197983 | 0964 | - | F | Correction of test frequency parameters for NR band n50               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197984 | 0965 | - | F | Correction of test frequency parameters for NR band n51               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197985 | 0966 | - | F | Correction of test frequency parameters for NR band n66               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197986 | 0967 | - | F | Correction of test frequency parameters for NR band n70               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197987 | 0968 | - | F | Correction of test frequency parameters for NR band n71               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197988 | 0969 | - | F | Correction of test frequency parameters for NR band n74               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197989 | 0970 | - | F | Correction of test frequency parameters for NR band n75 (SDL)         | 16.2.0 |
| 2019-12 | RAN#86 | R5-197990 | 0971 | - | F | Correction of test frequency parameters for NR band n76 (SDL)         | 16.2.0 |
| 2019-12 | RAN#86 | R5-197991 | 0972 | - | F | Correction of test frequency parameters for NR band n77               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197992 | 0973 | - | F | Correction of test frequency parameters for NR band n78               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197993 | 0974 | - | F | Correction of test frequency parameters for NR band n79               | 16.2.0 |
| 2019-12 | RAN#86 | R5-197994 | 0975 | - | F | Editorial correction to note 1 in frequency tables for NR bands n257, | 16.2.0 |

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| 2019-12 | RAN#86 | R5-197997 | 0978 | - | F | Introduction of test frequencies for NR CA configuration CA_n261D to CA_n261F            | 16.2.0 |
| 2019-12 | RAN#86 | R5-197998 | 0979 | - | F | Introduction of test frequencies for NR CA configuration CA_n261J to CA_n261M            | 16.2.0 |
| 2019-12 | RAN#86 | R5-198016 | 0983 | - | F | Introduction of test frequencies parameters for Rel-16 NR CA configuration CA_n66B       | 16.2.0 |
| 2019-12 | RAN#86 | R5-198017 | 0984 | - | F | Introduction of test frequencies parameters for Rel-16 NR CA configuration CA_n66(2A)    | 16.2.0 |
| 2019-12 | RAN#86 | R5-198018 | 0985 | - | F | Introduction of test frequencies and parameters for NR band n29                          | 16.2.0 |
| 2019-12 | RAN#86 | R5-198019 | 0986 | - | F | Introduction of test frequencies and parameters for NR band n65                          | 16.2.0 |
| 2019-12 | RAN#86 | R5-198028 | 0988 | - | F | Add 4Rx connection diagram for RRM measurement tests                                     | 16.2.0 |
| 2019-12 | RAN#86 | R5-198057 | 0993 | - | F | Editorial update IE RateMatchPattern   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198058 | 0994 | - | F | Editorial update IE SchedulingRequestResourceConfig                                      | 16.2.0 |
| 2019-12 | RAN#86 | R5-198082 | 0999 | - | F | Introduce general chapter in 4.6   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198120 | 1004 | - | F | Correction of test frequencies parameters for Rel-15 EN-DC configuration DC_(n)41AA      | 16.2.0 |
| 2019-12 | RAN#86 | R5-198121 | 1005 | - | F | Correction of test frequencies parameters for Rel-15 EN-DC configuration DC_(n)71AA      | 16.2.0 |
| 2019-12 | RAN#86 | R5-198125 | 1009 | - | F | Introduction of test frequencies and parameters for NR band n48                          | 16.2.0 |
| 2019-12 | RAN#86 | R5-198126 | 1010 | - | F | Introduction of test frequencies for NR band b41 and CBW 30MHz                           | 16.2.0 |
| 2019-12 | RAN#86 | R5-198131 | 1012 | - | F | Update of USIM Configuration 15 for forbidden PLMN                                       | 16.2.0 |
| 2019-12 | RAN#86 | R5-198133 | 1014 | - | F | Update IE ServingCellConfigCommonSIB   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198141 | 1015 | - | F | Clarification on default radio configuration of NAS cells                                | 16.2.0 |
| 2019-12 | RAN#86 | R5-198217 | 1019 | - | F | Correction of test frequency parameters for protocol testing and NR bands with scs=15kHz | 16.2.0 |
| 2019-12 | RAN#86 | R5-198223 | 1021 | - | F | Add IE BetaOffsets   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198224 | 1022 | - | F | Update IE PUSCH-Config   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198250 | 1023 | - | F | Update IE CSI-FrequencyOccupation  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198251 | 1024 | - | F | Update IE PHR-Config   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198258 | 1026 | - | F | Editorial update IE DRX-Config   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198282 | 1027 | - | F | Update to Connection diagram for 2x4 and 4x4 Demod test cases                            | 16.2.0 |
| 2019-12 | RAN#86 | R5-198286 | 1028 | - | F | Correction of mapping of frequency ranges to NR test frequencies for NR SA               | 16.2.0 |
| 2019-12 | RAN#86 | R5-198304 | 1029 | - | F | Editorial update IE LogicalChannelConfig   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198370 | 1035 | - | F | Connection diagram for FR2 Demod and CSI test cases                                      | 16.2.0 |
| 2019-12 | RAN#86 | R5-198480 | 1039 | - | F | Editorial update IE PDCCH-ConfigCommon   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198485 | 1041 | - | F | Editorial update IE PDCP-Config  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198506 | 1044 | - | F | Addition of RRConfiguration for Speech call setup  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198507 | 1045 | - | F | Editorial updates to section 4.7.0   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198508 | 1046 | - | F | New reference QoS configurations for IMS voice and video                                 | 16.2.0 |
| 2019-12 | RAN#86 | R5-198509 | 1047 | - | F | Updates to REGISTRATION ACCEPT 5GMM message  | 16.2.0 |

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| 2019-12 | RAN#86 | R5-198510 | 1048 | - | F | Updates to test control messages  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198540 | 1051 | - | F | Update of REGISTRATION ACCEPT for IMS emergency support   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198544 | 1053 | - | F | Update of Table 4.6.3-162 SearchSpace in 38.508-1   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198638 | 1058 | - | F | Corrections on test frequencies for NR CA band n260 in 38.508-1   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198649 | 1059 | - | F | Corrections on test frequencies for NR CA band n261 in 38.508-1   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198659 | 1062 | - | F | Update TCI State Cell parameter in Demod section  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198718 | 1067 | - | F | Updates to RSRP-Range, RSRQ-Range and SINR-Range  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198847 | 0941 | 1 | F | Corrections to DCI_1_1 configuration  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198848 | 0931 | 1 | F | Update IE PUSCH-TimeDomainResourceAllocationList  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198850 | 0934 | 1 | F | Correction to IE MasterKeyUpdate  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198851 | 0935 | 1 | F | Update of NR SIBs   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198852 | 0936 | 1 | F | Correction to USIM configuration  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198853 | 0938 | 1 | F | Correction to IE ReportConfigInterRAT   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198854 | 0942 | 1 | F | Correction to Table 4.9.9.2.3-1 for Inter-system change from S1 mode to N1 mode in 5GMM-IDLE mode   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198856 | 0982 | 1 | F | Addition of frequency configurations for NR MFBI testing  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198857 | 0992 | 1 | F | Editorial update IE CSI-AperiodicTriggerStateList   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198858 | 0998 | 1 | F | Editorial update IE ServingCellConfig   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198859 | 1000 | 1 | F | Editorial update IE SecurityAlgorithmConfig   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198860 | 1002 | 1 | F | Update IE SRS-Config  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198861 | 1001 | 1 | F | Update of Generic Test Procedures for IMS Emergency call establishment 4.9.11 and 4.9.12 to reflect the fact that they can be used in multiple states and scenarios | 16.2.0 |
| 2019-12 | RAN#86 | R5-198862 | 1013 | 1 | F | Update IE ServingCellConfigCommon   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198863 | 1016 | 1 | F | Update IE CSI-RS-ResourceMapping  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198865 | 1032 | 1 | F | Update RRConfiguration  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198866 | 1033 | 1 | F | Update chapter 4.5.1 General  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198867 | 1034 | 1 | F | Update to PDU SESSION ESTABLISHMENT ACCEPT and Reference QoS flow descriptions to align EPS bearer id format  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198869 | 1061 | 1 | F | New Test Procedures for IMS Emergency call release  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198870 | 1063 | 1 | F | Update chapter 4.5.2 RRC_IDLE   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198871 | 1072 | 1 | F | Update of RRConfiguration for measurement configuration   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198955 | 0995 | 1 | F | Update procedure for NR RF CA testing   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198956 | 0996 | 1 | F | Update procedure for EN-DC RF CA testing  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198957 | 1036 | 1 | F | Update to 38.508-1 for DEMOD message contents   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198958 | 0991 | 1 | F | Update IE PUCCH-Config  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198959 | 0976 | 1 | F | Introduction of test frequencies for Rel-15 EN-DC inter-band configurations   | 16.2.0 |
| 2019-12 | RAN#86 | R5-198960 | 0980 | 1 | F | Introduction of test frequencies for Rel-16 NR inter-band CA configurations   | 16.2.0 |

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| 2019-12 | RAN#86 | R5-198961 | 0987 | 1 | F | Introduction of test frequencies for NR configuration CA_n29A-n66A  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198962 | 1003 | 1 | F | Introduction of test frequencies for Rel-15 NR DC configurations  | 16.2.0 |
| 2019-12 | RAN#86 | R5-198997 | 1068 | 1 | F | Introduction of test frequencies and parameters for NR bands n29, n48 and n65 for protocol testing          | 16.2.0 |
| 2019-12 | RAN#86 | R5-199008 | 0997 | 1 | F | Editorial update WLAN table 4.5.2.2-3   | 16.2.0 |
| 2019-12 | RAN#86 | R5-199013 | 0943 | 1 | F | Correction to SMTC and GAP for inter frequency cell   | 16.2.0 |
| 2019-12 | RAN#86 | R5-199015 | 0981 | 1 | F | Correction of test frequencies for NR CA and EN-DC protocol testing   | 16.2.0 |
| 2019-12 | RAN#86 | R5-199016 | 1049 | 1 | F | Updates to Test Procedure 4.9.11  | 16.2.0 |
| 2019-12 | RAN#86 | R5-199017 | 1050 | 1 | F | Updates to Test Procedure 4.9.12  | 16.2.0 |
| 2019-12 | RAN#86 | R5-199020 | 1079 | - | F | Update default setting of deriveSSB-IndexFromCell   | 16.2.0 |
| 2019-12 | RAN#86 | R5-199021 | 1011 | 1 | F | Update IE TDD-UL-DL-Config  | 16.2.0 |
| 2019-12 | RAN#86 | R5-199022 | 1070 | 1 | F | Updates to Signalling Reference test conditions   | 16.2.0 |
| 2019-12 | RAN#86 | R5-199026 | 1025 | 2 | F | Update IE CellGroupConfig   | 16.2.0 |
| 2019-12 | RAN#86 | R5-199071 | 0944 | 2 | F | Update of SUL related messages  | 16.2.0 |
| 2019-12 | RAN#86 | R5-199075 | 1080 | 1 | F | Correction to NR RRC_IDLE mode procedure  | 16.2.0 |
| 2019-12 | RAN#86 | R5-199093 | 1065 | 2 | F | Update chapter 4.5.4 RRC_CONNECTED  | 16.2.0 |
| 2019-12 | RAN#86 | R5-199094 | 1069 | 1 | F | Updates for handling of Multiple PDU sessions / Multiple DRBs   | 16.2.0 |
| 2019-12 | RAN#86 | R5-199103 | 1076 | 2 | F | Adding new generic procedure for UE-requested PDU session modification after the first S1 to N1 mode change | 16.2.0 |
| 2019-12 | RAN#86 | R5-199300 | 1042 | 1 | F | Corrections on category of EN-DC configurations for test frequencies in 38.508-1                            | 16.2.0 |
| 2019-12 | RAN#86 | R5-199301 | 1054 | 1 | F | Addition of ServingCellConfigCommon for RRM tests   | 16.2.0 |
| 2019-12 | RAN#86 | R5-199302 | 1057 | 1 | F | Corrections on test frequencies for NR CA band n257 in 38.508-1   | 16.2.0 |
| 2019-12 | RAN#86 | R5-199303 | 1060 | 1 | F | Corrections on test frequencies for NR CA band n258 in 38.508-1   | 16.2.0 |
| 2019-12 | RAN#86 | R5-199304 | 1066 | 1 | F | Update Radio resource control information elements for RRM to add CSI-RS for Tracking                       | 16.2.0 |
| 2019-12 | RAN#86 | R5-199423 | 1077 | - | F | Update ra-responseWindow in TS 38.508-1   | 16.2.0 |
| 2019-12 | RAN#86 | R5-199481 | 0989 | 1 | F | Addition of FR1 NR CA and NR 4Rx connection diagrams  | 16.2.0 |
| 2019-12 | RAN#86 | R5-199511 | 1078 | - | F | Update of quiet zone size   | 16.2.0 |
| 2019-12 | RAN#86 | R5-199545 | 1020 | 1 | F | Addition of multi-AoA capabilities for IFF  | 16.2.0 |
| 2020-03 | RAN#87 | R5-200135 | 1120 |   | F | Removal of Correction to SIG OTA UE Orientation procedure   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200147 | 1130 |   | F | Update to USIM config 6.4.1-11  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200244 | 1133 |   | F | Correction to nAndPagingFrameOffset   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200296 | 1136 |   | F | Addition of generic procedure for IMS MO speech setup   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200297 | 1137 |   | F | Addition of generic procedure for IMS MT speech setup   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200298 | 1138 |   | F | Addition of generic procedure for IMS MO call release   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200299 | 1139 |   | F | Addition of generic procedure for IMS MT call release   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200349 | 1142 |   | F | Correction to frequencyBandList in SIB4   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200431 | 1146 |   | F | Correction to CSI-FrequencyOccupation   | 16.3.0 |

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| 2020-03 | RAN#87 | R5-200432 | 1147 |   | F | Correction to default setting of additionalPmax  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200433 | 1148 |   | F | Correction to powerControlOffset for performance tests   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200434 | 1149 |   | F | Correction to RACH configuration for RRM tests   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200435 | 1150 |   | F | Correction to TDD UL-DL Config for performance test cases  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200477 | 1154 |   | F | Update to Registration REQ and Authentication Response message   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200499 | 1157 |   | F | Correction of test frequency tables for NR band n1   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200500 | 1158 |   | F | Correction of test frequency tables for NR band n2   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200501 | 1159 |   | F | Correction of test frequency tables for NR band n3   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200502 | 1160 |   | F | Correction of test frequency tables for NR band n7   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200503 | 1161 |   | F | Correction of test frequency tables for NR band n25  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200504 | 1162 |   | F | Correction of test frequency tables for NR band n28  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200505 | 1163 |   | F | Correction of test frequency tables for NR band n34  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200506 | 1164 |   | F | Correction of test frequency tables for NR band n38  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200507 | 1165 |   | F | Correction of test frequency tables for NR band n39  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200508 | 1166 |   | F | Correction of test frequency tables for NR band n40  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200510 | 1168 |   | F | Correction of test frequency tables for NR band n50  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200511 | 1169 |   | F | Correction of test frequency tables for NR band n66  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200512 | 1170 |   | F | Correction of test frequency tables for NR band n70  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200513 | 1171 |   | F | Correction of test frequency tables for NR band n71  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200514 | 1172 |   | F | Correction of test frequency tables for NR band n74  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200515 | 1173 |   | F | Correction of test frequency tables for NR band n75  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200531 | 1189 |   | F | Correction of test frequency tables for NR band n29  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200532 | 1190 |   | F | Correction of test frequency tables for NR band n48  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200533 | 1191 |   | F | Correction of test frequency tables for NR band n65  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200597 | 1200 |   | F | Introduction of test frequencies for inter-band Rel-16 EN-DC configurations in 38.508-1                              | 16.3.0 |
| 2020-03 | RAN#87 | R5-200605 | 1202 |   | F | Addition of test frequencies for n95 SUL band  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200645 | 1206 |   | F | Updates to 4.6.4 UE Capability Information Elements  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200646 | 1207 |   | F | Correction to QoS rule number 7  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200647 | 1208 |   | F | Correction to IMS emergency call release procedures  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201246 | 1209 | 1 | F | TRS configuration messages definition for RF in 38.508-1   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200678 | 1210 |   | F | Update of IE ControlResourceSet to introduce band and channel bandwidth specific values for frequencyDomainResources | 16.3.0 |
| 2020-03 | RAN#87 | R5-200703 | 1213 |   | F | Correction to IE BeamFailureRecoveryConfig   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200774 | 1215 |   | F | Editorial update IE MeasConfig   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200775 | 1216 |   | F | Editorial update IE radioLinkMonitoringRS-Id   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200804 | 1218 |   | F | Correction of test frequency tables for NR band n5   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200805 | 1219 |   | F | Correction of test frequency tables for NR band n8   | 16.3.0 |

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| 2020-03 | RAN#87 | R5-200806 | 1220 |   | F | Correction of test frequency tables for NR band n12   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200807 | 1221 |   | F | Correction of test frequency tables for NR band n20   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200808 | 1222 |   | F | Correction of test frequency tables for NR band n51   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200900 | 1197 | 1 | F | Corrections on test frequencies for EN-DC band combinations including FR1 and FR2 in 38.508-1 | 16.3.0 |
| 2020-03 | RAN#87 | R5-200901 | 1198 | 1 | F | Corrections on test frequencies for EN-DC band combinations including FR2 in 38.508-1         | 16.3.0 |
| 2020-03 | RAN#87 | R5-200902 | 1199 | 1 | F | Corrections on uplink EN-DC configurations for test frequencies in 38.508-1                   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200921 | 1132 | 1 | F | Addition of Rel-16 inter-band CA and EN-DC FR1 two bands test configurations                  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200930 | 1081 | 1 | F | Update SIB1   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200931 | 1082 | 1 | F | Update CounterCheck   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200932 | 1083 | 1 | F | Editorial update DLInformationTransfer  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200933 | 1084 | 1 | F | Editorial update FailureInformation   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200934 | 1085 | 1 | F | Editorial update MeasurementReport  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200935 | 1086 | 1 | F | Editorial update MobilityFromNRCommand  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200936 | 1087 | 1 | F | Editorial update Paging   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200937 | 1088 | 1 | F | Editorial update RRCCeEstablishment   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200938 | 1090 | 1 | F | Editorial update RRCCreconfigurationComplete  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200939 | 1091 | 1 | F | Editorial update RRCReject  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200940 | 1092 | 1 | F | Editorial update RRCCRelease  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200941 | 1093 | 1 | F | Editorial update RRCCResumeComplete   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200942 | 1094 | 1 | F | Editorial update RRCCSetup  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200943 | 1096 | 1 | F | Editorial update SCGFailureInformation  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200944 | 1097 | 1 | F | Editorial update SecurityMode   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200945 | 1098 | 1 | F | Update SystemInformation  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200946 | 1099 | 1 | F | Editorial update UEAssistanceInformation  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200947 | 1100 | 1 | F | Editorial update UECapability   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200948 | 1101 | 1 | F | Editorial update ULInformation  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200949 | 1103 | 1 | F | Editorial update IE RLC-BearerConfig  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200951 | 1108 | 1 | F | Add IE TDD-UL-DL-ConfigDedicated  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200952 | 1111 | 1 | F | Update IE ServingCellConfig   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200953 | 1112 | 1 | F | Update IE ServingCellConfigCommonSIB  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200954 | 1113 | 1 | F | Update IE DMRS-DownlinkConfig   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200955 | 1114 | 1 | F | Update IE FrequencyInfoUL   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200956 | 1118 | 1 | F | Update chapter 4.5.1 General  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200957 | 1122 | 1 | F | Update chapter 4.5.4 RRC_CONNECTED  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200958 | 1125 | 1 | F | Update IE CellGroupId   | 16.3.0 |

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| 2020-03 | RAN#87 | R5-200959 | 1126 | 1 | F | Update IE ServCellIndex  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200960 | 1127 | 1 | F | Update IE SK-Counter   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200961 | 1128 | 1 | F | Update IE SDAP-Config  | 16.3.0 |
| 2020-03 | RAN#87 | R5-200965 | 1145 | 1 | F | Correction to CORESET and search space configuration   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200966 | 1193 | 1 | F | Addition of NR SUL connection diagrams   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200967 | 1201 | 1 | F | Clarification to high test channel bandwidth table   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200968 | 1203 | 1 | F | Addition of missing EN-DC test frequencies   | 16.3.0 |
| 2020-03 | RAN#87 | R5-200996 | 1124 | 1 | F | Correction to PUCCH-Config for Format1 and Format2   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201005 | 1131 | 1 | F | Update of Annex C on calculation of test frequencies to achieve full bandwidth testing of NR bands | 16.3.0 |
| 2020-03 | RAN#87 | R5-201020 | 1155 | 1 | F | Update SIG test frequencies in clause 6.2.3.x  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201021 | 1167 | 1 | F | Correction of test frequency tables for NR band n41  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201022 | 1174 | 1 | F | Correction of test frequency tables for NR band n77  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201023 | 1175 | 1 | F | Correction of test frequency tables for NR band n78  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201024 | 1176 | 1 | F | Correction of test frequency tables for NR band n79  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201025 | 1177 | 1 | F | Correction of test frequency tables for NR band n257   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201026 | 1178 | 1 | F | Correction of test frequency tables for NR band n258   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201027 | 1179 | 1 | F | Correction of test frequency tables for NR band n260   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201028 | 1180 | 1 | F | Correction of test frequency tables for NR band n261   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201029 | 1192 | 1 | F | Update of clause 4.4.2 on simulated cells  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201061 | 1153 | 1 | F | Addition of a few R16s inter-band EN-DC FR1 test configurations                                    | 16.3.0 |
| 2020-03 | RAN#87 | R5-201065 | 1194 | 1 | F | Addition of test channel bandwidth for NR bands in 38.508-1  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201092 | 1123 | 1 | F | Updates to NR FR1 and LTE Power levels in OTA  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201093 | 1224 | 1 | F | Message content Updates for Carrier Aggregation  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201108 | 1143 | 1 | F | Correction to EUTRA-AllowedMeasBandwidth   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201116 | 1204 | 1 | F | Updates to 4.7.3 Contents of EAP-AKA messages in 38.508-1  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201148 | 1134 | 1 | F | Updates to default SSB index of intra-frequency NR cells   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201159 | 1151 | 1 | F | Correction to test frequencies for n257 intra-band contiguous CA                                   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201173 | 1117 | 1 | F | Update IE TDD-UL-DL-Config   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201174 | 1095 | 1 | F | Update RRCSysInfoRequest   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201175 | 1106 | 1 | F | Update IE RLF-TimersAndConstants   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201176 | 1107 | 1 | F | Update IE SCS-SpecificCarrier  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201177 | 1109 | 1 | F | Update chapter 4.6.0   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201179 | 1116 | 1 | F | Update IE MeasObjectNR   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201189 | 1214 | 1 | F | Addition of IFF DFF Hybrid Setup for FR2 2AoA RRM test   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201194 | 1141 | 1 | F | Update to Common Coreset RB IE and section 5-6 Demod message contents                              | 16.3.0 |
| 2020-03 | RAN#87 | R5-201195 | 1144 | 1 | F | Update of DCI 1_0 and DCI_1_1 configuration  | 16.3.0 |

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| 2020-03 | RAN#87 | R5-201197 | 1152 | 1 | F | Correction to TRS configuration for RRM tests  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201202 | 1205 | 1 | F | Update to Switch Off/ Power off procedure in RRC_CONNECTED mode  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201203 | 1129 | 1 | F | Update to PDCP-Config  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201217 | 1217 | 1 | F | Updates to PsDU session modification procedures  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201221 | 1089 | 1 | F | Update RRCReconfiguration  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201222 | 1121 | 1 | F | Update IE CellGroupConfig  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201232 | 1140 | 2 | F | CR to 38.508-1 to introduce DFF Range Length   | 16.3.0 |
| 2020-03 | RAN#87 | R5-201234 | 1110 | 2 | F | Update IE ServingCellConfigCommon  | 16.3.0 |
| 2020-03 | RAN#87 | R5-201148 | 1134 | 1 | F | Add new missing column of Table 4.4.2-2  | 16.3.1 |
| 2020-06 | RAN#88 | R5-201320 | 1225 | - | F | Update IE CellGroupConfig  | 16.4.0 |
| 2020-06 | RAN#88 | R5-201322 | 1227 | - | F | Update of default value of frequencyDomainResources in ControlResourceSet IE                             | 16.4.0 |
| 2020-06 | RAN#88 | R5-201331 | 1228 | - | F | Correction to Table 4.9.6.1-1-Switch off in Idle   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201333 | 1230 | - | F | Addition of 4.9.6.3A Switch off Power off procedure in RRC_CONNECTED with T3540 started                  | 16.4.0 |
| 2020-06 | RAN#88 | R5-201335 | 1232 | - | F | Update to USIM config 6.4.1-1  | 16.4.0 |
| 2020-06 | RAN#88 | R5-201336 | 1233 | - | F | Update to USIM Table 6.4.1-10  | 16.4.0 |
| 2020-06 | RAN#88 | R5-201337 | 1234 | - | F | Correction to Table 7.3.1-7 NZP-CSI-RS-Resource for TRS  | 16.4.0 |
| 2020-06 | RAN#88 | R5-201446 | 1235 | - | F | Fixing wrong reference for RRC_CONNECTED state on WLAN access  | 16.4.0 |
| 2020-06 | RAN#88 | R5-201572 | 1253 | - | F | Corrections to default content of DCI messages   | 16.4.0 |
| 2020-06 | RAN#88 | RP-201138 | 1258 | 1 | F | Correction to IE SearchSpace   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201731 | 1265 | - | F | Addition of NR SUL connection diagram in A.3.1.4   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201800 | 1267 | - | F | Addition of USIM configuration for TC 6.3.1.8 and TC 6.3.1.9   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201837 | 1268 | - | F | Update of test channel bandwidths for band n48   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201932 | 1271 | - | F | Removing brackets from mid test channel BWs for FR2  | 16.4.0 |
| 2020-06 | RAN#88 | R5-201956 | 1273 | - | F | Correction of clause 4.4.2 on simulated cells  | 16.4.0 |
| 2020-06 | RAN#88 | R5-201958 | 1275 | - | F | Correction to Annex C on calculation of kSSB to align SSB and RMSI subcarriers                           | 16.4.0 |
| 2020-06 | RAN#88 | R5-201959 | 1276 | - | F | Removal of definition of frequencyDomainResources value dependent on CORESET#0 configuration in Annex C. | 16.4.0 |
| 2020-06 | RAN#88 | R5-201961 | 1278 | - | F | Correction of test frequency tables for NR band n1   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201962 | 1279 | - | F | Correction of test frequency tables for NR band n2   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201963 | 1280 | - | F | Correction of test frequency tables for NR band n3   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201964 | 1281 | - | F | Correction of test frequency tables for NR band n5   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201965 | 1282 | - | F | Correction of test frequency tables for NR band n7   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201966 | 1283 | - | F | Correction of test frequency tables for NR band n8   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201967 | 1284 | - | F | Correction of test frequency tables for NR band n12  | 16.4.0 |
| 2020-06 | RAN#88 | R5-201968 | 1285 | - | F | Correction of test frequency tables for NR band n20  | 16.4.0 |

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| 2020-06 | RAN#88 | R5-201969 | 1286 | - | F | Correction of test frequency tables for NR band n25   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201970 | 1287 | - | F | Correction of test frequency tables for NR band n28   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201971 | 1288 | - | F | Correction of test frequency tables for NR band n34   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201972 | 1289 | - | F | Correction of test frequency tables for NR band n38   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201973 | 1290 | - | F | Correction of test frequency tables for NR band n39   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201974 | 1291 | - | F | Correction of test frequency tables for NR band n40   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201975 | 1292 | - | F | Correction of test frequency tables for NR band n41   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201976 | 1293 | - | F | Correction of test frequency tables for NR band n50   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201977 | 1294 | - | F | Correction of test frequency tables for NR band n51   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201978 | 1295 | - | F | Correction of test frequency tables for NR band n66   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201979 | 1296 | - | F | Correction of test frequency tables for NR band n70   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201980 | 1297 | - | F | Correction of test frequency tables for NR band n71   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201981 | 1298 | - | F | Correction of test frequency tables for NR band n74   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201982 | 1299 | - | F | Correction of test frequency tables for NR band n77   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201983 | 1300 | - | F | Correction of test frequency tables for NR band n78   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201984 | 1301 | - | F | Correction of test frequency tables for NR band n79   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201989 | 1306 | - | F | Corrections of test frequency tables for CA_n41C  | 16.4.0 |
| 2020-06 | RAN#88 | R5-201990 | 1307 | - | F | Corrections of test frequency tables for CA_n78C  | 16.4.0 |
| 2020-06 | RAN#88 | R5-201991 | 1308 | - | F | Editorial correction to test frequency clause numbering   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201995 | 1312 | - | F | Correction of test frequency tables for CA_n66B   | 16.4.0 |
| 2020-06 | RAN#88 | R5-201997 | 1314 | - | F | Introduction of test frequencies for NR band n26  | 16.4.0 |
| 2020-06 | RAN#88 | R5-201998 | 1315 | - | F | Introduction of test frequencies for NR band 26 for protocol testing                                      | 16.4.0 |
| 2020-06 | RAN#88 | R5-201999 | 1316 | - | F | Correction of test frequency tables for NR band n29   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202000 | 1317 | - | F | Correction of test frequency tables for NR band n48   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202001 | 1318 | - | F | Correction of test frequency tables for NR band n65   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202024 | 1327 | - | F | Update IE PDCP-Config   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202123 | 1330 | - | F | CR to 38.508-1 to clarify the test zone/quiet zone  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202186 | 1333 | - | F | Addition of locationAndBandwidth in BWP for FR1 in 38.508-1   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202210 | 1335 | - | F | Corrections on test frequencies for inter-band EN-DC configurations within FR1 for five bands in 38.508-1 | 16.4.0 |
| 2020-06 | RAN#88 | R5-202212 | 1336 | - | F | Corrections of test frequency tables for CA_n257x   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202213 | 1337 | - | F | Corrections of test frequency tables for CA_n258x   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202214 | 1338 | - | F | Corrections of test frequency tables for CA_n260x   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202215 | 1339 | - | F | Corrections of test frequency tables for CA_n261x   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202244 | 1343 | - | F | Correction to nrofRBs under TRS CSI-FrequencyOccupation for Demod test cases with 10 MHz CBW              | 16.4.0 |
| 2020-06 | RAN#88 | R5-202284 | 1351 | - | F | Correction to configuration bwp-id parameter in TCI-State IE  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202409 | 1354 | - | F | Update PDCCH-ControlResourceSet for RRM testing   | 16.4.0 |

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| 2020-06 | RAN#88 | R5-202410 | 1355 | - | F | Addition Physical Layer Parameter section for RRM testing   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202449 | 1356 | - | F | Correction of test frequencies for DC n71AA   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202486 | 1358 | - | F | Correction to content of EF5GSN3GPPLOCI   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202525 | 1360 | - | F | Correction to System Information Combination for PWS  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202531 | 1353 | 1 | F | Addition of R16 new channel bandwidths for n1 in 38.508-1   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202534 | 1266 | 1 | F | Removal of USIM configuration 14  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202549 | 1350 | 1 | F | Aligning the tabular representation of ASN.1 with PRD13 sections 4.8 and 5  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202554 | 1252 | 1 | F | Updates to PDCCH-ConfigCommon   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202561 | 1226 | 1 | F | Update IE default content for control resource set establishment and common search space mapping                      | 16.4.0 |
| 2020-06 | RAN#88 | R5-202562 | 1229 | 1 | F | Update to 4.9.6.3 Switch off Power off procedure in RRC_CONNECTED   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202563 | 1231 | 1 | F | Correction to Table 4.9.7.2.3-1-Tracking Area Update Request  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202564 | 1236 | 1 | F | Correction to Table 4.5.2.2-2-Adding second SMC procedure for Selected EPS NAS security algorithms IE                 | 16.4.0 |
| 2020-06 | RAN#88 | R5-202565 | 1237 | 1 | F | Clarification to ROUND for negative Threshold values in SIB1 and SIB4   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202573 | 1251 | 1 | F | Updates to test frequency definitions for SDL NR bands  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202574 | 1257 | 1 | F | Correction to condition SRB_NR_PDCP in RadioBearerConfig  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202575 | 1260 | 1 | F | Correction to UE Capability Enquiry in case of EN-DC interband CA   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202576 | 1262 | 1 | F | Updates to PDCP-Config  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202577 | 1274 | 1 | F | Clarifications of Annex C on calculation of test frequencies  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202578 | 1277 | 1 | F | Update SIG test frequencies in clause 6.2.3.x   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202579 | 1302 | 1 | F | Correction of test frequency tables for NR band n257  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202580 | 1303 | 1 | F | Correction of test frequency tables for NR band n258  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202581 | 1304 | 1 | F | Correction of test frequency tables for NR band n260  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202582 | 1305 | 1 | F | Correction of test frequency tables for NR band n261  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202583 | 1322 | 1 | F | Introduction of protocol testing applicability for EN-DC inter-band, NR-CA inter-band and NR DC test frequency tables | 16.4.0 |
| 2020-06 | RAN#88 | R5-202585 | 1331 | 1 | F | Correction to Reference QoS rules   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202586 | 1346 | 1 | F | Updates to Generic Test Procedure for IMS MT speech call establishment  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202587 | 1347 | 1 | F | Updates to Generic Test Procedure for IMS MO call release   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202588 | 1349 | 1 | F | Aligning the tabular representation of ASN.1 with PRD13 section 4.6   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202589 | 1359 | 1 | F | Update the default USIM configurations  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202590 | 1361 | 1 | F | Addition of Generic procedure to check user plane connectivity for CA tests   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202703 | 1255 | 1 | F | Clarifications on the QoQZ validation procedure for RRM   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202708 | 1254 | 1 | F | TRS - PowerControlOffset correction for UE RF testing   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202820 | 1352 | 1 | F | Correction to PRB-Id for secondHopPRB   | 16.4.0 |

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| 2020-06 | RAN#88 | R5-202859 | 1329 | 1 | F | Updates on FR2 inter-band EN-DC configurations for test frequencies in 38.508-1                        | 16.4.0 |
| 2020-06 | RAN#88 | R5-202879 | 1332 | 1 | F | Addition of BW to Table 4.6.3-33   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202880 | 1334 | 1 | F | Clarification of disabling Tx diversity for FR2 UE   | 16.4.0 |
| 2020-06 | RAN#88 | R5-202881 | 1341 | 1 | F | Restructuring 38.508-1 message contents for Demod and CSI reporting test cases                         | 16.4.0 |
| 2020-06 | RAN#88 | R5-202882 | 1342 | 1 | F | Update of PUCCH-ResourceId for Demod test cases  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202883 | 1348 | 1 | F | Configuration of p-ZP-CSI-RS-ResourceSet for PDSCH Demod test cases                                    | 16.4.0 |
| 2020-06 | RAN#88 | R5-202956 | 1270 | 1 | F | Update of default test channel BW  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202962 | 1269 | 2 | F | Updating DCI related messages  | 16.4.0 |
| 2020-06 | RAN#88 | R5-202967 | 1344 | 1 | F | Update to default value of PDSCH-to-HARQ_feedback timing indicator (k1)                                | 16.4.0 |
| 2020-06 | RAN#88 | R5-203056 | 1313 | 1 | F | Introduction of test frequencies for Rel-16 NR CA configuration CA_n66B and CA_n66(2A) in cl 6.2.3.4   | 16.4.0 |
| 2020-06 | RAN#88 | R5-203057 | 1319 | 1 | F | Addition of test frequencies for additional channel bandwidths for NR band n66                         | 16.4.0 |
| 2020-06 | RAN#88 | R5-203078 | 1325 | 1 | F | Updates to Generic Test Procedure for IMS MO speech call establishment                                 | 16.4.0 |
| 2020-06 | RAN#88 | R5-203079 | 1326 | 2 | F | Update NR-DC in chapter 4  | 16.4.0 |
| 2020-09 | RAN#89 | R5-203275 | 1364 | - | F | Editorial update IE ARFCN-ValueNR  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203277 | 1366 | - | F | Add IEs ARFCN-ValueUTRA-FDD, AvailabilityCombinationsPerCell, AvailabilityIndicator and BAP-Routing-ID | 16.5.0 |
| 2020-09 | RAN#89 | R5-203278 | 1367 | - | F | n26 Default CH BW in 38.508-1  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203287 | 1368 | - | F | Correction PRB-Id for PUCCH secondHopPRB   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203320 | 1369 | - | F | Add IE BeamFailureRecoverySCellConfig  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203339 | 1372 | - | F | Add IE CGI-InfoEUTRALogging  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203340 | 1373 | - | F | Add IEs CGI-Info-Logging and CLI-RSSI-Range  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203341 | 1374 | - | F | Add IEs CommonLocationInfo, CondReconfigId, CondReconfigToAddModList and ConditionalReconfiguration    | 16.5.0 |
| 2020-09 | RAN#89 | R5-203342 | 1375 | - | F | Add IEs ConfiguredGrantConfigIndex and ConfiguredGrantConfigIndexMAC                                   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203343 | 1376 | - | F | Add IE DRX-ConfigSecondaryGroup  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203344 | 1377 | - | F | Add IE HighSpeedConfig   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203345 | 1378 | - | F | Add IE InvalidSymbolPattern  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203346 | 1379 | - | F | Add IEs LBT-FailureRecoveryConfig and LocationInfo   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203347 | 1380 | - | F | Add IE MeasIdleConfig  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203348 | 1381 | - | F | Add IE MeasObjectCLI   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203349 | 1382 | - | F | Add IE MeasObjectNR-SL   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203350 | 1383 | - | F | Add IE MeasObjectUTRA-FDD  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203351 | 1384 | - | F | Add IEs MeasResultIdleEUTRA and MeasResultIdleNR   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203355 | 1387 | - | F | Add IEs MsgA-ConfigCommon and MsgA-PUSCH-Config  | 16.5.0 |

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| 2020-09 | RAN#89 | R5-203356 | 1388 | - | F | Add IEs NeedForGapsConfigNR and NeedForGapsInfoNR   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203357 | 1389 | - | F | Correction to Table 4.5.2.2-2-second SMC procedure for Selected EPS NAS security algorithms IE                      | 16.5.0 |
| 2020-09 | RAN#89 | R5-203359 | 1391 | - | F | Correction to Table 4.6.3-141 ReportConfigInterRAT  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203446 | 1395 | - | F | Add IEs NPN-Identity and NPN-IdentityInfoList   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203449 | 1396 | - | F | Add IE PLMN-IdentityList2   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203450 | 1397 | - | F | Add IE PUCCH-ConfigurationList  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203451 | 1398 | - | F | Add IE PUCCH-SpatialRelationInfo-Id   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203455 | 1399 | - | F | Corrections to 4.5.1  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203456 | 1400 | - | F | Updating usages of TS 34.229-1 to TS 34.229-5   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203467 | 1401 | - | F | Add IE RACH-ConfigCommonTwoStepRA   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203470 | 1402 | - | F | Add IE RACH-ConfigGenericTwoStepRA  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203471 | 1403 | - | F | Add IE ReferenceTimeInfo  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203472 | 1404 | - | F | Add IE RepetitionSchemeConfig   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203476 | 1405 | - | F | Add IE ReportConfigNR-SL  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203500 | 1410 | - | F | Update to Table 4.6.3-74: MeasObjectEUTRA   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203506 | 1411 | - | F | Add IE RSSI-Range   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203507 | 1412 | - | F | Add IEs SemiStaticChannelAccessConfig and Sensor-LocationInfo   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203508 | 1413 | - | F | Add IE SI-RequestConfig   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203509 | 1414 | - | F | Add IEs SPS-ConfigIndex, SPS-PUCCH-AN and SPS-PUCCH-AN-List   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203510 | 1415 | - | F | Add IE SRS-RSRP-Range   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203533 | 1417 | - | F | Update to PDSCH-ServingCellConfig   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203534 | 1418 | - | F | Updates to CellGroupConfig and RNTI-Value for NR-DC   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203557 | 1420 | - | F | Add IEs UL-DelayValueConfig and UplinkCancellation  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203575 | 1422 | - | F | Add chapter Positioning System information blocks   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203577 | 1423 | - | F | Add IEs SIB10, SIB11, SIB12, SIB13 and SIB14  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203582 | 1424 | - | F | Add messages DedicatedSIBRequest, DL-DedicatedMessageSegment, DL-InformationTransferMRDC and IAB-OtherInformation   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203634 | 1429 | - | F | Introduction of test frequencies for additional Rel-16 EN-DC inter-band configurations                              | 16.5.0 |
| 2020-09 | RAN#89 | R5-203662 | 1432 | - | F | Removal of USIM profile #16   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203671 | 1433 | - | F | Update of PDSCH-to-HARQ_feedback timing indicator (k1) value  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203681 | 1436 | - | F | Editorial correction typos in annex C.2.3.2   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203704 | 1438 | - | F | Correction to Table 4.6.3-87 NZP-CSI-RS-ResourceSet   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203719 | 1441 | - | F | Add messages LoggedMeasurementConfiguration, MCGFailureInformation and SidelinkUEInformationNR                      | 16.5.0 |
| 2020-09 | RAN#89 | R5-203725 | 1442 | - | F | Add messages UEInformationRequest, UEInformationResponse, UL-DedicatedMessageSegment and UL-InformationTransferIRAT | 16.5.0 |
| 2020-09 | RAN#89 | R5-203729 | 1443 | - | F | Update IE RACH-ConfigGeneric  | 16.5.0 |

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| 2020-09 | RAN#89 | R5-203730 | 1444 | - | F | Scheduling Request Resource config for RRM test cases   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203731 | 1445 | - | F | OSI scheduling config for RRM test cases  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203755 | 1447 | - | F | Update IE SchedulingRequestResourceConfig   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203767 | 1449 | - | F | Addition of test frequencies for new Rel-16 CBW for NR band n77   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203768 | 1450 | - | F | Addition of test frequencies for new Rel-16 CBW for NR band n78   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203769 | 1451 | - | F | Introduction of test frequencies for Rel-16 NR band n30   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203793 | 1454 | - | F | Correction of n29 test frequencies for protocol testing   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203794 | 1455 | - | F | Introduction of n30 test frequencies for protocol testing   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203796 | 1456 | - | F | Correction of EN-DC test frequency information for protocol testing   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203813 | 1457 | - | F | Correction to PUCCH-Config  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203815 | 1458 | - | F | FR2 PUSCH K2 values alignment to TS 38.214  | 16.5.0 |
| 2020-09 | RAN#89 | R5-203908 | 1463 | - | F | Corrections on test frequencies for NR FR2 CA band n261   | 16.5.0 |
| 2020-09 | RAN#89 | R5-203998 | 1467 | - | F | Addition of test frequencies for new Rel-16 CBW 25 and 50 MHz for NR band n1  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204021 | 1469 | - | F | Correction of n51 and n76 test frequencies for protocol testing   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204032 | 1470 | - | F | Introduction of n259 test frequencies for protocol testing  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204038 | 1471 | - | F | Corrections of test frequency tables for EN-DC configuration DC_(n)41AA   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204039 | 1472 | - | F | Corrections of test frequency tables for EN-DC configuration DC_(n)71AA   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204041 | 1473 | - | F | Addition of test channel bandwidths for n1 new CBW in 38.508-1 R16  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204049 | 1475 | - | F | Correction to the procedure for determination of SSB and CORESET0   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204052 | 1478 | - | F | PUCCH Resource ID for CSI TCs   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204053 | 1479 | - | F | Correction to PDCCH-ConfigCommon for performance tests  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204150 | 1484 | - | F | Update Table 5.4.2.0-2: ServingCellConfigCommon   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204167 | 1488 | - | F | Corrections of test frequency tables for CA_n260(A-I)   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204168 | 1489 | - | F | Update Table 7.3.1-4: ServingCellConfigCommon   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204223 | 1491 | - | F | Update missing SMTC configurations in RRM message contents  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204238 | 1493 | - | F | Correction to default contents of RRCCeestablismentRequest message  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204325 | 1495 | - | F | Adding procedure for establishment of multiple additional PDN connections in EPS (S1 mode)                                      | 16.5.0 |
| 2020-09 | RAN#89 | R5-204327 | 1497 | - | F | Updates to Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode | 16.5.0 |
| 2020-09 | RAN#89 | R5-204329 | 1499 | - | F | Update of 4.5A.2 UE-requested PDU session establishment procedure   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204330 | 1500 | - | F | Updates Procedure to UE-requested PDU session modification after the first S1 to N1 mode change                                 | 16.5.0 |
| 2020-09 | RAN#89 | R5-204331 | 1501 | - | F | Void 4.9.14 Procedure for UE-requested PDU session modification after the first S1 to N1 mode change                            | 16.5.0 |

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| 2020-09 | RAN#89 | R5-204346 | 1502 | - | F | Introduction of test frequencies for Rel-16 NR band n259   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204378 | 1427 | 1 | F | Correction to NR inter-band CA configurations in FR1   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204384 | 1409 | 1 | F | Correction to test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode | 16.5.0 |
| 2020-09 | RAN#89 | R5-204386 | 1390 | 1 | F | Correction to Table 4.6.1-17 RRCResume   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204387 | 1406 | 1 | F | Corrections to generic procedures for MO and MT speech call establishment  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204388 | 1407 | 1 | F | Correction to USIM configurations 7 and 13   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204389 | 1408 | 1 | F | Correction to switch off / power off procedures for IMS  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204390 | 1421 | 1 | F | Correction of description of NGEN-DC in table 4.5.1-1  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204391 | 1425 | 1 | F | Correction to UE-CapabilityRAT-RequestList and UE-CapabilityRequestFilterNR  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204392 | 1439 | 1 | F | Addition of Generic Test Procedure for IMS MO SMS in 5GC   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204393 | 1440 | 1 | F | Addition of Generic Test Procedure for IMS MT SMS in 5GC   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204394 | 1446 | 1 | F | Update IE RLC-BearerConfig   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204395 | 1481 | 1 | F | Update IE SIB2   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204396 | 1482 | 1 | F | New procedure for PDU Session Release  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204397 | 1483 | 1 | F | Update to FreqBandList   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204398 | 1490 | 1 | F | Update IE ServingCellConfigCommon  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204399 | 1494 | 1 | F | Adding generic procedure E-UTRA RRC_IDLE with unrestricted number of PDN connections   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204400 | 1496 | 1 | F | Update of PDU SESSION ESTABLISHMENT ACCEPT for multi PDU-PDN handling  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204401 | 1498 | 1 | F | Updates of Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode    | 16.5.0 |
| 2020-09 | RAN#89 | R5-204507 | 1371 | 1 | F | Add IEs BH-RLC-ChannelConfig, BH-LogicalChannelIdentity, BH-LogicalChannelIdentity-Ext and BH-RLC-ChannelID                        | 16.5.0 |
| 2020-09 | RAN#89 | R5-204508 | 1386 | 1 | F | Add IEs MeasResultsSL and MeasTriggerQuantityEUTRA   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204509 | 1416 | 1 | F | Modification to InterRAT-Parameters to add the UE capability nr-HO-ToEN-DC-r16   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204510 | 1419 | 1 | F | Add IE SSB-PositionQCL-Relation  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204704 | 1503 | - | F | Adding the test frequency for DC_3A-7A_n78A  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204706 | 1504 | - | F | Adding the test frequency for DC_28A_n3A   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204708 | 1435 | 1 | F | Updating indicator for SUL FR1 test cases  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204709 | 1437 | 1 | F | Update frequencyDomainResources and nrofcandidates   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204751 | 1428 | 1 | F | Introduction of test frequencies for additional Rel-15 band EN-DC inter-band configurations  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204752 | 1460 | 1 | F | Correction to TCI-state related configurations   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204753 | 1461 | 1 | F | Correction to CSI-RS related configurations  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204754 | 1468 | 1 | F | Update on test frequencies for EN-DC configurations including FR2  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204755 | 1485 | 1 | F | Corrections of test frequency tables for CA_n258x  | 16.5.0 |

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| 2020-09 | RAN#89 | R5-204756 | 1486 | 1 | F | Corrections of test frequency tables for CA_n260x  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204757 | 1487 | 1 | F | Corrections of test frequency tables for CA_n261x  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204758 | 1492 | 1 | F | Add SSB subcarrier spacing configurations in RRM message contents  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204800 | 1362 | 1 | F | Introduction of test frequencies for Rel-16 inter-band EN-DC combinations within FR1   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204852 | 1434 | 1 | F | Jumbo CR for update to Demod message contents  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204896 | 1370 | 1 | F | Addition of test frequencies for n28 with CBW of 30MHz   | 16.5.0 |
| 2020-09 | RAN#89 | R5-204899 | 1448 | 1 | F | Adding default value for IE rbg-Size for demodulation and CSI reporting tests  | 16.5.0 |
| 2020-09 | RAN#89 | R5-204900 | 1462 | 1 | F | Introduction of definition of Mid, Low, High test channel bandwidth and removal of NOTES that incorrectly permit UE not to support mandatory BWs | 16.5.0 |
| 2020-09 | RAN#89 | R5-204901 | 1476 | 1 | F | Correction to message configuration for performance tests  | 16.5.0 |
| 2020-10 | RAN#89 | R5-204325 | 1495 | - | F | Addition of missing Table 4.5A.2B.2.2-2 and specific message contents of R5-204325   | 16.5.1 |
| 2020-12 | RAN#90 | R5-205093 | 1507 | - | F | Add IE BandCombinationListSidelink   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205096 | 1508 | - | F | Add IE CarrierAggregationVariant   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205104 | 1509 | - | F | Add IEs FreqSeparationClassDL-Only and HighSpeedParameters   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205130 | 1514 | - | F | Add IE PowSav-Parameters   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205167 | 1519 | - | F | Add IE OLPC-SRS-Pos  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205172 | 1521 | - | F | Add IEs SidelinkParameters, SON-Parameters and SpatialRelationsSRS-Pos   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205178 | 1522 | - | F | Add IE UE-BasedPerfMeas-Parameters   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205181 | 1523 | - | F | Add IE SharedSpectrumChAccessParamsPerBand   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205186 | 1524 | - | F | Add IEs AbsoluteTimeInfo, AreaConfiguration and BT-NameList  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205187 | 1525 | - | F | Add IEs IAB-IP-Address, IAB-IP-AddressIndex and IAB-IP-Usage   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205188 | 1526 | - | F | Add IEs LoggingDuration, LoggingInterval, LogMeasResultListBT and LogMeasResultListWLAN  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205189 | 1527 | - | F | Add IE PhysCellIdUTRA-FDD  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205190 | 1528 | - | F | Add IEs Sensor-NameList, TraceReference and UE-MeasurementsAvailable-r16   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205191 | 1529 | - | F | Add IEs UTRA-FDD-Q-OffsetRange, VisitedCellInfoList and WLAN-NameList  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205215 | 1533 | - | F | Update chapter 4.5.1 General   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205249 | 1537 | - | F | Introduction of test frequencies for NR Band n53 signalling testing  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205250 | 1538 | - | F | Introduction of test channel BWs for NR Band n53   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205288 | 1539 | - | F | Addition of IE DCP-Config-r16  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205332 | 1542 | - | F | Updates to generic procedure NR-DC RRC_CONNECTED   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205334 | 1544 | - | F | Updates to RadioBearerConfig in Table 4.6.3-132  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205336 | 1546 | - | F | Updates to RRCCreconfiguration in Table 4.6.1-13   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205339 | 1549 | - | F | Updates to RRCCreconfiguration-NR-DC in Table 4.8.1-1CA  | 16.6.0 |

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| 2020-12 | RAN#90 | R5-205403 | 1554 | - | F | Addition of PC5 RRC messages for sidelink communication   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205404 | 1555 | - | F | Addition of sidelink IEs for Uu RRC and PC5 RRC   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205532 | 1573 | - | F | Clarifications to Annex C and CORESET1  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205661 | 1580 | - | F | Update of Annex C on calculating test frequencies for RRM testing   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205701 | 1588 | - | F | Update RF test channel bandwidths for n14 and n30   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205725 | 1594 | - | F | Correction to test channel bandwidth for NR band n40 and n50  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205728 | 1597 | - | F | Adding test frequencies for CA_n78B   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205771 | 1602 | - | F | Addition of test frequencies for a few Rel-16 EN-DC configurations  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205832 | 1603 | - | F | Connection diagrams for radiated RRM Tests  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205874 | 1607 | - | F | Correction of test frequency of CA_n41C   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205875 | 1608 | - | F | Correction of test frequency of CA_n66B   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205881 | 1610 | - | F | Addition of test frequency for 40MHz of band n38  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205926 | 1612 | - | F | Correction to nrofRBs IE for CSI-FrequencyOccupation  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205932 | 1614 | - | F | Addition of IE configuration for ULFPTx to clause 5   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205937 | 1615 | - | F | Update of 4.9.12 Generic Test Procedure for IMS Emergency call establishment in 5GC without IMS emergency registration and editorials | 16.6.0 |
| 2020-12 | RAN#90 | R5-205939 | 1617 | - | F | Update for Flexible PDU-PDN - Default messages  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205940 | 1618 | - | F | Update for Flexible PDU-PDN - DNN Configurations  | 16.6.0 |
| 2020-12 | RAN#90 | R5-205997 | 1621 | - | F | Correction of test frequencies for NR band n1   | 16.6.0 |
| 2020-12 | RAN#90 | R5-205998 | 1622 | - | F | Editorial correction to NR-DC test frequency clause 4.3.1   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206002 | 1626 | - | F | Correction of FR1 NR band test frequency tables for protocol testing  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206003 | 1627 | - | F | Correction of FR2 NR band test frequency tables for protocol testing  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206004 | 1628 | - | F | Change of default SCS for NR CA test frequencies for FR2 protocol testing   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206008 | 1632 | - | F | Editorial correction to NR CA test frequencies for FR1 protocol testing   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206019 | 1637 | - | F | Correction of test frequencies for CA_n260 of intra-band non-contiguous A-I   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206046 | 1642 | - | F | Clarify usage of SSB-Ids for RRM test cases   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206048 | 1644 | - | F | Clarification on the conditions in DCI format 1_1 table for RRM   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206060 | 1645 | - | F | Correction to 4.9.17 IMS MO release   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206061 | 1646 | - | F | Correction to 4.9.18 IMS MT release   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206065 | 1650 | - | F | Alignment of Rel-16 5GSM messages   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206066 | 1651 | - | F | Addition of new SSTs  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206067 | 1652 | - | F | Update IE SIB2  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206078 | 1654 | - | F | Update IE SIB4  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206086 | 1655 | - | F | Addition of common message contents for sustained downlink data rate tests  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206087 | 1656 | - | F | Correction to Default RRM TRS qcl-info and PDCCH TCI State  | 16.6.0 |

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| 2020-12 | RAN#90 | R5-206112 | 1657 | - | F | Update requirements of test equipment for RF test  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206113 | 1658 | - | F | Update requirements of test equipment for RRM tests  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206115 | 1659 | - | F | Update requirements of reference test conditions for RRM tests   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206157 | 1663 | - | F | CSI-measConfig applicable for RRM testing  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206158 | 1664 | - | F | Editorial update IE CellAccessRelatedInfo-EUTRA-5GC  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206164 | 1666 | - | F | Editorial update IE CellAccessRelatedInfo-EUTRA-EPC  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206266 | 1671 | - | F | Corrections to test procedures in subclause 4.9  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206288 | 1510 | 1 | F | Corrections to UE-requested PDU session establishment procedure  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206289 | 1515 | 1 | F | Update of 4.9.7 Test procedure for UE for Tracking area updating / Inter-system change from N1 mode to S1 mode in 5GMM/EMM-IDLE mode | 16.6.0 |
| 2020-12 | RAN#90 | R5-206290 | 1516 | 1 | F | Update of 4.9.9 Test procedure for UE for Tracking area updating / Inter-system change from S1 mode to N1 mode in 5GMM/EMM-IDLE mode | 16.6.0 |
| 2020-12 | RAN#90 | R5-206291 | 1517 | 1 | F | Update of 4.5.2 RRC_IDLE   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206292 | 1532 | 1 | F | Correction to Test procedure 4.9.5   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206293 | 1534 | 1 | F | Corrections to generic procedures regarding IMS usage  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206294 | 1540 | 1 | F | Update Generic Test Procedures for IMS MO, MT speech call  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206295 | 1543 | 1 | F | Updates to generic procedure parameters in Table 4.5.1-1   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206296 | 1616 | 1 | F | Update for Flexible PDU-PDN - Session-Connection establishment   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206297 | 1541 | 1 | F | Updates to CellGroupConfig in Table 4.6.3-19   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206298 | 1545 | 1 | F | Updates to RadioBearerConfig in Table 4.6.3-132 for NR-DC  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206299 | 1547 | 1 | F | Updates to RRCCReconfiguration in Table 4.6.1-13 for NR-DC   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206300 | 1548 | 1 | F | Updates to RRCCReconfigurationComplete   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206301 | 1586 | 1 | F | Update IE SSB-ToMeasure  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206302 | 1620 | 1 | F | Correction to PDCCH-ConfigCommon   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206303 | 1665 | 1 | F | Messages Exceptions corrections for SUL cases  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206304 | 1670 | 1 | F | Update to ims-EmergencySupport indication of SIB1  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206305 | 1595 | 1 | F | Correction to test frequencies for signalling testing  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206306 | 1625 | 1 | F | Introducing test frequencies for CA_n261(2A) for protocol testing  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206307 | 1629 | 1 | F | Introduction of NR-DC test frequencies for protocol testing  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206308 | 1661 | 1 | F | Update requirements of test equipment for Signalling test  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206309 | 1531 | 1 | F | Correction to Table 4.8.1-1A RRCCReconfiguration-HO  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206388 | 1631 | 1 | F | Introduction of n14 test frequencies for protocol testing  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206394 | 1552 | 1 | F | Adding ReferenceTimeInfo IE config for IIoT test   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206403 | 1559 | 1 | F | Update to RRC messages and IEs for R16 Mobility Enhancement  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206407 | 1553 | 1 | F | Correction to Uu RRC messages and SIBs for sidelink communication  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206408 | 1556 | 1 | F | Addition of V2X default configuration_USIM   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206409 | 1557 | 1 | F | Addition of V2X default configuration_NAS Messages   | 16.6.0 |

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| 2020-12 | RAN#90 | R5-206419 | 1575 | 1 | F | Updates to default contents of NAS messages for Rel-16 RACS                            | 16.6.0 |
| 2020-12 | RAN#90 | R5-206420 | 1576 | 1 | F | Updates to default contents of RRC messages for Rel-16 RACS                            | 16.6.0 |
| 2020-12 | RAN#90 | R5-206426 | 1649 | 1 | F | Alignment of Rel-16 5GMM messages  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206427 | 1668 | 1 | F | Updates to DL-DedicatedMessageSegment message  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206621 | 1589 | 1 | F | Correction to test frequencies for NR band n34   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206622 | 1590 | 1 | F | Correction to test frequencies for NR band n38   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206623 | 1591 | 1 | F | Correction to test frequencies for NR band n39   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206624 | 1592 | 1 | F | Correction to test frequencies for NR band n40   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206625 | 1593 | 1 | F | Correction to test frequencies for NR band n50   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206626 | 1609 | 1 | F | Correction of test frequency of CA_n78C  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206628 | 1611 | 1 | F | Update to DEMOD message contents   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206629 | 1669 | 1 | F | Single PDN and PDU configuration for EN-DC RF testing                                  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206630 | 1619 | 1 | F | Addition of aperiodic CSI-RS reference configuration for RRM test                      | 16.6.0 |
| 2020-12 | RAN#90 | R5-206631 | 1623 | 1 | F | Introduction of test frequencies for SCS=60 kHz and EN-DC configurations DC_41X_n41A   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206632 | 1505 | 1 | F | Message contents for iRAT periodical measurements                                      | 16.6.0 |
| 2020-12 | RAN#90 | R5-206633 | 1638 | 1 | F | Minor corrections of 4.1 for test environment conditions                               | 16.6.0 |
| 2020-12 | RAN#90 | R5-206712 | 1579 | 1 | F | Addition of UL and DL inter-band CA configurations for several FR1 bands               | 16.6.0 |
| 2020-12 | RAN#90 | R5-206713 | 1587 | 1 | F | Update to reference test conditions for R16 EN-DC configuration                        | 16.6.0 |
| 2020-12 | RAN#90 | R5-206714 | 1639 | 1 | F | Introduction of test frequencies for additional Rel-16 EN-DC inter-band configurations | 16.6.0 |
| 2020-12 | RAN#90 | R5-206715 | 1660 | 1 | F | Introduction of test frequencies for additional Rel-16 EN-DC inter-band configurations | 16.6.0 |
| 2020-12 | RAN#90 | R5-206736 | 1536 | 1 | F | Introduction of test frequencies for NR Band n53                                       | 16.6.0 |
| 2020-12 | RAN#90 | R5-206737 | 1572 | 1 | F | Addition of R16 new channel bandwidths for n3 in 38.508-1                              | 16.6.0 |
| 2020-12 | RAN#90 | R5-206738 | 1630 | 1 | F | Introduction of test frequencies for n14   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206739 | 1636 | 1 | F | Correction of 4.3.1 for test channel bandwidth of NR bands                             | 16.6.0 |
| 2020-12 | RAN#90 | R5-206757 | 1596 | 1 | F | Adding test frequencies for CA_n40B  | 16.6.0 |
| 2020-12 | RAN#90 | R5-206758 | 1598 | 1 | F | Adding test frequencies for CA_n77A-n77A   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206759 | 1599 | 1 | F | Adding test frequencies for CA_n78A-n78A   | 16.6.0 |
| 2020-12 | RAN#90 | R5-206760 | 1633 | 1 | F | Updating message contents for Uplink carrier switching                                 | 16.6.0 |
| 2020-12 | RAN#90 | R5-206790 | 1581 | 1 | F | Introduction of test frequencies for RRM and NR band n257                              | 16.6.0 |
| 2020-12 | RAN#90 | R5-206791 | 1582 | 1 | F | Introduction of test frequencies for RRM and NR band n258                              | 16.6.0 |
| 2020-12 | RAN#90 | R5-206792 | 1583 | 1 | F | Introduction of test frequencies for RRM and NR band n260                              | 16.6.0 |
| 2020-12 | RAN#90 | R5-206793 | 1584 | 1 | F | Introduction of test frequencies for RRM and NR band n261                              | 16.6.0 |
| 2020-12 | RAN#90 | R5-206794 | 1585 | 1 | F | Introduction of test frequencies for RRM and NR band n259                              | 16.6.0 |
| 2020-12 | RAN#90 | R5-206820 | 1667 | 1 | F | Update to quality of quiet zone validation rule for IFF DFF hybrid setup               | 16.6.0 |
| 2020-12 | RAN#90 | R5-206860 | 1506 | 1 | F | SSB bitmap correction for RRM test cases   | 16.6.0 |

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| 2020-12 | RAN#90 | R5-206861 | 1624 | 1 | F | Introducing test frequencies for CA_n261(2A)         | 16.6.0 |
| 2020-12 | RAN#90 | R5-206862 | 1643 | 1 | F | Clarify the RF / RRM conditions for default messages | 16.6.0 |