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Technical Specification

3rd Generation Partnership Project;

Technical Specification Group Radio Access Network;

NR;

User Equipment (UE) radio transmission and reception;

Part 3: Range 1 and Range 2 Interworking operation with other radios

(Release 15)

** 

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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;

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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.

# 1 Scope

The present document establishes the minimum RF characteristics and minimum performance requirements for NR User Equipment (UE) Interworking operation with other radios. This includes but is not limited to additional requirements for carrier aggregation between Range 1 and Range 2 and additional requirements due to NR non-standalone (NSA) operation mode with E-UTRA.

# 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 38.101-1: “NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone”

[3] 3GPP TS 38.101-2: “NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone”

[4] 3GPP TS 36.101: “Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio transmission and reception”

[5] 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"

[6] Recommendation ITU-R M.1545: "Measurement uncertainty as it applies to test limits for the terrestrial component of International Mobile Telecommunications-2000"

# 3 Definitions, symbols and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP 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 3GPP TR 21.905 [1].

**<defined term>**: <definition>.

## 3.2 Symbols

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

<symbol> <Explanation>

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP 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 3GPP TR 21.905 [1].

NSA Non-Standalone, a mode of operation where operation of an other radio is assisted with an other radio

SUL Supplementary uplink

ULSUP Uplink sharing from UE perspective

# 4 General

## 4.1 Relationship between minimum requirements and test requirements

The present document is interwork specification for NR UE, covering RF characteristics and minimum performance requirements. Conformance to the present specification is demonstrated by fulfilling the test requirements specified in the conformance specification 3GPP TS 38.521-3 [5].

The Minimum Requirements given in this specification make no allowance for measurement uncertainty. The test specification TS 38.521-3 [5] defines test tolerances. These test tolerances are individually calculated for each test. The test tolerances are used to relax the minimum requirements in this specification to create test requirements. For some requirements, including regulatory requirements, the test tolerance is set to zero.

The measurement results returned by the test system are compared - without any modification - against the test requirements as defined by the shared risk principle.

The shared risk principle is defined in Recommendation ITU‑R M.1545 [6].

## 4.2 Applicability of minimum requirements

a) In this specification the Minimum Requirements are specified as general requirements and additional requirements. Where the Requirement is specified as a general requirement, the requirement is mandated to be met in all scenarios

b) For specific scenarios for which an additional requirement is specified, in addition to meeting the general requirement, the UE is mandated to meet the additional requirements.

c) The spurious emissions power requirements are for the long-term average of the power. For the purpose of reducing measurement uncertainty it is acceptable to average the measured power over a period of time sufficient to reduce the uncertainty due to the statistical nature of the signal

## 4.3 Specification suffix information

Unless stated otherwise the following suffixes are used for indicating at 2nd level subclause, shown in Table 4.3-1.

Table 4.3-1: Definition of suffixes

|  |  |
| --- | --- |
| Clause suffix | Variant |
| None | Single Carrier |
| A | Carrier Aggregation (CA) |
| B | Dual-Connectivity (DC) with and without SUL including UL sharing from UE perspective |
| C |  |
| D | UL MIMO |

# 5 Operating bands and channel arrangement

## 5.1 General

The channel arrangements presented in this clause are based on the operating bands and channel bandwidths defined in the present release of specifications.

NOTE: Other operating bands and channel bandwidths may be considered in future releases.

Requirements throughout the RF specifications are in many cases defined separately for different frequency ranges (FR). The frequency ranges in which NR can operate according to this version of the specifications are identified as described in Table 5.1-1.

Table 5.1-1: Definition of frequency ranges

|  |  |
| --- | --- |
| Frequency range designation | Corresponding frequency range |
| FR1 | 450 MHz – 6000 MHz |
| FR2 | 24250 MHz – 52600 MHz |

The present specification covers band combinations including

- at least one FR1 operating band and one FR2 operating band for carrier aggregation and dual connectivity operations;

- at least one E-UTRA operating band for dual connectivity operations.

## 5.2 Operating bands

NR is designed to operate in FR1 operating bands defined in TS 38.101-1 [2] and FR2 operating bands defined in TS 38.101-2 [3]. E-UTRA is designed to operate in operating bands defined in TS 36.101 [4].

Editor’s note: The lists of specific NR operating bands and band combinations is maintained in TR 38.817-01 and will be merged into TS 38.101-3 in a future version.

## 5.2A Operating bands for CA

### 5.2A.1 Inter-band CA between FR1 and FR2

NR carrier aggregation are designed to operate in the operating bands defined in Table 5.2A.1‑1. The band combinations include at least one FR1 operating band and one FR2 operating band.

Table 5.2A.1-1: Band combinations for NR CA

|  |  |
| --- | --- |
| NR CA Band | NR Band |
| CA\_n8-n258 | n8, n258 |
| CA\_n71-n2571 | n71, n257 |
| CA\_n77-n2571 | n77, n257 |
| CA\_n78-n2571 | n78, n257 |
| CA\_n79-n2571 | n79, n257 |
| NOTE 1: Applicable for UE supporting inter-band carrier aggregation with mandatory simultaneous Rx/Tx capability. | |

## 5.2B Operating bands for DC

### 5.2B.1 General

The operating bands are specified for operation with EN-DC or NGEN-DC configured. The band combinations include at least one E-UTRA operating band.

For EN-DC configurations indicated by column “Single Uplink allowed” (e.g., problematic band combinations as defined in TS38.306) in tables in this section the UE may indicate capability of not supporting simultaneous dual and triple uplink operation due to possible intermodulation interference to its own downlink band if the intermodulation order is 2 or if the intermodulation order is 3 for the combinations when both operating bands are below 1 GHz or between 1695 MHz – 2690 MHz. In case for the EN-DC configurations listed in tables in this section for which the intermodulation products caused by the dual and triple uplink operation fall into the recive band but do not interfere with the own downlink transmission as defined in Annex-A the UE is mandated to operate in dual and triple uplink mode. Single Uplink is also allowed for certain band combinations where intermodulation or reverse intermodulations product could create difficulty for meeting emission requirements.

### 5.2B.2 Intra-band contiguous EN-DC

<Editor’s note: conducted requirements>

#### 5.2B.2.1 EN-DC (two bands)

Table 5.2B.2.1-1: Band combinations for EN-DC (two bands)

|  |  |  |  |
| --- | --- | --- | --- |
| EN-DC band | E-UTRA Band | NR Band | Single UL allowed |
| DC\_(n)71 | 71 | n71 | No3 |
| DC\_(n)41 | 41 | n41 | Yes1 |
| NOTE 1: Single UL allowed due to potential emission issues, not self-interference.  NOTE 2: The minimum requirements apply for 15 kHz subcarrier spacing on the SCG.  NOTE 3: For UE(s) supporting dynamic power sharing it is mandatory to do dual simultaneous UL. For UE(s) not supporting dynamic power sharing single UL is allowed. | | | |

### 5.2B.3 Intra-band non-contiguous EN-DC

<Editor’s note: conducted requirements>

#### 5.2B.3.1 EN-DC (two bands)

Table 5.2B.3.1-1: Band combinations EN-DC (two bands)

|  |  |  |  |
| --- | --- | --- | --- |
| EN-DC Band Uplink Combination | E-UTRA Band | NR Band | Single UL allowed |
| DC\_3\_n3 | 3 | n3 | Yes1 |
| DC\_41\_n41 | 41 | n41 | Yes |
| NOTE 1: Only single switched UL is supported in Rel.15 | | | |

#### 5.2B.3.2 EN-DC (three bands)

Table 5.2B.3.2-1: Band combinations EN-DC (three bands)

|  |  |  |  |
| --- | --- | --- | --- |
| EN-DC Band | E-UTRA Band | NR Band | Single UL allowed |
| DC\_41-41-n41 | CA-41-41 | n41 | No |

### 5.2B.4 Inter-band EN-DC within FR1

<Editor’s note: conducted requirements>

#### 5.2B.4.1 EN-DC (two bands)

Table 5.2B.4.1-1: Band combinations for EN-DC (two bands)

| EN-DC band | E-UTRA Band | NR Band | Single UL allowed |
| --- | --- | --- | --- |
| DC\_1\_n28 | 1 | n28 | No |
| DC\_1\_n40 | 1 | n40 | No |
| DC\_1\_n51 | 1 | n51 | No |
| DC\_1\_n773 | 1 | n77 | DC\_1\_n77 |
| DC\_1\_n783 | 1 | n78 | No |
| DC\_1\_n793 | 1 | n79 | No |
| DC\_2\_n5 | 2 | n5 | No |
| DC\_2\_n66 | 2 | n66 | No |
| DC\_2\_n71 | 2 | n71 | No |
| DC\_2\_n78 | 2 | n78 | No |
| DC\_3\_n7 | 3 | n7 | No |
| DC\_3\_n28 | 3 | n28 | No |
| DC\_3\_n40 | 3 | n40 | No |
| DC\_3\_n51 | 3 | n51 | No |
| DC\_3\_n773 | 3 | n77 | DC\_3\_n77 |
| DC\_3\_n783 | 3 | n78 | DC\_3\_n78 |
| DC\_3\_n793 | 3 | n79 | No |
| DC\_5\_n40 | 5 | n40 | No |
| DC\_5\_n66 | 5 | n66 | No |
| DC\_5\_n783 | 5 | n78 | No |
| DC\_7\_n28 | 7 | n28 | No |
| DC\_7\_n51 | 7 | n51 | No |
| DC\_7\_n783 | 7 | n78 | No |
| DC\_8\_n40 | 8 | n40 | No |
| DC\_8\_n773 | 8 | n77 | No |
| DC\_8\_n783 | 8 | n78 | No |
| DC\_8\_n793 | 8 | n79 | No |
| DC\_11\_n773 | 11 | n77 | No |
| DC\_11\_n783 | 11 | n78 | No |
| DC\_11\_n793 | 11 | n79 | No |
| DC\_12\_n5 | 12 | n5 | No |
| DC\_12\_n66 | 12 | n66 | No |
| DC\_18\_n773 | 18 | n77 | No |
| DC\_18\_n783 | 18 | n78 | No |
| DC\_18\_n793 | 18 | n79 | No |
| DC\_19\_n773 | 19 | n77 | No |
| DC\_19\_n783 | 19 | n78 | No |
| DC\_19\_n793 | 19 | n79 | No |
| DC\_20\_n8 | 20 | n8 | No |
| DC\_20\_n284 | 20 | n28 | No |
| DC\_20\_n51 | 20 | n51 | No |
| DC\_20\_n77 | 20 | n77 | No |
| DC\_20\_n783 | 20 | n78 | No |
| DC\_21\_n773 | 21 | n77 | No |
| DC\_21\_n783 | 21 | n78 | No |
| DC\_21\_n793 | 21 | n79 | No |
| DC\_25\_n41 | 25 | n41 | No |
| DC\_26\_n413 | 26 | n41 | No |
| DC\_26\_n773 | 26 | n77 | No |
| DC\_26\_n783 | 26 | n78 | No |
| DC\_26\_n793 | 26 | n79 | No |
| DC\_28\_n51 | 28 | n51 | No |
| DC\_28\_n773 | 28 | n77 | No |
| DC\_28\_n783 | 28 | n78 | No |
| DC\_28\_n793 | 28 | n79 | No |
| DC\_30\_n5 | 30 | n5 | No |
| DC\_30\_n66 | 30 | n66 | No |
| DC\_38\_n78 | 38 | n78 | No |
| DC\_39\_n781,3 | 39 | n78 | No |
| DC\_39\_n793 | 39 | n79 | No |
| DC\_40\_n77 | 40 | n77 | No |
| DC\_41\_n77 | 41 | n77 | No |
| DC\_41\_n78 | 41 | n78 | No |
| DC\_41\_n792 | 41 | n79 | No |
| DC\_42\_n51 | 42 | n51 | No |
| DC\_42\_n77 | 42 | n77 | No |
| DC\_42\_n78 | 42 | n78 | No |
| DC\_42\_n79 | 42 | n79 | No |
| DC\_66\_n71 | 66 | n71 | No |
| DC\_66\_n5 | 66 | n5 | No |
| DC\_66\_n78 | 66 | n78 | No |
| NOTE 1: The frequency range above 3600MHz for Band n78 is not used in this combination.  NOTE 2: The frequency range below 2545MHz for Band 41 is not used in this combination.  NOTE 3: Applicable for UE supporting inter-band carrier aggregation with mandatory simultaneous Rx/Tx capability.  NOTE 4: The frequency range in band 28 is restricted for this band combination to 703-733 MHz for the UL and 758-788 MHz for the DL. | | | |

#### 5.2B.4.2 EN-DC (three bands)

Table 5.2B.4.2-1: Band combinations EN-DC (three bands)

| EN-DC Band | E-UTRA Band | NR Band | Single UL allowed |
| --- | --- | --- | --- |
| DC\_1-3\_n28 | CA\_1-3 | n28 | No |
| DC\_1-3\_n772 | CA\_1-3 | n77 | DC\_1\_n77, DC\_3\_n77 |
| DC\_1-3\_n782 | CA\_1-3 | n78 | DC\_3\_n78 |
| DC\_1-3\_n792 | CA\_1-3 | n79 | No |
| DC\_1-5\_n782 | CA\_1-5 | n78 | No |
| DC\_1-5\_n782 | CA\_1-5 | n78 | No |
| DC\_1-7\_n282 | CA\_1-7 | n28 | No |
| DC\_1-7\_n78 2 | CA\_1-7 | n78 | No |
| DC\_1-7-7\_n782 | CA\_1-7-7 | n78 | No |
| DC\_1-8\_n782 | CA\_1-8 | n78 | No |
| DC\_1-18\_n772 | CA\_1-18 | n77 | No |
| DC\_1-18\_n782 | CA\_1-18 | n78 | No |
| DC\_1-18\_n79 | CA\_1-18 | n79 | No |
| DC\_1-19\_n772 | CA\_1-19 | n77 | DC\_1\_n77 |
| DC\_1-19\_n782 | CA\_1-19 | n78 | No |
| DC\_1-19\_n792 | CA\_1-19 | n79 | No |
| DC\_1-20\_n283 | CA\_1-20 | n28 | No |
| DC\_1-20\_n782 | CA\_1-20 | n78 | No |
| DC\_1-21\_n772 | CA\_1-21 | n77 | DC\_1\_n77 |
| DC\_1-21\_n782 | CA\_1-21 | n78 | No |
| DC\_1-21\_n792 | CA\_1-21 | n79 | No |
| DC\_1-28\_n772 | CA\_1-28 | n77 | No |
| DC\_1-28\_n782 | CA\_1-28 | n78 | No |
| DC\_1-28\_n79 | CA\_1-28 | n79 | No |
| DC\_1\_n28-n782 | 1 | CA\_n28-n78 | No |
| DC\_1\_n77-n79 | 1 | CA\_n77-n79 | No |
| DC\_1\_n78-n79 | 1 | CA\_n78-n79 | No |
| DC\_1-41\_n77 | CA\_1-41 | n77 | No |
| DC\_1-41\_n78 | CA\_1-41 | n78 | No |
| DC\_1-41\_n79 | CA\_1-41 | n79 | No |
| DC\_1-42\_n77 | CA\_1-42 | n77 | DC\_1\_n77 |
| DC\_1-42\_n78 | CA\_1-42 | n78 | No |
| DC\_1-42\_n79 | CA\_1-42 | n79 | No |
| DC\_1\_SUL\_n78-n842 | 1 | SUL\_n78-n84 | No |
| DC\_2-5\_n66 | CA\_2-5 | n66 | No |
| DC\_2-12\_n66 | CA\_2-12 | n66 | No |
| DC\_2-30\_n66 | CA\_2-30 | n66 | No |
| DC\_2-(n)71 | CA\_2-71 | n71 | No |
| DC\_2-66\_n71 | CA\_2-66 | n71 | No |
| DC\_3\_n3-n77 | 3 | CA\_n3-n77 | DC\_3\_n3 |
| DC\_3\_n3-n78 | 3 | CA\_n3-n78 | DC\_3\_n3 |
| DC\_1-28\_n77 | CA\_1-28 | n77 | No |
| DC\_3-5\_n782 | CA\_3-5 | n78 | DC\_3\_n78 |
| DC\_3-7\_n28 | CA\_3-7 | n28 | No |
| DC\_3-7\_n782 | CA\_3-7 | n78 | DC\_3\_n78 |
| DC\_3-7-7\_n782 | CA\_3-7-7 | n78 | DC\_3\_n78 |
| DC\_3-19\_n772 | CA\_3-19 | n77 | No |
| DC\_3-19\_n782 | CA\_3-19 | n78 | No |
| DC\_3-19\_n792 | CA\_3-19 | n79 | No |
| DC\_3-20\_n282,3 | CA\_3-20 | n28 | No |
| DC\_3-20\_n782 | CA\_3-20 | n78 | No |
| DC\_3-21\_n772 | CA\_3-21 | n77 | No |
| DC\_3-21\_n782 | CA\_3-21 | n78 | No |
| DC\_3-21\_n792 | CA\_3-21 | n79 | No |
| DC\_3-28\_n782 | CA\_3-28 | n78 | No |
| DC\_3\_n28-n782 | 3 | CA\_n28-n78 | DC\_3\_n78 |
| DC\_3-38\_n78 | CA\_3-38 | n78 | DC\_3\_n78 |
| DC\_3-41\_n78 | CA\_3-41 | n78 | DC\_3\_n78 |
| DC\_3-42\_n77 | CA\_3-42 | n77 | DC\_3\_n77 |
| DC\_3-42\_n78 | CA\_3-42 | n78 | DC\_3\_n78 |
| DC\_3-42\_n79 | CA\_3-42 | n79 | No |
| DC\_3\_n77-n79 | 3 | CA\_n77-n79 | No |
| DC\_3\_n78-n79 | 3 | CA\_n78-n79 | No |
| DC\_3\_SUL\_n78-n802 | 3 | SUL\_n78-n80 | DC\_3\_n78 |
| DC\_3\_SUL\_n78-n822 | 3 | SUL\_n78-n821 | DC\_3\_n78 |
| DC\_3\_SUL\_n79-n802 | 3 | SUL\_n79-n80 | No |
| DC\_5-7-7\_n78 | CA\_5-7-7 | n78 | No |
| DC\_5-7\_n78 | CA\_5-7 | n78 | No |
| DC\_5-30\_n66 | CA\_5-30 | n66 | No |
| DC\_7-7\_n78 | CA\_7-7 | n78 | No |
| DC\_7-20\_n283 | CA\_7-20 | n28 | No |
| DC\_7-20\_n782 | CA\_7-20 | n78 | No |
| DC\_7-28\_n782 | CA\_7-28 | n78 | No |
| DC\_7\_n28-n782 | 7 | CA\_n28-n78 | No |
| DC\_7\_n782 | CA\_7 | n78 | No |
| DC\_7-46\_n78 | CA\_7-46 | n78 | No |
| DC\_8\_SUL\_n78-n812 | 8 | SUL\_n78-n81 | No |
| DC\_8\_SUL\_n79-n812 | 8 | SUL\_n79-n81 | No |
| DC\_12-30\_n66 | CA\_12-30 | n66 | No |
| DC\_18-28\_n772 | CA\_18-28 | n77 | No |
| DC\_18-28\_n782 | CA\_18-28 | n78 | No |
| DC\_18-28\_n792 | CA\_18-28 | n79 | No |
| DC\_19-21\_n772 | CA\_19-21 | n77 | No |
| DC\_19-21\_n782 | CA\_19-21 | n78 | No |
| DC\_19-21\_n792 | CA\_19-21 | n79 | No |
| DC\_19-42\_n77 | CA\_19-42 | n77 | No |
| DC\_19-42\_n78 | CA\_19-42 | n78 | No |
| DC\_19-42\_n79 | CA\_19-42 | n79 | No |
| DC\_19\_n77-n79 | 19 | CA\_n77-n79 | No |
| DC\_19\_n78-n79 | 19 | CA\_n78-n79 | No |
| DC\_20\_n8-n75 | 20 | CA\_n8-n75 | DC\_20\_n8 |
| DC\_20\_n28-n753 | 20 | CA\_n28-n75 | No |
| DC\_20\_n28-n782,3 | 20 | CA\_n28-n78 | No |
| DC\_20\_n75-n782 | 20 | CA\_n75-n78 | No |
| DC\_20\_n76-n782 | 20 | CA\_n76-n78 | No |
| DC\_20\_SUL\_n78-n822 | 20 | SUL\_n78-n82 | No |
| DC\_20\_SUL\_n78-n832 | 20 | SUL\_n78-n831 | No |
| DC\_21-42\_n77 | CA\_21-42 | n77 | No |
| DC\_21-42\_n78 | CA\_21-42 | n78 | No |
| DC\_21-42\_n79 | CA\_21-42 | n79 | No |
| DC\_21\_n77-n79 | 21 | CA\_n77-n79 | No |
| DC\_21\_n78-n79 | 21 | CA\_n78-n79 | No |
| DC\_28-42\_n77 | CA\_28-42 | n77 | No |
| DC\_28-42\_n78 | CA\_28-42 | n78 | No |
| DC\_28-42\_n79 | CA\_28-42 | n79 | No |
| DC\_41-42\_n77 | CA\_41-42 | n77 | No |
| DC\_41-42\_n78 | CA\_41-42 | n78 | No |
| DC\_41-42\_n79 | CA\_41-42 | n79 | No |
| DC\_41\_n77 | CA\_41 | n77 | No |
| DC\_41\_n78 | CA\_41 | n78 | No |
| DC\_41\_n79 | CA\_41 | n79 | No |
| DC\_42\_n77 | CA\_42 | n77 | No |
| DC\_28\_SUL\_n78-n832 | 20 | SUL\_n78-n83 | No |
| DC\_42\_n77 | CA\_42 | n77 | No |
| DC\_42\_n78 | CA\_42 | n78 | No |
| DC\_42\_n79 | CA\_42 | n79 | No |
| DC\_66\_(n)71 | CA\_66-71 | n71 | No |
| DC\_66\_SUL\_n78-n862 | 20 | SUL\_n78-n86 | DC\_66\_n78 |
| NOTE 1: If a UE is configured with both NR UL and NR SUL carriers in a cell, the switching time between NR UL carrier and NR SUL carrier can be up to 140us.  NOTE 2: Applicable for UE supporting inter-band carrier aggregation with mandatory simultaneous Rx/Tx capability  NOTE 3: The frequency range in band 28 is restricted for this band combination to 703-733 MHz for the UL and 758-788 MHz for the DL. | | | |

#### 5.2B.4.3 EN-DC (four bands)

Table 5.2B.4.3-1: Band combinations EN-DC (four bands)

| EN-DC Band | E-UTRA Band | NR Band | Single UL allowed |
| --- | --- | --- | --- |
| DC\_1-3-5\_n781 | CA\_1-3-5 | n78 | DC\_3\_n78 |
| DC\_1-3-7\_n28 | CA\_1-3-7 | n28 | No |
| DC\_1-3-7-7\_n781 | CA\_1-3-7-7 | n78 | DC\_3\_n78 |
| DC\_1-3-7\_n781 | CA\_1-3-7 | n78 | DC\_3\_n78 |
| DC\_1-3-8\_n781 | CA\_1-3-8 | n78 | No |
| DC\_1-3-28\_n771 | CA\_1-3-28 | n77 | No |
| DC\_1-3-28\_n781 | CA\_1-3-28 | n78 | No |
| DC\_1-3\_n28-n781 | CA\_1-3 | CA\_n28-n78 | DC\_3\_n78 |
| DC\_1-3-28\_n791 | CA\_1-3-28 | n79 | No |
| DC\_1-3-19\_n771 | CA\_1-3-19 | n77 | DC\_1\_n77, DC\_3\_n77 |
| DC\_1-3-19\_n781 | CA\_1-3-19 | n78 | DC\_3\_n78 |
| DC\_1-3-19\_n791 | CA\_1-3-19 | n79 | No |
| DC\_1-3-20\_n282 | CA\_1-3-20 | n28 | No |
| DC\_1-3-20\_n781 | CA\_1-3-20 | n78 | DC\_3\_n78 |
| DC\_1-3-21\_n771 | CA\_1-3-21 | n77 | DC\_1\_n77, DC\_3\_n77 |
| DC\_1-3-21\_n781 | CA\_1-3-21 | n78 | DC\_3\_n78 |
| DC\_1-3-21\_n791 | CA\_1-3-21 | n79 | No |
| DC\_1-3-42\_n77 | CA\_1-3-42 | n77 | DC\_1\_n77 |
| DC\_1-3-42\_n78 | CA\_1-3-42 | n78 | No |
| DC\_1-3-42\_n79 | CA\_1-3-42 | n79 | No |
| DC\_1-5-7\_n78 | CA\_1-5-7 | n78 | No |
| DC\_1-5-7-7\_n78 | CA\_1-5-7-7 | n78 | No |
| DC\_1-7-20\_n282 | CA\_1-7-20 | n28 | No |
| DC\_1-7-20\_n781 | CA\_1-7-20 | n78 | No |
| DC\_1-7\_n28-n781 | CA\_1-7 | CA\_n28-n78 | No |
| DC\_1-18-28\_n77 | CA\_1-18-28 | n77 | No |
| DC\_1-18-28\_n78 | CA\_1-18-28 | n78 | No |
| DC\_1-18-28\_n791 | CA\_1-18-28 | n79 | No |
| DC\_1-19-42\_n77 | CA\_1-19-42 | n77 | DC\_1\_n77 |
| DC\_1-19-42\_n78 | CA\_1-19-42 | n78 | No |
| DC\_1-19-42\_n79 | CA\_1-19-42 | n79 | No |
| DC\_1-20\_n28-n781,2 | CA\_1-20 | CA\_n28-n78 | No |
| DC\_1-21-28\_n771 | CA\_1-21-28 | n77 | No |
| DC\_1-21-28\_n781 | CA\_1-21-28 | n78 | No |
| DC\_1-21-28\_n791 | CA\_1-21-28 | n79 | No |
| DC\_1-21-42\_n77 | CA\_1-21-42 | n77 | DC\_1\_n77 |
| DC\_1-21-42\_n78 | CA\_1-21-42 | n78 | No |
| DC\_1-21-42\_n79 | CA\_1-21-42 | n79 | No |
| DC\_1-28-42\_n77 | CA\_1-28-42 | n77 | No |
| DC\_1-28-42\_n78 | CA\_1-28-42 | n78 | No |
| DC\_1-28-42\_n79 | CA\_1-28-42 | n79 | No |
| DC\_1-41-42\_n77 | CA\_1-41-42 | n77 | No |
| DC\_1-41-42\_n78 | CA\_1-41-42 | n78 | No |
| DC\_1-41-42-n79 | CA\_1-41-42 | n79 | No |
| DC\_2-66-(n)71 | CA\_2-66-71 | n71 |  |
| DC\_3-5-7-7\_n78 | CA\_3-5-7-7 | n78 | DC\_3\_n78 |
| DC\_3-7\_n28-n781 | CA\_3-7 | CA\_n28-n78 | DC\_3\_n78 |
| DC\_3-20\_n28-n781,2 | CA\_3-20 | CA\_n28-n78 | DC\_3\_n78 |
| DC\_3-21-42\_n77 | DC\_3-21-42 | n77 | DC\_3\_n77 |
| DC\_3-21-42\_n78 | DC\_3-21-42 | n78 | DC\_3\_n78 |
| DC\_3-21-42\_n79 | DC\_3-21-42 | n79 | No |
| DC\_19-21-42\_n77 | CA\_19-21-42 | n77 | No |
| DC\_19-21-42\_n78 | CA\_19-21-42 | n78 | No |
| DC\_19-21-42\_n79 | CA\_19-21-42 | n79 | No |
| DC\_3-5-7\_n78 | CA\_3-5-7 | n78 | DC\_3\_n78 |
| DC\_3-7-20\_n282 | CA\_3-7-20 | n28 | No |
| DC\_3-7-28\_n781 | CA\_3-7-28 | n78 | No |
| DC\_3-7-20\_n781 | CA\_3-7-20 | n78 | DC\_3\_n78 |
| DC\_3-19-21\_n771 | CA\_3-19-21 | n77 | DC\_3\_n77 |
| DC\_3-19-21\_n781 | CA\_3-19-21 | n78 | DC\_3\_n78 |
| DC\_3-19-21\_n791 | CA\_3-19-21 | n79 | No |
| DC\_3-19-42\_n77 | CA\_3-19-42 | n77 | No |
| DC\_3-19-42\_n78 | CA\_3-19-42 | n78 | No |
| DC\_3-19-42\_n791 | CA\_3-19-42 | n79 | No |
| DC\_3-28-42\_n77 | CA\_3-28-42 | n77 | No |
| DC\_3-28-42\_n78 | CA\_3-28-42 | n78 | No |
| DC\_3-28-42\_n79 | CA\_3-28-42 | n79 | No |
| DC\_7-20\_n28-n781,2 | CA\_7-20 | CA\_n28-n78 | No |
| DC\_21-28-42\_n77 | CA\_21-28-42 | n77 | No |
| DC\_21-28-42\_n78 | CA\_21-28-42 | n78 | No |
| DC\_21-28-42\_n79 | CA\_21-28-42 | n79 | No |
| NOTE 1: Applicable for UE supporting inter-band carrier aggregation with mandatory simultaneous Rx/Tx capability  NOTE 2: The frequency range in band 28 is restricted for this band combination to 703-733 MHz for the UL and 758-788 MHz for the DL. | | | |

#### 5.2B.4.4 EN-DC (five bands)

Table 5.2B.4.4-1: Band combinations EN-DC (five bands)

| EN-DC Band | E-UTRA Band | NR Band | Single UL allowed |
| --- | --- | --- | --- |
| DC\_1-3-5-7\_n78 | CA\_1-3-5-7 | n78 | DC\_3\_n78 |
| DC\_1-3-5-7-7\_n78 | CA\_1-3-5-7-7 | n78 | DC\_3\_n78 |
| DC\_1-3-7-20\_n282 | CA\_1-3-7-20 | n28 | No |
| DC\_1-3-7-20\_n781 | CA\_1-3-7-20 | n78 | DC\_3\_n78 |
| DC\_1-3-7\_n28-n781 | CA\_1-3-7 | CA\_n28-n78 | DC\_3\_n78 |
| DC\_1-3-19-21\_n771 | CA\_1-3-19-21 | n77 | DC\_1\_n77, DC\_3\_n77 |
| DC\_1-3-19-21\_n781 | CA\_1-3-19-21 | n78 | DC\_3\_n78 |
| DC\_1-3-19-21\_n791 | CA\_1-3-19-21 | n79 | No |
| DC\_1-3-19-42\_n77 | CA\_1-3-19-42 | n77 | DC\_1\_n77, DC\_3\_n77 |
| DC\_1-3-19-42\_n78 | CA\_1-3-19-42 | n78 | DC\_3\_n78 |
| DC\_1-3-19-42\_n79 | CA\_1-3-19-42 | n79 | No |
| DC\_1-3-20\_n28-n781,2 | CA\_1-3-20 | CA\_n28-n78 | DC\_3\_n78 |
| DC\_1-3-21-42\_n77 | CA\_1-3-21-42 | n77 | DC\_1\_n77, DC\_3\_n77 |
| DC\_1-3-21-42\_n78 | CA\_1-3-21-42 | n78 | DC\_3\_n78 |
| DC\_1-3-21-42\_n79 | CA\_1-3-21-42 | n79 | No |
| DC\_1-7-20\_n28-n781,2 | CA\_1-7-20 | CA\_n28-n78 | No |
| DC\_1-19-21-42\_n77 | DC\_1-19-21-42 | n77 | DC\_1\_n77 |
| DC\_1-19-21-42\_n78 | DC\_1-19-21-42 | n78 | No |
| DC\_1-19-21-42\_n79 | DC\_1-19-21-42 | n79 | No |
| DC\_3-7-20\_n28-n781,2 | CA\_3-7-20 | CA\_n28-n78 | DC\_3\_n78 |
| DC\_1-3-5-7\_n78 | CA\_1-3-5-7 | n78 | DC\_3\_n78 |
| DC\_1-3-7-20\_n28 | CA\_1-3-7-20 | n28 | No |
| DC\_1-3-28-42\_n77 | CA\_1-3-28-42 | n77 | DC\_1\_n77, DC\_3\_n77 |
| DC\_1-3-28-42\_n78 | CA\_1-3-28-42 | n78 | DC\_3\_n78 |
| DC\_1-3-28-42\_n79 | CA\_1-3-28-42 | n79 | No |
| DC\_1-21-28-42\_n77 | CA\_1-21-28-42 | n77 | DC\_1\_n77 |
| DC\_1-21-28-42\_n78 | CA\_1-21-28-42 | n78 | No |
| DC\_1-21-28-42\_n79 | CA\_1-21-28-42 | n79 | No |
| NOTE 1: Applicable for UE supporting inter-band carrier aggregation with mandatory simultaneous Rx/Tx capability  NOTE 2: The frequency range in band 28 is restricted for this band combination to 703-733 MHz for the UL and 758-788 MHz for the DL | | | |

#### 5.2B.4.5 EN-DC (six bands)

Table 5.2B.4.5-1: Band combinations EN-DC (six bands)

|  |  |  |  |
| --- | --- | --- | --- |
| EN-DC Band | E-UTRA Band | NR Band | Single UL allowed |
| DC\_1-3-7-20\_n28-n781,2 | CA\_1-3-7-20 | CA\_n28-n78 | DC\_3\_n78 |
| NOTE 1: Applicable for UE supporting inter-band carrier aggregation with mandatory simultaneous Rx/Tx capability  NOTE 2: The frequency range in band 28 is restricted for this band combination to 703-733 MHz for the UL and 758-788 MHz for the DL | | | |

### 5.2B.5 Inter-band EN-DC including FR2

<Editor’s note: OTA requirements>

#### 5.2B.5.1 EN-DC (two bands)

Table 5.2B.5.1-1: Band combinations for EN-DC (two bands)

| EN-DC band | E-UTRA Band | NR Band | Single UL allowed |
| --- | --- | --- | --- |
| DC\_1\_n257 | 1 | n257 | No |
| DC\_2-2\_n257 | CA\_2-2 | n257 | No |
| DC\_2\_n257 | CA\_2 | n257 | No |
| DC\_2\_n260 | 2 | n260 | No |
| DC\_2\_n260 | CA\_2 | n260 | No |
| DC\_2-2\_n260 | CA\_2-2 | n260 | No |
| DC\_3\_n257 | 3 | n257 | No |
| DC\_3\_n258 | 3 | n258 | No |
| DC\_5-5\_n257 | CA\_5-5 | n257 | No |
| DC\_5-5\_n260 | CA\_5-5 | n260 | No |
| DC\_5\_n257 | 5 | n257 | No |
| DC\_5\_n260 | 5 | n260 | No |
| DC\_5\_n261 | 5 | n261 | No |
| DC\_7-7\_n257 | CA\_7-7 | n257 | No |
| DC\_7\_n257 | 7 | n257 | No |
| DC\_7\_n258 | 7 | n258 | No |
| DC\_8\_n257 | 8 | n257 | No |
| DC\_8\_n258 | 8 | n258 | No |
| DC\_11\_n257 | 11 | n257 | No |
| DC\_12\_n260 | 12 | n260 | No |
| DC\_18\_n257 | 18 | n257 | No |
| DC\_19\_n257 | 19 | n257 | No |
| DC\_20\_n258 | 20 | n258 | No |
| DC\_21\_n257 | 21 | n257 | No |
| DC\_26\_n257 | 26 | n257 | No |
| DC\_28\_n257 | 28 | n257 | No |
| DC\_28\_n258 | 28 | n258 | No |
| DC\_30\_n260 | 30 | n260 | No |
| DC\_39\_n258 | 39 | n258 | No |
| DC\_41\_n257 | 41 | n257 | No |
| DC\_41\_n258 | 41 | n258 | No |
| DC\_42\_n257 | 42 | n257 | No |
| DC\_48-48\_n257 | CA\_48-48 | n257 | No |
| DC\_48\_n257 | CA\_48 | n257 | No |
| DC\_48-48\_n260 | C\_48-48 | n260 | No |
| DC\_48\_n260 | CA\_48 | n260 | No |
| DC\_66-66\_n257 | CA\_66-66 | n257 | No |
| DC\_66\_n257 | 66 | n257 | No |
| DC\_66-66\_n260 | C\_66-66 | n260 | No |
| DC\_66\_n260 | 66 | n260 | No |
| DC\_66\_n261 | 66 | n261 | No |
| NOTE 1: Applicable for UE supporting inter-band carrier aggregation with mandatory simultaneous Rx/Tx capability for all of the above combinations | | | |

#### 5.2B.5.2 EN-DC (three bands)

Table 5.2B.5.2-1: Band combinations EN-DC (three bands)

| EN-DC Band | E-UTRA Band | NR Band | Single UL allowed |
| --- | --- | --- | --- |
| DC\_1-3\_n2571 | CA\_1-3 | n257 | No |
| DC\_1-3\_n2571 | CA\_1-3 | n257 | No |
| DC\_1-5\_n2571 | CA\_1-5 | n257 | No |
| DC\_1-7\_n2571 | CA\_1-7 | n257 | No |
| DC\_1-7-7\_n2571 | CA\_1-7-7 | n257 | No |
| DC\_1-8\_n257 | CA\_1-8 | n257 | No |
| DC\_1-18\_n2571 | CA\_1-18 | n257 | No |
| DC\_1-19\_n2571 | CA\_1-19 | n257 | No |
| DC\_1-21\_n2571 | CA\_1-21 | n257 | No |
| DC\_1-28\_n2571 | CA\_1-28 | n257 | No |
| DC\_1-41\_n257 | CA\_1-41 | n257 | No |
| DC\_1-42\_n257 | CA\_1-42 | n257 | No |
| DC\_2-5\_n2571 | CA\_2-5 | n257 | No |
| DC\_2-5\_n260 | CA\_2-5 | n260 | No |
| DC\_2-12\_n260 | CA\_2-12 | n260 | No |
| DC\_2-13\_n2571 | CA\_2-13 | n257 | No |
| DC\_2-30\_n260 | CA\_2-30 | n260 | No |
| DC\_2-66\_n2571 | CA\_2-66 | n257 | No |
| DC\_2-66\_n260 | CA\_2-66 | n260 | No |
| DC\_2-13\_n2601 | CA\_2-13 | n260 | No |
| DC\_3-5\_n2571 | CA\_3-5 | n257 | No |
| DC\_3-7\_n2571 | CA\_3-7 | n257 | No |
| DC\_3-7-7\_n2571 | CA\_3-7-7 | n257 | No |
| DC\_3-19\_n2571 | CA\_3-19 | n257 | No |
| DC\_3-21\_n2571 | CA\_3-21 | n257 | No |
| DC\_3-28\_n2571 | CA\_3-28 | n257 | No |
| DC\_3-41\_n257 | CA\_3-41 | n257 | No |
| DC\_3-42\_n2571 | CA\_3-42 | n257 | No |
| DC\_5-7-7\_n2571 | CA\_5-7-7 | n257 | No |
| DC\_5-7\_n2571 | CA\_5-7 | n257 | No |
| DC\_5-30\_n260 | CA\_5-30 | n260 | No |
| DC\_5-66\_n260 | CA\_5-66 | n260 | No |
| DC\_12-30\_n260 | CA\_12-30 | n260 | No |
| DC\_12-66\_n260 | CA\_12-66 | n260 | No |
| DC\_13-66\_n2571 | CA\_13-66 | n257 | No |
| DC\_13-66\_n2601 | CA\_13-66 | n260 | No |
| DC\_18-28\_n2571 | CA\_18-28 | n257 | No |
| DC\_19-21\_n2571 | CA\_19-21 | n257 | No |
| DC\_19-42\_n2571 | CA\_19-42 | n257 | No |
| DC\_21-42\_n2571 | CA\_21-42 | n257 | No |
| DC\_21-28\_n2571 | CA\_21-28 | n257 | No |
| DC\_28-42\_n2571 | CA\_28-42 | n257 | No |
| DC\_30-66\_n260 | CA\_30-66 | n260 | No |
| DC\_41-42\_n257 | CA\_41-42 | n257 | No |
| NOTE 1: Applicable for UE supporting inter-band carrier aggregation with mandatory simultaneous Rx/Tx capability | | | |

#### 5.2B.5.3 EN-DC (four bands)

Table 5.2B.5.3-1: Band combinations EN-DC (four bands)

| EN-DC Band | E-UTRA Band | NR Band | Single UL allowed |
| --- | --- | --- | --- |
| DC\_1-3-5\_n2571 | CA\_1-3-5 | n257 | No |
| DC\_1-3-7\_n2571 | CA\_1-3-7 | n257 | No |
| DC\_1-3-7-7\_n257 | CA\_1-3-7-7 | n257 | No |
| DC\_1-3-19\_n2571 | CA\_1-3-19 | n257 | No |
| DC\_1-3-21\_n2571 | CA\_1-3-21 | n257 | No |
| DC\_1-3-28\_n2571 | CA\_1-3-28 | n257 | No |
| DC\_1-3-42\_n257 | CA\_1-3-42 | n257 | No |
| DC\_1-5-7\_n2571 | CA\_1-5-7 | n257 | No |
| DC\_1-5-7-7\_n257 | CA\_1-5-7-7 | n257 | No |
| DC\_1-18-28\_n2571 | CA\_1-18-28 | n257 | No |
| DC\_1-19-42\_n257 | CA\_1-19-42 | n257 | No |
| DC\_1-21-28\_n2571 | CA\_1-21-28 | n257 | No |
| DC\_1-21-42\_n257 | CA\_1-21-42 | n257 | No |
| DC\_1-28-42\_n257 | CA\_1-28-42 | n257 | No |
| DC\_1-41-42\_n257 | CA\_1-41-42 | n257 | No |
| DC\_3-5-7-7\_n257 | CA\_3-5-7-7 | n257 | No |
| DC\_3-5-7\_n2571 | CA\_3-5-7 | n257 | No |
| DC\_3-19-21\_n2571 | CA\_3-19-21 | n257 | No |
| DC\_3-19-42\_n257 | CA\_3-19-42 | n257 | No |
| DC\_3-21-42\_n257 | DC\_3-21-42 | n257 | No |
| DC\_3-28-42\_n257 | CA\_3-28-42 | n257 | No |
| DC\_19-21-42\_n2571 | CA\_19-21-42 | n257 | No |
| DC\_21-28-42\_n2571 | CA\_21-28-42 | n257 | No |
| NOTE 1: Applicable for UE supporting inter-band carrier aggregation with mandatory simultaneous Rx/Tx capability | | | |

#### 5.2B.5.4 EN-DC (five bands)

Table 5.2B.5.4-1: Band combinations EN-DC (five bands)

|  |  |  |  |
| --- | --- | --- | --- |
| EN-DC Band | E-UTRA Band | NR Band | Single UL allowed |
| DC\_1-3-5-7\_n2571 | CA\_1-3-5-7 | n257 | No |
| DC\_1-3-5-7-7\_n2571 | CA\_1-3-5-7-7 | n257 | No |
| DC\_1-3-19-21\_n2571 | CA\_1-3-19-21 | n257 | No |
| DC\_1-3-19-42\_n257 | CA\_1-3-19-42 | n257 | No |
| DC\_1-3-21-42\_n257 | CA\_1-3-21-42 | n257 | No |
| DC\_1-3-28-42\_n257 | CA\_1-3-28-42 | n257 | No |
| DC\_1-19-21-42\_n257 | DC\_1-19-21-42 | n257 | No |
| DC\_1-21-28-42\_n257 | DC\_1-21-28-42 | n257 | No |
| DC\_3-5-7-7\_n257 | CA\_3-5-7-7 | n257 | No |
| DC\_1-3-28-42\_n257 | CA\_1-3-28-42 | n257 | No |
| DC\_1-21-28-42\_n257 | CA\_1-21-28-42 | n257 | No |
| NOTE 1: Applicable for UE supporting inter-band carrier aggregation with mandatory simultaneous Rx/Tx capability | | | |

### 5.2B.6 Inter-band EN-DC including both FR1 and FR2

<Editor’s note: OTA requirements>

#### 5.2B.6.1 EN-DC (two bands)

This section is N/A

#### 5.2B.6.2 EN-DC (three bands)

Table 5.2B.6.2-1: Band combinations EN-DC (three bands)

| EN-DC Band | E-UTRA Band | NR Band | Single UL allowed |
| --- | --- | --- | --- |
| DC\_1\_n77-n257 | 1 | CA\_n77-n257 | No |
| DC\_1\_n78-n257 | 1 | CA\_n78-n257 | No |
| DC\_1\_n79-n257 | 1 | CA\_n79-n257 | No |
| DC\_3\_n77-n257 | 3 | CA\_n77-n257 | No |
| DC\_3\_n78-n257 | 3 | CA\_n78-n257 | No |
| DC\_3\_n79-n257 | 3 | CA\_n79-n257 | No |
| DC\_5\_n78-n2571 | 5 | CA\_n78-n257 | No |
| DC\_7-7\_n78-n257 | CA\_7-7 | CA\_n78-n257 | No |
| DC\_7\_n78-n257 | 7 | CA\_n78-n257 | No |
| DC\_19\_n77-n257 | 19 | CA\_n77-n257 | No |
| DC\_19\_n78-n257 | 19 | CA\_n78-n257 | No |
| DC\_19\_n79-n257 | 19 | CA\_n79-n257 | No |
| DC\_21\_n77-n257 | 21 | CA\_n77-n257 | No |
| DC\_21\_n78-n257 | 21 | CA\_n78-n257 | No |
| DC\_21\_n79-n257 | 21 | CA\_n79-n257 | No |
| NOTE 1: Applicable for UE supporting inter-band carrier aggregation with mandatory simultaneous Rx/Tx capability | | | |

#### 5.2B.6.3 EN-DC (four bands)

Table 5.2B.6.3-1: Band combinations EN-DC (four bands)

| EN-DC Band | E-UTRA Band | NR Band | Single UL allowed |
| --- | --- | --- | --- |
| DC\_1-3\_n78-n257 | CA\_1-3 | CA\_n78-n257 | No |
| DC\_1-5\_n78-n257 | CA\_1-5 | CA\_n78-n257 | No |
| DC\_1-7-7\_n78-n257 | CA\_1-7-7 | CA\_n78-n257 | No |
| DC\_1-7\_n78-n257 | CA\_1-7 | CA\_n78-n257 | No |
| DC\_3-5\_n78-n257 | CA\_3-5 | CA\_n78-n257 | No |
| DC\_3-7-7\_n78-n257 | CA\_3-7-7 | CA\_n78-n257 | No |
| DC\_3-7\_n78-n257 | CA\_3-7 | CA\_n78-n257 | No |
| DC\_5-7-7\_n78-n257 | CA\_5-7-7 | CA\_n78-n257 | No |
| DC\_5-7\_n78-n257 | CA\_5-7 | CA\_n78-n257 | No |

#### 5.2B.6.4 EN-DC (five bands)

Table 5.2B.6.4-1: Band combinations EN-DC (five bands)

| EN-DC Band | E-UTRA Band | NR Band | Single UL allowed |
| --- | --- | --- | --- |
| DC\_1-3-5\_n78-n257 | CA\_1-3-5 | CA\_n78-n257 | No |
| DC\_1-3-7-7\_n78-n257 | CA\_1-3-7-7 | CA\_n78-n257 | No |
| DC\_1-3-7\_n78-n257 | CA\_1-3-7 | CA\_n78-n257 | No |
| DC\_1-5-7-7\_n78-n257 | CA\_1-5-7-7 | CA\_n78-n257 | No |
| DC\_1-5-7\_n78-n257 | CA\_1-5-7 | CA\_n78-n257 | No |
| DC\_3-5-7-7\_n78-n257 | CA\_3-5-7-7 | CA\_n78-n257 | No |
| DC\_3-5-7\_n78-n257 | CA\_3-5-7 | CA\_n78-n257 | No |

#### 5.2B.6.5 EN-DC (six bands)

Table 5.2B.6.5-1: Band combinations EN-DC (six bands)

|  |  |  |  |
| --- | --- | --- | --- |
| EN-DC Band | E-UTRA Band | NR Band | Single UL allowed |
| DC\_1-3-5-7\_n78-n257 | CA\_1-3-5-7 | CA\_n78-n257 | No |
| NOTE 1: Applicable for UE supporting inter-band carrier aggregation with mandatory simultaneous Rx/Tx capability | | | |

## 5.3 UE Channel bandwidth

## 5.3A UE Channel bandwidth for CA

### 5.3A.1 Inter-band CA between FR1 and FR2

## 5.3B UE Channel bandwidth for EN-DC

For intra-band contiguous EN-DC, the aggregated channel bandwidth is sum of the individual NR and E-UTRA channel bandwidths assuming nominal EN-DC channel with 0 kHz offset spacing as specified in sub-clause 5.4.

ENBW = BWNR\_Channel + BWE-UTRA Channel

In the case where the NR sub-block and/or the E-UTRA sub-block itself is composed of intra-band contiguous CA carriers, the EN-DC aggregated channel bandwidth is the sum of the aggregated channel bandwidths of the NR and E-UTRA sub-blocks assuming nominal EN-DC channel spacing between the NR sub-block and E-UTRA sub-block.

ENBW = BWNR\_Channel\_CA + BWE-UTRA Channel\_CA

### 5.3B.1 Intra-band EN-DC in FR1

#### 5.3B.1.1 General

The requirements for intra-band EN-DC in this specification are defined for EN-DC configurations with associated bandwidth combination sets.

For each EN-DC configuration, requirements are specified for all bandwidth combinations contained in a *bandwidth combination set*, which is indicated per supported band combination in the UE radio access capability. A UE can indicate support of several bandwidth combination sets per band combination.

The DL component carrier combinations for a given EN-DC configuration shall be symmetrical in relation to channel centre unless stated otherwise in Table 5.3B.1-1.

#### 5.3B.1.2 BCS for Intra-band contiguous EN-DC

For intra-band contiguous EN-DC, a n EN-DC configuration is a single operating band supporting a carrier aggregation bandwidth class.

Requirements for intra-band contiguous carrier aggregation are defined for the EN-DC configurations and bandwidth combination sets specified in Table 5.3B.1.2-1.

Table 5.3B.1.2-1: EN-DC configurations and bandwidth combination sets defined for intra-band contiguous EN-DC

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | E-UTRA – NR configuration / Bandwidth combination set | | | | |
| Downlink  EN-DC configuration | Uplink EN-DC configurations | Component carriers in order of increasing carrier frequency | | | Maximum aggregated  bandwidth (MHz) | Bandwidth combination set |
| Channel bandwidths for LTE carrier (MHz) | Channel bandwidths NR for carrier (MHz) | Channel bandwidths for LTE carrier (MHz) |
| DC\_(n)41AA | DC\_(n)41AA | 20 | 40, 60, 80,100 |  | 120 | 0 |
|  | 40, 60, 80,100 | 20 |
| DC\_(n)41CA | DC\_(n)41AA1, DC\_41A\_n41A2 | 20+20 | 40, 60, 80,100 |  | 140 | 0 |
|  | 40, 60, 80,100 | 20+20 |
| DC\_(n)41DA | DC\_(n)41AA1, DC\_41A\_n41A2 | 20+20+20 | 40, 60, 80,100 |  | 160 | 0 |
|  | 40, 60, 80,100 | 20+20+20 |
| DC\_(n)71B | DC\_(n)71B | 15 | 5 |  | 20 | 0 |
| 10 | 5, 10 |  |
| 5 | 5, 10, 15 |  |
|  | 5 | 15 |
|  | 5, 10 | 10 |
|  | 5, 10, 15 | 5 |
| NOTE 1: Contiguous intra-band EN-DC uplink requirements shall apply.  NOTE 2: LTE and NR ACLR requirements and non-contiguous intra-band EN-DC uplink requirements shall apply. | | | | | | |

#### 5.3B.1.3 BCS for Intra-band non-contiguous EN-DC

For intra-band non-contiguous EN-DC, an EN-DC configuration is a single operating band supporting an EN-DC bandwidth class.

Requirements for intra-band non-contiguous EN-DC are defined for the EN-DC configurations and bandwidth combination sets specified in Table 5.3B.1.3-1.

Table 5.3B.1.3-1: EN-DC configurations and bandwidth combination sets defined for intra-band non-contiguous EN-DC

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  | E-UTRA – NR configuration / Bandwidth combination set | | | | |
| Downlink  EN-DC configuration | Uplink EN-DC configurations | Component carriers in order of increasing carrier frequency | | | Maximum aggregated  bandwidth (MHz) | Bandwidth combination set |
| Channel bandwidths for LTE carrier (MHz) | Channel bandwidths NR for carrier (MHz) | Channel bandwidths for LTE carrier (MHz) |
| DC\_3A\_n3A | DC\_3A\_n3A(1) |  | 5, 10, 15, 20, 25, 30 | 5, 10, 15, 20 | 50 | 0 |
| DC\_41A\_n41A | DC\_41A\_n41A | 20 | 40, 60, 80,100 |  | 120 | 0 |
|  | 40, 60, 80,100 | 20 |
| DC\_41C\_n41A | DC\_41A\_n41A | 20+20 | 40, 60, 80,100 |  | 140 | 0 |
|  | 40, 60, 80,100 | 20+20 |
| DC\_41D\_n41A | DC\_41A\_n41A | 20+20+20 | 40, 60, 80,100 |  | 160 | 0 |
|  | 40, 60, 80,100 | 20+20+20 |
| NOTE 1: Only single switched UL is supported in Rel.15 | | | | | | |

## 5.4 Channel arrangement

## 5.4A Channel arrangement for CA

The channel arrangement for CA operations in FR1 and FR2 as specified in 38.101-1 and 38.101-2, respectively.

## 5.4B Channel arrangement for DC

The channel arrangement for intra-band EN-DC operations in FR1 is specified in sub-clause 5.4B.1 of TS 38.101-1.

### 5.4B.1 Channel spacing for intra-band EN-DC carriers

The spacing between carriers will depend on the deployment scenario, the size of the frequency block available and the channel bandwidths. The nominal channel spacing between and E-UTRA carrier and an adjacent NR carrier for intra-band contiguous EN-DC is defined as following:

Nominal Channel spacing = (BWLTE\_Channel + BWNR\_Channel)/2+{-5kHz, 0kHz, 5kHz}

where BWLTE\_Channel and BWNR\_Channel are the channel bandwidths of the E-UTRA and NR carriers. The channel spacing can be adjusted depending on the channel raster to optimize performance in a particular deployment scenario.

For intra-band non-contiguous EN-DC the channel spacing between E-UTRA and NR carriers shall be larger than the nominal channel spacing defined in this subclause.

## 5.5 Configuration

## 5.5A Configuration for CA

#### 5.5A.1 Inter-band CA configurations between FR1 and FR2

Table 5.5A.1-1: Inter-band CA configurations (two bands)

|  |  |  |  |
| --- | --- | --- | --- |
| NR CA  configuration | Uplink NR CA  configuration | NR configuration for FR1 | NR configuration for FR2 |
| CA\_n8A-n258A | CA\_n8A-n258A | n8A | n258A |
| CA\_n71A-n257A | - | n71A | n257A |
| CA\_n77A-n257A | CA\_n77A-n257A | n77A | n257A |
| CA\_n77A-n257D | n77A | n257D |
| CA\_n77A-n257E | n77A | n257E |
| CA\_n77A-n257F | n77A | n257F |
| CA\_n77C-n257A | n77C | n257A |
| CA\_n77C-n257D | n77C | n257D |
| CA\_n77C-n257E | n77C | n257E |
| CA\_n77C-n257F | n77C | n257F |
| CA\_n78A-n257A | CA\_n78A-n257A | n78A | n257A |
| CA\_n78A-n257D | n78A | n257D |
| CA\_n78A-n257E | n78A | n257E |
| CA\_n78A-n257F | n78A | n257F |
| CA\_n78C-n257A | n78C | n257A |
| CA\_n78C-n257D | n78C | n257D |
| CA\_n78C-n257E | n78C | n257E |
| CA\_n78C-n257F | n78C | n257F |
| CA\_n79A-n257A | CA\_n79A-n257A | n79A | n257A |
| CA\_n79A-n257D | n79A | n257D |
| CA\_n79A-n257E | n79A | n257E |
| CA\_n79A-n257F | n79A | n257F |
| CA\_n79C-n257A | n78C | n257A |
| CA\_n79C-n257D | n78C | n257D |
| CA\_n79C-n257E | n78C | n257E |
| CA\_n79C-n257F | n78C | n257F |
| NOTE 1: NR configuration for FR1 and FR2 are defined in TS 38.101-1 and TS 38.101-2 respectively. | | | |

## 5.5B Configuration for DC

### 5.5B.1 General

The channel bandwidth and bandwidth classes are specified for operation with EN-DC or NGEN-DC configured.

### 5.5B.2 Intra-band contiguous EN-DC

Supported channel bandwidths for E-UTRA operating bands are defined in [4] and for NR operating bands in TS 38.101-1.

Table 5.5B.2-1: Intra-band contiguous EN-DC configurations

|  |  |  |  |
| --- | --- | --- | --- |
| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) | E-UTRA configuration | NR configuration |
| DC\_(n)41AA | DC\_(n)41AA | 41A | n41A |
| DC\_(n)41CA | DC\_(n)41AA, DC\_41A\_n41A | 41C | n41A |
| DC\_(n)41DA | DC\_(n)41AA, DC\_41A\_n41A | 41D | n41A |
| DC\_(n)71B | DC\_(n)71B | 71A | n71A |
| NOTE 1: Uplink CA configurations are the configurations supported by the present release of specifications. | | | |

### 5.5B.3 Intra-band non-contiguous EN-DC

Supported channel bandwidths for E-UTRA operating bands are defined in TS 36.101 and for NR operating bands in TS 38.101-1.

Table 5.5B.3-1: Intra-band non-contiguous EN-DC configurations

|  |  |  |  |
| --- | --- | --- | --- |
| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) | E-UTRA configuration | NR configuration |
| DC\_3A\_n3A | DC\_3A\_n3A2 | 3 | n3A |
| DC\_41A\_n41A | DC\_41A\_n41A | 41A | n41A |
| DC\_41C\_n41A | DC\_41A\_n41A | 41C | n41A |
| DC\_41D\_n41A | DC\_41A\_n41A | 41D | n41A |
| NOTE 1: Uplink CA configurations are the configurations supported by the present release of specifications.  NOTE 2: Only single switched UL is supported in Rel.15 | | | |

### 5.5B.4 Inter-band EN-DC within FR1

#### 5.5B.4.1 Inter-band EN-DC configurations (two bands)

Table 5.5B.4.1-1: Inter-band EN-DC configurations (two bands)

| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) | E-UTRA configuration | NR configuration |
| --- | --- | --- | --- |
| DC\_1A\_n28A | DC\_1A\_n28A | 1 | n28A |
| DC\_1A\_n40A | DC\_1A\_n40A | 1A | n40A |
| DC\_1A\_n51A | DC\_1A\_n51A | 1A | n51A |
| DC\_1A\_n77A  DC\_1A\_n77C | DC\_1A\_n77A | 1A | n77A  CA\_n77C |
| DC\_1A\_n78A  DC\_1A\_n78C | DC\_1A\_n78A | 1A | n78A  CA\_n78C |
| DC\_1A\_n79A  DC\_1A\_n79C | DC\_1A\_n79A | 1A | n79A  CA\_n79C |
| DC\_2A\_n5A | DC\_2A\_n5A | 2A | n5A |
| DC\_2A\_n66A | DC\_2A\_n66A | 2A | n66A |
| DC\_2A\_n71A | DC\_2A\_n71A | 2 | n71A |
| DC\_2A\_n78A | DC\_2A\_n78A | 2A | n78A |
| DC\_3A\_n7A | DC\_3A\_n7A | 3 | n7A |
| DC\_3A\_n28A | DC\_3A\_n28A | 3 | n28A |
| DC\_3A\_n40A | DC\_3A\_n40A | 3A | n40A |
| DC\_3A\_n51A | DC\_3A\_n51A | 3A | n51A |
| DC\_3A\_n77A  DC\_3A\_n77C | DC\_3A\_n77A | 3A | n77A  CA\_n77C |
| DC\_3A\_n78A  DC\_3A\_n78C | DC\_3A\_n78A | 3A | n78A  CA\_n78C |
| DC\_3A\_n79A  DC\_3A\_n79C | DC\_3A\_n79A | 3A | n79A  CA\_n79C |
| DC\_3C\_n78A | DC\_3A\_n78A | CA\_3C | n78A |
| DC\_5A\_n40A | DC\_5A\_n40A | 5A | n40A |
| DC\_5A\_n66A | DC\_5A\_n66A | 5A | n66A |
| DC\_5A\_n78A | DC\_5A\_n78A | 5 | n78A |
| DC\_7A-7A\_n78A | DC\_7A\_n78A | CA\_7A-7A | n78A |
| DC\_7A\_n28A | DC\_7A\_n28A | 7 | n28A |
| DC\_7A\_n51A | DC\_7A\_n51A | 7A | n51A |
| DC\_7A\_n78A | DC\_7A\_n78A | 7 | n78A |
| DC\_7C\_n78A | DC\_7C\_n78A | CA\_7C | n78A |
| DC\_8A\_n40A | DC\_8A\_n40A | 8A | n40A |
| DC\_8A\_n77A | DC\_8A\_n77A | 8 | n77A |
| DC\_8A\_n78A | DC\_8A\_n78A | 8 | n78A |
| DC\_11A\_n77A | DC\_11A\_n77A | 11 | n77A |
| DC\_11A\_n78A | DC\_11A\_n78A | 11 | n78A |
| DC\_11A\_n79A | DC\_11A\_n79A | 11 | n79A |
| DC\_12A\_n5A | DC\_12A\_n5A | 12A | n5A |
| DC\_12A\_n66A | DC\_12A\_n66A | 12A | n66A |
| DC\_18A\_n77A | DC\_18A\_n77A | 18 | n77A |
| DC\_18A\_n78A | DC\_18A\_n78A | 18 | n78A |
| DC\_18A\_n79A | DC\_18A\_n79A | 18 | n79A |
| DC\_19A\_n77A  DC\_19A\_n77C | DC\_19A\_n77A | 19A | n77A  CA\_n77C |
| DC\_19A\_n78A  DC\_19A\_n78C | DC\_19A\_n78A | 19A | n78A  CA\_n78C |
| DC\_19A\_n79A  DC\_19A\_n79C | DC\_19A\_n79A | 19A | n79A  CA\_n79C |
| DC\_20A\_n8A | DC\_20A\_n8A | 20A | n8A |
| DC\_20A\_n28A | DC\_20A\_n28A | 20 | n28A |
| DC\_20A\_n51A | DC\_20A\_n51A | 20A | n51A |
| DC\_20A\_n77A | DC\_20A\_n77A | 20A | n77A |
| DC\_20A\_n78A | DC\_20A\_n78A | 20A | n78A |
| DC\_21A\_n77A  DC\_21A\_n77C | DC\_21A\_n77A | 21A | n77A  CA\_n77C |
| DC\_21A\_n78A  DC\_21A\_n78C | DC\_21A\_n78A | 21A | n78A  CA\_n78C |
| DC\_21A\_n79A  DC\_21A\_n79C | DC\_21A\_n79A | 21A | n79A  CA\_n79C |
| DC\_25A\_n41A | DC\_25A\_n41A | 25 | n41A |
| DC\_26A\_n41A | DC\_26A\_n41A | 26A | n41A |
| DC\_26A\_n77A | DC\_26A\_n77A | 26 | n77A |
| DC\_26A\_n78A | DC\_26A\_n78A | 26 | n78A |
| DC\_26A\_n79A | DC\_26A\_n79A | 26 | n79A |
| DC\_28A n51A | DC\_28A\_n51A | 28A | n51A |
| DC\_28A\_n77A  DC\_28A\_n77C | DC\_28A\_n77A | 28A | n77A  CA\_n77C |
| DC\_28A\_n78A  DC\_28A\_n78C | DC\_28A\_n78A | 28A | n78A  CA\_n78C |
| DC\_28A\_n79A  DC\_28A\_n79C | DC\_28A\_n79A | 28A | n79A  CA\_n79C |
| DC\_30A\_n5A | DC\_30A\_n5A | 30 | n5A |
| DC\_30A\_n66A | DC\_30A\_n66A | 30A | n66A |
| DC\_38A\_n78A | N/A | 38 | n78A |
| DC\_39A\_n78A | DC\_39A\_n78A | 39 | n78A |
| DC\_39A\_n79A | DC\_39A\_n79A | 39 | n79A |
| DC\_40A\_n77A | N/A | 40A | n77A |
| DC\_41A\_n77A | DC\_41A\_n77A | 41A | n77A |
| DC\_41A\_n78A | DC\_41A\_n78A | 41A | n78A |
| DC\_41A\_n79A | DC\_41A\_n79A | 41 | n79A |
| DC\_41C\_n77A | DC\_41C\_n77A | CA\_41C | n77A |
| DC\_41C\_n78A | DC\_41C\_n78A | CA\_41C | n78A |
| DC\_41C\_n79A | DC\_41C\_n79A | CA\_41C | n79A |
| DC\_42A\_n51A | DC\_42A\_n51A | 42A | n51A |
| DC\_42A\_n77A  DC\_42A\_n77C | N/A | 42A | n77A  CA\_n77C |
| DC\_42A\_n78A  DC\_42A\_n78C | N/A | 42A | n78A  CA\_n78C |
| DC\_42A\_n79A  DC\_42A\_n79C | N/A | 42A | n79A  CA\_n79C |
| DC\_42C\_n77A | N/A | CA\_42C | n77A |
| DC\_42C\_n78A | N/A | CA\_42C | n78A |
| DC\_42C\_n79A | N/A | CA\_42C | n79A |
| DC\_42C\_n79A | N/A | CA\_42C | n79A |
| DC\_42C\_n77C | N/A | CA\_42C | CA n77C |
| DC\_42C\_n78C | N/A | CA\_42C | CA n78C |
| DC\_42C\_n79C | N/A | CA\_42C | CA n79C |
| DC\_42D\_n77A | N/A | 42 | n77A |
| DC\_42D\_n78A | N/A | 42 | n78A |
| DC\_42D\_n79A | N/A | 42 | n79A |
| DC\_42E\_n77A | N/A | 42 | n77A |
| DC\_42E\_n78A | N/A | 42 | n78A |
| DC\_42E\_n79A | N/A | 42 | n79A |
| DC\_46D\_n78A2 |  |  |  |
| DC\_46E\_n78A2 |  |  |  |
| DC\_66A\_n5A | DC\_66A\_n5A | 66A | n5A |
| DC\_66A\_n71A | DC\_66A\_n71A | 66 | n71A |
| DC\_66A\_n78A | DC\_66A\_n78A | 66A | n78A |
| NOTE 1: Uplink CA configurations are the configurations supported by the present release of specifications.  NOTE 2: Restricted to E-UTRA operation when inter-band carrier aggregation is configured. The downlink operating band for Band 46 is paired with the uplink operating band (external E-UTRA band) of the carrier aggregation configuration that is supporting the configured Pcell. | | | |

#### 5.5B.4.2 Inter-band EN-DC configurations (three bands)

Table 5.5B.4.2-1: Inter-band EN-DC configurations (three bands)

| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) | E-UTRA configuration | NR configuration |
| --- | --- | --- | --- |
| DC\_1A-3A\_n28A | DC\_1A\_n28A  DC\_3A\_n28A | CA\_1A-3A | n28A |
| DC\_1A-3A\_n77A  DC\_1A-3A\_n77C | DC\_1A\_n77A  DC\_3A\_n77A | CA\_1A-3A | n77A |
| DC\_1A-3A\_n78A  DC\_1A-3A\_n78C | DC\_1A\_n78A  DC\_3A\_n78A | CA\_1A-3A | n78A |
| DC\_1A-3A\_n79A  DC\_1A-3A\_n79C | DC\_1A\_n79A  DC\_3A\_n79A | CA\_1A-3A | n79A |
| DC\_1A-3C\_n78A | DC\_1A\_n78A  DC\_3A\_n78A | CA\_1A-3C | n78A |
| DC\_1A-5A\_n78A | DC\_1A\_n78A  DC\_5A\_n78A | CA\_1A-5A | n78A |
| DC\_1A-7A\_n28A | DC\_1A\_n28A  DC\_7A\_n28A | CA\_1A-7A | n28A |
| DC\_1A-7A\_n78A | DC\_1A\_n78A  DC\_7A\_n78A | CA\_1A-7A | n78A |
| DC\_1A-7A-7A\_n78A | DC\_1A\_n78A  DC\_7A\_n78A | CA\_1A-7A-7A | n78A |
| DC\_1A-8A\_n78A | DC\_1A\_n78A  DC\_8A\_n78A | CA\_1A-8A | n78A |
| DC\_1A-18A\_n77A | DC\_1A\_n77A  DC\_18A\_n77A | CA\_1A-18A | n77A |
| DC\_1A-18A\_n78A | DC\_1A\_n78A  DC\_18A\_n78A | CA\_1A-18A | n78A |
| DC\_1A-19A\_n77A  DC\_1A-19A\_n77C | DC\_1A\_n77A  DC 19A\_n77A | CA\_1A-19A | n77A  CA\_n77C |
| DC\_1A-19A\_n78A  DC\_1A-19A\_n78C | DC\_1A\_n78A  DC\_19A\_n78A | CA\_1A-19A | n78A  CA\_n78C |
| DC\_1A-19A\_n79A  DC\_1A-19A\_n79C | DC\_1A\_n79A  DC\_19A\_n79A | CA\_1A-19A | n79A  CA\_n79C |
| DC\_1A-19A\_n77A | DC\_1A\_n77A  DC 19A\_n77A | CA\_1A-19A | n77A |
| DC\_1A-19A\_n78A | DC\_1A\_n78A  DC\_19A\_n78A | CA\_1A-19A | n78A |
| DC\_1A-19A\_n79A | DC\_1A\_n79A  DC\_19A\_n79A | CA\_1A-19A | n79A |
| DC\_1A-20A\_n28A | DC\_1A\_n28A  DC\_20A\_n28A | CA\_1A-20A | N28A |
| DC\_1A-20A\_n78A | DC\_1A\_n78A  DC\_20A\_n78A | CA\_1A-20A | n78A |
| DC\_1A-21A\_n77A  DC\_1A-21A\_n77C | DC\_1A\_n77A  DC\_21A\_n77A | CA\_1A-21A | n77A  CA\_n77C |
| DC\_1A-21A\_n78A  DC\_1A-21A\_n78C | DC\_1A\_n78A  DC\_21A\_n78A | CA\_1A-21A | n78A  CA\_n78C |
| DC\_1A-21A\_n79A  DC\_1A-21A\_n79C | DC\_1A\_n79A  DC\_21A\_n79A | CA\_1A-21A | n79A  CA\_n79C |
| DC\_1A-21A\_n77A | DC\_1A\_n77A  DC\_21A\_n77A | CA\_1A-21A | n77A |
| DC\_1A-21A\_n78A | DC\_1A\_n78A  DC\_21A\_n78A | CA\_1A-21A | n78A |
| DC\_1A-21A\_n79A | DC\_1A\_n79A  DC\_21A\_n79A | CA\_1A-21A | n79A |
| DC\_1A-41A\_n77A  DC\_1A-41C\_n77A | DC\_1A\_n77A  DC\_41A\_n77A  DC\_41C\_n77A | CA\_1A-41A  CA\_1A-41C | n77 |
| DC\_1A-41A\_n78A  DC\_1A-41C\_n78A | DC\_1A\_n78A  DC\_41A\_n78A  DC\_41C\_n78A | CA\_1A-41A  CA\_1A-41C | n78 |
| DC\_1A-41C\_n79A | DC\_1A\_n79A  DC\_41C\_n79A | CA\_1A-41C | n79 |
| DC\_1A-28A\_n77A  DC\_1A-28A\_n77C | DC\_1A\_n77A  DC\_28A\_n77A | CA\_1A-28A | n77A  CA\_n77C |
| DC\_1A-28A\_n78A  DC\_1A-28A\_n78C | DC\_1A\_n78A  DC\_28A\_n78A | CA\_1A-28A | n78A  CA\_n78C |
| DC\_1A-28A\_n79A  DC\_1A-28A\_n79C | DC\_1A\_n79A  DC\_28A\_n79A | CA\_1A-28A | n79A  CA\_n79C |
| DC\_1A\_n28A-n78A | DC\_1A\_n28A,  DC\_1A\_n78A | 1A | CA\_n28A-n78A |
| DC\_1A-42A\_n77A  DC\_1A-42A\_n77C | DC\_1A\_n77A | CA\_1A-42A | n77A  CA\_n77C |
| DC\_1A-42A\_n78A  DC\_1A-42A\_n78C | DC\_1An78A | CA\_1A-42A | n78A  CA\_n78C |
| DC\_1A-42A\_n79A  DC\_1A-42A\_n79C | DC\_1A\_n79A | CA\_1A-42A | n79A  CA\_n79C |
| DC\_1A-42C\_n77A | DC\_1A\_n77A | CA\_1A-42C | n77A |
| DC\_1A-42C\_n78A | DC\_1A\_n78A | CA\_1A-42C | n78A |
| DC\_1A-42C\_n79A | DC\_1A\_n79A | CA\_1A-42C | n79A |
| DC\_1A-42D\_n77A | DC\_1A\_n77A | CA\_1A-42C | n77A |
| DC\_1A-42D\_n78A | DC\_1A\_n78A | CA\_1A-42C | n78A |
| DC\_1A-42D\_n79A | DC\_1A\_n79A | CA\_1A-42C | n79A |
| DC\_1A-42E\_n77A | DC\_1A\_n77A | CA\_1A-42E | n77A |
| DC\_1A-42E\_n78A | DC\_1A\_n78A | CA\_1A-42E | n78A |
| DC\_1A-42E\_n79A | DC\_1A\_n79A | CA\_1A-42E | n79A |
| DC\_1A\_n77A-n79A | DC\_1A\_n77A  DC\_1A\_n79A | 1A | CA\_n77A-n79A |
| DC\_1A\_n78A-n79A | DC\_1A\_n78A  DC\_1A\_n79A | 1A | CA\_n78A-n79A |
| DC\_1A\_SUL\_n78A-n84A | DC\_1A\_n78A,  DC\_1A\_n84A\_ULSUP-TDM\_n78A,  DC\_1A\_n84A\_ULSUP-FDM\_n78A | 1 | SUL\_n78A-n84A |
| DC\_2A-5A\_n66A | DC\_2A\_n66A  DC\_5A\_n66A | CA\_2A-5A | n66 |
| DC\_2A-12A\_n66A | DC\_2A\_n66A  DC\_12A\_n66A | CA\_2A-12A | n66 |
| DC\_2A-30A\_n66A | DC\_2A\_n66A  DC\_30A\_n66A | CA\_2A-30A | n66 |
| DC\_2A-66A\_n71A | DC\_2A\_n71A  DC\_66A\_n71A | CA\_2A-66A | n71 |
| DC\_2A-(n)71B | DC\_2A\_n71A  DC\_(n)71B | CA\_2A-71A | n71A |
| DC\_3A\_n3A-n77A | DC\_3A\_n77A | 3A | CA\_n3A-n77A |
| DC\_3A\_n3A-n78A | DC\_3A\_n78A | 3A | CA\_n3A-n78A |
| DC\_3A-5A\_n78A | DC\_3A\_n78A  DC\_5A\_n78A | CA\_3A-5A | n78A |
| DC\_3A-7A-7A\_n78A | DC\_3A\_n78A  DC\_7A\_n78A | CA\_3A-7A-7A | n78A |
| DC\_3A-7A\_n28A | DC\_3A\_n28A  DC\_7A\_n28A | CA\_3A-7A | n28A |
| DC\_3A-7A\_n78A | DC\_3A\_n78A  DC\_7A\_n78A | CA\_3A-7A | n78A |
| DC\_3A-7C\_n78A | DC\_3A\_n78A  DC\_7C\_n78A | CA\_3A-7C | n78A |
| DC\_3C-7C\_n78A | DC\_3A\_n78A  DC\_7C\_n78A | CA\_3C-7C | n78A |
| DC\_3C-7A\_n78A | DC\_3A\_n78A  DC\_7A\_n78A | CA\_3C-7A | n78A |
| DC\_3A-8A\_n78A | DC\_3A\_n78A  DC\_8A\_n78A | CA\_3A-8A | n78A |
| DC\_3A-19A\_n77A  DC\_3A-19A\_n77C | DC\_3A\_n77A  DC\_19A\_n77A | CA\_3A-19A | n77A  CA\_n77C |
| DC\_3A-19A\_n78A  DC\_3A-19A\_n78C | DC\_3A\_n78A  DC\_19A\_n78A | CA\_3A-19A | n78A  CA\_n78C |
| DC\_3A-19A\_n79A  DC\_3A-19A\_n79C | DC\_3A\_n79A  DC\_19A\_n79A | CA\_3A-19A | n79A  CA\_n79C |
| DC\_3A-20A\_n28A | DC\_3A\_n28A  DC\_20A\_n28A | CA\_3A-20A | n28A |
| DC\_3A-20A\_n78A | DC\_3A\_n78A  DC\_20A\_n78A | CA\_3A-20A | n78A |
| DC\_3C-20A\_n78A | DC\_3A\_n78A  DC\_20A\_n78A | CA\_3C-20A | n78A |
| DC\_3A-21A\_n77A  DC\_3A-21A\_n77C | DC\_3A\_n77A  DC\_21A\_n77A | CA\_3A-21A | n77A  CA\_n77C |
| DC\_3A-21A\_n78A  DC\_3A-21A\_n78C | DC\_3A\_n78A  DC\_21A\_n78A | CA\_3A-21A | n78A  CA\_n78C |
| DC\_3A-21A\_n79A  DC\_3A-21A\_n79C | DC\_3A\_n79A  DC\_21A\_n79A | CA\_3A-21A | n79A  CA\_n79C |
| DC\_3A-28A\_n77A  DC\_3A-28A\_n77C | DC\_3A\_n77A  DC\_28A\_n77A | CA\_3A-28A | n77A  CA\_n77C |
| DC\_3A-28A\_n78A  DC\_3A-28A\_n78C | DC\_3A\_n78A  DC\_28A\_n78A | CA\_3A-28A | n78A  CA\_n78C |
| DC\_3A-28A\_n79A  DC\_3A-28A\_n79C | DC\_3A\_n79A  DC\_28A\_n79A | CA\_3A-28A | n79A  CA\_n79C |
| DC\_3A\_n28A-n78A | DC\_3A\_n28A,  DC\_3A\_n78A | 3A | CA\_n28A-n78A |
| DC\_3A-38A\_n78A | DC\_38A\_n78A  DC\_3A\_n78A | CA\_3A-38A | n78A |
| DC\_3A-41A\_n78A | DC\_3A\_n78A  DC\_41A\_n78A | CA\_3A-41A | n78A  CA\_n78C |
| DC\_3A-42A\_n77A  DC\_3A-42A\_n77C | DC\_3A\_n77A | CA\_3A-42C | n77A  CA\_n77C |
| DC\_3A-42A\_n78A  DC\_3A-42A\_n78C | DC\_3A\_n78A | CA\_3A-42A | n78A  CA\_n78C |
| DC\_3A-42A\_n79A  DC\_3A-42A\_n79C | DC\_3A\_n79A | CA\_3A-42A | n79A  CA\_n79C |
| DC\_3A-42C\_n77A | DC\_3A\_n77A | CA\_3A-42C | n77A |
| DC\_3A-42C\_n78A | DC\_3A\_n78A | CA\_3A-42C | n78A |
| DC\_3A-42C\_n79A | DC\_3A\_n79A | CA\_3A-42C | n79A |
| DC\_3A-42D\_n77A | DC\_3A\_n77A | CA\_3A-42A | n77A |
| DC\_3A-42D\_n78A | DC\_3A\_n78A | CA\_3A-42A | n78A |
| DC\_3A-42D\_n79A | DC\_3A\_n79A | CA\_3A-42A | n79A |
| DC\_3A-42E\_n77A | DC\_3A\_n77A | CA\_3A-42E | n77A |
| DC\_3A-42E\_n78A | DC\_3A\_n78A | CA\_3A-42E | n78A |
| DC\_3A-42E\_n79A | DC\_3A\_n79A | CA\_1A-42E | n79A |
| DC\_3A\_n77A-n79A | DC\_3A\_n77A  DC\_3A\_n79A | 3A | CA\_n77A-n79A |
| DC\_3A\_n78A-n79A | DC\_3A\_n78A  DC\_3A\_n79A | 3A | CA\_n78A-n79A |
| DC\_3A\_SUL\_n78A-n80A | DC\_3A\_n78A  DC\_3A\_n80A\_ULSUP-TDM\_n78A  DC\_3A\_n80A\_ULSUP-FDM\_n78A | 3 | SUL\_n78-n80 |
| DC\_3A\_SUL\_n78A-n82A | DC\_3A\_n78A  DC\_3A\_n82A | 3 | SUL\_n78A-n82A |
| DC\_3A\_SUL\_n79A-n80A | DC\_3A\_n79A,  DC\_3A\_n80A\_ULSUP-TDM\_n79A,  DC\_3A\_n80A\_ULSUP-FDM\_n79A | 3 | SUL\_n79A-n80A |
| DC\_5A-7A-7A\_n78A | DC\_5A\_n78A  DC\_7A\_n78A | CA\_5A-7A-7A | n78A |
| DC\_5A-7A\_n78A | DC\_5A\_n78A  DC\_7A\_n78A | CA\_5A-7A | n78A |
| DC\_5A-30A\_n66A | DC\_5A\_n66A  DC\_30A\_n66A | CA\_5A-30A | n66A |
| DC\_7A-20A\_n28A | DC\_7A\_n28A  DC\_20A\_n28A | CA\_7A-20A | n28A |
| DC\_7A-20A\_n78A | DC\_7A\_n78A  DC\_20A\_n78A | CA\_7A-20A | n78A |
| DC\_7A-28A\_n78A | DC\_7A\_n78A  DC\_28A\_n78A | CA\_7A-28A | n78A |
| DC\_7A\_n28A-n78A | DC\_7A\_n28A,  DC\_7A\_n78A | 7A | CA\_n28A-n78A |
| DC\_7C-28A\_n78A | DC\_7C\_n78A  DC\_28A\_n78A | CA\_7C-28A | n78A |
| DC\_7A-46A\_n78A | DC\_7A\_n78A  DC\_46A\_n78A | CA\_7A-46A | n78A |
| DC\_7A-46C\_n78A | DC\_7A\_n78A  DC\_46C\_n78A | CA\_7A-46C | n78A |
| DC\_7A-46D\_n78A | DC\_7A\_n78A | CA\_7A-46D | n78 |
| DC\_7A-46E\_n78A | DC\_7A\_n78A | CA\_7A-46E | n78 |
| DC\_8A\_SUL\_n78A-n81A | DC\_8A\_n78A,  DC\_8A\_n81A\_ULSUP-TDM\_n78A,  DC\_8A\_n81A\_ULSUP-FDM\_n78A | 8 | SUL\_n78A-n81A |
| DC\_8A\_SUL\_n79A-n81A | DC\_8A\_n79A,  DC\_8A\_n81A\_ULSUP-TDM\_n79A,  DC\_8A\_n81A\_ULSUP-FDM\_n79A | 8 | SUL\_n79A-n81A |
| DC\_12A-30A\_n66A | DC\_12A\_n66A  DC\_30A\_n66A | CA\_12A-30A | n66A |
| DC\_18A-28A\_n77A | DC\_18A\_n77A  DC\_28A\_n77A | CA\_18A-28A | n77A |
| DC\_18A-28A\_n78A | DC\_18A\_n78A  DC\_28A\_n78A | CA\_18A-28A | n78A |
| DC\_18A-28A\_n79A | DC\_18A\_n79A  DC\_28A\_n79A | CA\_18A-28A | n79A |
| DC\_19A-42A\_n77A  DC\_19A-42A\_n77C | DC\_19A\_n77A | CA\_19A-42A | n77A  CA\_n77C |
| DC\_19A-42A\_n78A  DC\_19A-42A\_n78C | DC\_19A\_n78A | CA\_19A-42A | n78A  CA\_n78C |
| DC\_19A-42A\_n79A  DC\_19A-42A\_n79C | DC\_19A\_n79A | CA\_19A-42A | n79A  CA\_n79C |
| DC\_19A-21A\_n78A  DC\_19A-21A\_n78C | DC\_19A\_n78A  DC\_21A\_n78A | CA\_19A-21A | n78A  CA\_n78C |
| DC\_19A-21A\_n79A  DC\_19A-21A\_n79C | DC\_19A\_n79A  DC\_21A\_n79A | CA\_19A-21A | n79A  CA\_n79C |
| DC\_19A-21A\_n77A  DC\_19A-21A\_n77C | DC\_19A\_n77A  DC\_21A\_n77A | CA\_19A-21A | n77A  CA\_n77C |
| DC\_19A-42C\_n77A | DC\_19A\_n77A | CA\_19A-42C | n77A |
| DC\_19A-42C\_n78A | DC\_19A\_n78A | CA\_19A-42C | n78A |
| DC\_19A-42C\_n79A | DC\_19A\_n79A | CA\_19A-42C | n79A |
| DC\_19A\_n77A-n79A | DC\_19A\_n77A  DC\_19A\_n79A | 19A | CA\_n77A-n79A |
| DC\_19A\_n78A-n79A | DC\_19A\_n78A  DC\_19A\_n79A | 19A | CA\_n78A-n79A |
| DC\_20A\_n8A-n75A | DC\_20A\_n8A | 20A | CA\_n8A-n75A |
| DC\_20A\_n28A-n75A | DC\_20A\_n28A | 20A | CA\_n28A-n75A |
| DC\_20A\_n28A-n78A | DC\_20A\_n28A  DC\_20A\_n78A | 20A | CA\_n28A-n78A |
| DC\_20A\_n75A-n78A | DC\_20A\_n78A | 20A | CA\_n75A-n78A |
| DC\_20A\_n76A-n78A | DC\_20A\_n78A | 20A | CA\_n76A-n78A |
| DC\_20A\_SUL\_n78A-n82A | DC\_20A\_n78A,  DC\_20A\_n82A\_ULSUP-TDM\_n78A,  DC\_20A\_n82A\_ULSUP-FDM\_n78A | 20 | SUL\_n78A-n82A |
| DC\_20A\_SUL\_n78A-n83A | DC\_20A\_n78A  DC\_20A\_n83A | 20 | SUL\_n78A-n83A |
| DC\_21A-42A\_n77A  DC\_21A-42A\_n77C | DC\_21A\_n77A | CA\_21A-42A | n77A  CA\_n77C |
| DC\_21A-42A\_n78A  DC\_21A-42A\_n78C | DC\_21A\_n78A | CA\_21A-42A | n78A  CA\_n78C |
| DC\_21A-42A\_n79A  DC\_21A-42A\_n79C | DC\_21A\_n79A | CA\_21A-42A | n79A  CA\_n79C |
| DC\_21A-42C\_n77A | DC\_21A\_n77A | CA\_21A-42C | n77A |
| DC\_21A-42C\_n78A | DC\_21A\_n78A | CA\_21A-42C | n78A |
| DC\_21A-42C\_n79A | DC\_21A\_n79A | CA\_21A-42C | n79A |
| DC\_21A\_n77A-n79A | DC\_21A\_n77A  DC\_21A\_n79A | 21A | CA\_n77A-n79A |
| DC\_21A\_n78A-n79A | DC\_21A\_n78A  DC\_21A\_n79A | 21A | CA\_n78A-n79A |
| DC\_28A\_SUL\_n78A-n83A | DC\_28A\_n78A,  DC\_28A\_n83A\_ULSUP-TDM\_n78A,  DC\_28A\_n83A\_ULSUP-FDM\_n78A | 28 | SUL\_n78A-n83A |
| DC\_28A-42A\_n77A  DC\_28A-42A\_n77C | DC\_28A\_n77A | CA\_28A-42A | n77A |
| DC\_28A-42A\_n78A  DC\_28A-42A\_n78C | DC\_28A\_n78A | CA\_28A-42A | n78A |
| DC\_28A-42A\_n79A  DC\_28A-42A\_n79C | DC\_28A\_n79A | CA\_28A-42A | n79A |
| DC\_28A-42C\_n77A | DC\_28A\_n77A | CA\_28A-42C | n77A |
| DC\_28A-42C\_n78A | DC\_28A\_n78A | CA\_28A-42C | n78A |
| DC\_28A-42C\_n79A | DC\_28A\_n79A | CA\_28A-42C | n79A |
| DC\_41A-42A\_n77A | DC\_41A\_n77A | CA\_41A-42A | n77A |
| DC\_41C-42C\_n77A | DC\_41A\_n77A | CA\_41C-42C | n77A |
| DC\_41A-42C\_n77A | DC\_41A\_n77A | CA\_41A-42C | n77A |
| DC\_41C-42A\_n77A | DC\_41C\_n77A | CA\_41C-42A | n77A |
| DC\_41A-42A\_n78A | DC\_41A\_n78A | CA\_41A-42A | n78A |
| DC\_41C-42A\_n78A | DC\_41C\_n78A | CA\_41C-42A | n78A |
| DC\_41C-42C\_n78A | DC\_41A\_n78A | CA\_41C-42C | n78A |
| DC\_41A-42C\_n78A | DC\_41A\_n78A | CA\_41A-42C | n78A |
| DC\_41A-42A\_n79A  DC\_41A-42C\_n79A | DC\_41A\_n79A | CA\_41A-42A  CA\_41A-42C | n79A |
| DC\_41C-42C\_n79A | DC\_41A\_n79A | CA\_41C-42C | n79 |
| DC\_41C-42A\_n79A | DC\_41C\_n79A | CA\_41C-42A | n79A |
| DC\_66A\_(n)71B | DC\_66A\_71A  DC\_(n)71B | CA\_66A\_71A | n71A |
| DC\_66A\_SUL\_n78A-n86A | DC\_66A\_n78A,  DC\_66A\_n86A\_ULSUP-TDM\_n78A,  DC\_66A\_n86A\_ULSUP-FDM\_n78A | 66 | SUL\_n78A-n86A |
| NOTE 1: Uplink CA configurations are the configurations supported by the present release of specifications. | | | |

#### 5.5B.4.3 Inter-band EN-DC configurations (four bands)

Table 5.5B.4.3-1: Inter-band EN-DC configurations (four bands)

| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) | E-UTRA configuration | NR configuration |
| --- | --- | --- | --- |
| DC\_1A-3A-5A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_5A\_n78A | CA\_1A-3A-5A | n78A |
| DC\_1A-3A-7A\_n28A | DC\_1A\_n28A  DC\_3A\_n28A  DC\_7A\_n28A | CA\_1A-3A-7A | n28A |
| DC\_1A-3A-7A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_7A\_n78A | CA\_1A-3A-7A | n78A |
| DC\_1A-3C-7A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_7A\_n78A | CA\_1A-3C-7A | n78A |
| DC\_1A-3A-7A-7A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_7A\_n78A | CA\_1A-3A-7A-7A | n78A |
| DC\_1A-3A-8A\_n28A | DC\_1A\_n28A  DC\_3A\_n28A  DC\_8A\_n28A | CA\_1A-3A-8A | n28A |
| DC\_1A-3A-8A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_8A\_n78A | CA\_1A-3A-8A | n78A |
| DC\_1A-3A-20A\_n28A | DC\_1A\_n28A  DC\_3A\_n28A  DC\_20A\_n28A | CA\_1A-3A-20A | n28A |
| DC\_1A-3A-20A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_20A\_n78A | CA\_1A-3A-20A | n78A |
| DC\_1A-3A-28A\_n77A | DC\_1A\_n77A  DC\_3A\_n77A  DC\_28A\_n77A | CA\_1A-3A-28A | n77A |
| DC\_1A-3A-28A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_28A\_n78A | CA\_1A-3A-28A | n78A |
| DC\_1A-3A-28A\_n79A | DC\_1A\_n79A  DC\_3A\_n79A  DC\_28A\_n79A | CA\_1A-3A-28A | n79A |
| DC\_1A-3A\_n28A-n78A | DC\_1A\_n28A  DC\_1A\_n78A  DC\_3A\_n28A  DC\_3A\_n78A | CA\_1A-3A | CA\_n28A-n78A |
| DC\_1A-3A-19A\_n77A | DC\_1A\_n77A  DC\_3A\_n77A  DC\_19A\_n77A | CA\_1A-3A-19A | n77A |
| DC\_1A-3A-19A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_19A\_n78A | CA\_1A-3A-19A | n78A |
| DC\_1A-3A-19A\_n79A | DC\_1A\_n79A  DC\_3A\_n79A  DC\_19A\_n79A | CA\_1A-3A-19A | n79A |
| DC\_1A-3A-21A\_n77A | DC\_1A\_n77A  DC\_3A\_n77A  DC\_21A\_n77A | CA\_1A-3A-21A | n77A |
| DC\_1A-3A-21A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_21A\_n78A | CA\_1A-3A-21A | n78A |
| DC\_1A-3A-21A\_n79A | DC\_1A\_n79A  DC\_3A\_n79A  DC\_21A\_n79A | CA\_1A-3A-21A | n79A |
| DC\_1A-3A-42C\_n77A | DC\_1A\_n77A  DC\_3A\_n77A | CA\_1A-3A-42C | n77A |
| DC\_1A-3A-42C\_n78A | DC\_1A\_n78A  DC\_3A\_n78A | CA\_1A-3A-42C | n78A |
| DC\_1A-3A-42C\_n79A | DC\_1A\_n79A  DC\_3A\_n79A | CA\_1A-3A-42C | n79A |
| DC\_1A-3A-42C\_n77C | DC\_1A\_n77A  DC\_3A\_n77A | CA\_1A-3A-42C | n77A |
| DC\_1A-3A-42C\_n78C | DC\_1A\_n78A  DC\_3A\_n78A | CA\_1A-3A-42C | n78A |
| DC\_1A-3A-42C\_n79C | DC\_1A\_n79A  DC\_3A\_n79A | CA\_1A-3A-42C | n79A |
| DC\_1A-5A-7A\_n78A | DC\_1A\_n78A  DC\_5A\_n78A  DC\_7A\_n78A | CA\_1A-5A-7A | n78A |
| DC\_1A-5A-7A-7A\_n78A | DC\_1A\_n78A  DC\_5A\_n78A  DC\_7A\_n78A | CA\_1A-5A-7A-7A | n78A |
| DC\_1A-7A-20A\_n28A | DC\_1A\_n28A  DC\_7A\_n28A  DC\_20A\_n28A | CA\_1A-7A-20A | n28A |
| DC\_1A-7A-20A\_n78A | DC\_1A\_n78A  DC\_7A\_n78A  DC\_20A\_n78A | CA\_1A-7A-20A | n78A |
| DC\_1A-7A\_n28A-n78A | DC\_1A\_n28A  DC\_1A\_n78A  DC\_7A\_n28A  DC\_7A\_n78A | CA\_1A-7A | CA\_n28A-n78A |
| DC\_1A-18A-28A\_n77A | DC\_1A\_n77A  DC\_18A\_n77A  DC\_28A\_n77A | CA\_1A-18A-28A | n77A |
| DC\_1A-18A-28A\_n78A | DC\_1A\_n78A  DC\_18A\_n78A  DC\_28A\_n78A | CA\_1A-18A-28A | n78A |
| DC\_1A-18A-28A\_n79A | DC\_1A\_n79A  DC\_18A\_n79A  DC\_28A\_n79A | CA\_1A-18A-28A | n79A |
| DC\_1A-19A-42A\_n77A | DC\_1A\_n77A  DC\_19A\_n77A | CA\_1A-19A-42A | n77A |
| DC\_1A-19A-42A\_n78A | DC\_1A\_n78A  DC\_19A\_n78A | CA\_1A-19A-42A | n78A |
| DC\_1A-19A-42A\_n79A | DC\_1A\_n79A  DC\_19A\_n79A | CA\_1A-19A-42A | n79A |
| DC\_1A-19A-42C\_n77A | DC\_1A\_n77A  DC\_19A\_n77A | CA\_1A-19A-42C | n77A |
| DC\_1A-19A-42C\_n78A | DC\_1A\_n78A  DC\_19A\_n78A | CA\_1A-19A-42C | n78A |
| DC\_1A-19A-42C\_n79A | DC\_1A\_n79A  DC\_19A\_n79A | CA\_1A-19A-42C | n79A |
| DC\_1A-19A-42C\_n77C | DC\_1A\_n77A  DC\_19A\_n77A | CA\_1A-19A-42C | n77A |
| DC\_1A-19A-42C\_n78C | DC\_1A\_n78A  DC\_19A\_n78A | CA\_1A-19A-42C | n78A |
| DC\_1A-19A-42C\_n79C | DC\_1A\_n79A  DC\_19A\_n79A | CA\_1A-19A-42C | n79A |
| DC\_1A-20A\_n28A-n78A | DC\_1A\_n28A  DC\_1A\_n78A  DC\_20A\_n28A  DC\_20A\_n78A | CA\_1A-20A | CA\_n28A-n78A |
| DC\_1A-21A-28A\_n77A | DC\_1A\_n77A  DC\_21A\_n77A  DC\_28A\_n77A | CA\_1A-21A-28A | n77A |
| DC\_1A-21A-28A\_n78A | DC\_1A\_n78A  DC\_21A\_n78A  DC\_28A\_n78A | CA\_1A-21A-28A | n78A |
| DC\_1A-21A-28A\_n79A | DC\_1A\_n79A  DC\_21A\_n79A  DC\_28A\_n79A | CA\_1A-21A-28A | n79A |
| DC\_1A-21A-42A\_n77A | DC\_1A\_n77A  DC\_21A\_n77A | CA\_1A-21A-42A | n77A |
| DC\_1A-21A-42A\_n78A | DC\_1A\_n78A  DC\_21A\_n78A | CA\_1A-21A-42A | n78A |
| DC\_1A-21A-42A\_n79A | DC\_1A\_n79A  DC\_21A\_n79A | CA\_1A-21A-42A | n79A |
| DC\_1A-21A-42C\_n77A | DC\_1A\_n77A  DC\_21A\_n77A | CA\_1A-21A-42C | n77A |
| DC\_1A-21A-42C\_n78A | DC\_1A\_n78A  DC\_21A\_n78A | CA\_1A-21A-42C | n78A |
| DC\_1A-21A-42C\_n79A | DC\_1A\_n79A  DC\_21A\_n79A | CA\_1A-21A-42C | n79A |
| DC\_1A-21A-42C\_n77C | DC\_1A\_n77A  DC\_21A\_n77A | CA\_1A-21A-42C | n77A |
| DC\_1A-21A-42C\_n78C | DC\_1A\_n78A  DC\_21A\_n78A | CA\_1A-21A-42C | n78A |
| DC\_1A-21A-42C\_n79C | DC\_1A\_n79A  DC\_21A\_n79A | CA\_1A-21A-42C | n79A |
| DC\_1A-28A-42A\_n77A | DC\_1A\_n77A  DC\_28A\_n77A | CA\_1A-28A-42A | n77A |
| DC\_1A-28A-42A\_n78A | DC\_1A\_n78A  DC\_28A\_n78A | CA\_1A-28A-42A | n78A |
| DC\_1A-28A-42A\_n79A | DC\_1A\_n79A  DC\_28A\_n79A | CA\_1A-28A-42A | n79A |
| DC\_1A-28A-42C\_n77A | DC\_1A\_n77A  DC\_28A\_n77A | CA\_1A-28A-42A | n77A |
| DC\_1A-28A-42C\_n78A | DC\_1A\_n78A  DC\_28A\_n78A | CA\_1A-28A-42A | n78A |
| DC\_1A-28A-42C\_n79A | DC\_1A\_n79A  DC\_28A\_n79A | CA\_1A-28A-42A | n79A |
| DC\_1A-41A-42A\_n77A | DC\_1A\_n77A  DC\_41A\_n77A | CA\_1A-41A-42A | n77A |
| DC\_1A-41A-42C\_n77A | DC\_1A\_n77A  DC\_41A\_n77A | CA\_1A-41A-42C | n77A |
| DC\_1A-41C-42A\_n77A | DC\_1A\_n77A  DC\_41A\_n77A | CA\_1A-41C-42A | n77A |
| DC\_1A-41A-42A\_n78A | DC\_1A\_n78A  DC\_41A\_n78A | CA\_1A-41A-42A | n78A |
| DC\_1A-41A-42C\_n78A | DC\_1A\_n78A  DC\_41A\_n78A | CA\_1A-41A-42C | n78A |
| DC\_1A-41C-42A\_n78A | DC\_1A\_n78A  DC\_41A\_n78A | CA\_1A-41C-42A | n78A |
| DC\_1A-41A-42A\_n79A | DC\_1A\_n79A  DC\_41A\_n79A | CA\_1A-41A-42A | n79A |
| DC\_1A-41A-42C\_n79A | DC\_1A\_n79A  DC\_41A\_n79A | CA\_1A-41A-42C | n79A |
| DC\_1A-41C-42A\_n79A | DC\_1A\_n79A  DC\_41A\_n79A | CA\_1A-41C-42A | n79A |
| DC\_1A-41C-42C\_n77A | DC\_1A\_n77A  DC\_41A\_n77A | CA\_1A-41C-42C | n77A |
| DC\_1A-41C-42C\_n78A | DC\_1A\_n78A  DC\_41A\_n78A | CA\_1A-41C-42C | n78A |
| DC\_1A-41C-42C\_n79A | DC\_1A\_n79A  DC\_41A\_n79A | CA\_1A-41C-42C | n79A |
| DC\_2A-66A-(n)71B | DC\_2A\_n71A  DC\_66A\_n71A  DC\_(n)71B | CA\_2A-66A-71A | n71A |
| DC\_3A-5A-7A-7A\_n78A | DC\_3A\_n78A  DC\_5A\_n78A  DC\_7A\_n78A | CA\_3A-5A-7A-7A | n78A |
| DC\_3A-5A-7A\_n78A | DC\_3A\_n78A  DC\_5A\_n78A  DC\_7A\_n78A | CA\_3A-5A-7A | n78A |
| DC\_3A-7A-20A\_n28A | DC\_3A\_n28A  DC\_7A\_n28A  DC\_20A\_n28A | CA\_3A-7A-20A | n28A |
| DC\_3A-7A-20A\_n78A | DC\_3A\_n78A  DC\_28A\_n78A  DC\_7A\_n78A | CA\_3A-7A-20A | n78A |
| DC\_3A-7A-28A\_n78A | DC\_3A-7A\_n78A  DC\_3A-28A\_n78A  DC\_7A-28A\_n78A | CA\_3A-7A-28A | n78A |
| DC\_3A-7C-28A\_n78A | DC\_3A\_n78A  DC\_7A\_n78A  DC\_28A\_n78A | CA\_3A-7C-28A | n78A |
| DC\_3A-7A\_n28A-n78A | DC\_3A\_n28A  DC\_3A\_n78A  DC\_7A\_n28A  DC\_7A\_n78A | CA\_3A-7A | CA\_n28A-n78A |
| DC\_3A-19A-21A\_n77A | DC\_3A\_n77A  DC\_19A\_n77A  DC\_21A\_n77A | CA\_3A-19A-21A | n77A |
| DC\_3A-19A-21A\_n78A | DC\_3A\_n78A  DC\_19A\_n78A  DC\_21A\_n78A | CA\_3A-19A-21A | n78A |
| DC\_3A-19A-21A\_n79A | DC\_3A\_n79A  DC\_19A\_n79A  DC\_21A\_n79A | CA\_3A-19A-21A | n79A |
| DC\_3A-19A-42A\_n77A | DC\_3A\_n77A  DC\_19A\_n77A | CA\_3A-19A-42A | n77A |
| DC\_3A-19A-42C\_n77A | DC\_3A\_n77A  DC\_19A\_n77A | CA\_3A-19A-42C | n77A |
| DC\_3A-19A-42C\_n77C | DC\_3A\_n77A  DC\_19A\_n77A | CA\_3A-19A-42C | n77A |
| DC\_3A-19A-42A\_n78A | DC\_3A\_n78A  DC\_19A\_n78A | CA\_3A-19A-42A | n78A |
| DC\_3A-19A-42C\_n78A | DC\_3A\_n78A  DC\_19A\_n78A | CA\_3A-19A-42C | n78A |
| DC\_3A-19A-42C\_n78C | DC\_3A\_n78A  DC\_19A\_n78A | CA\_3A-19A-42C | n78A |
| DC\_3A-19A-42A\_n79A | DC\_3A\_n79A  DC\_19A\_n79A | CA\_3A-19A-42A | n79A |
| DC\_3A-19A-42C\_n79A | DC\_3A\_n79A  DC\_19A\_n79A | CA\_3A-19A-42C | n79A |
| DC\_3A-19A-42C\_n79C | DC\_3A\_n79A  DC\_19A\_n79A | CA\_3A-19A-42C | n79A |
| DC\_3A-20A\_n28A-n78A | DC\_3A\_n28A  DC\_3A\_n78A  DC\_20A\_n28A  DC\_20A\_n78A | CA\_3A-20A | CA\_n28A-n78A |
| DC\_3A-21A-42C\_n77A | DC\_3A\_n77A  DC\_21A\_n77A | CA\_3A-21A-42C | n77A |
| DC\_3A-21A-42C\_n78A | DC\_3A\_n78A  DC\_21A\_n78A | CA\_3A-21A-42C | n78A |
| DC\_3A-21A-42C\_n79A | DC\_3A\_n79A  DC\_21A\_n79A | CA\_3A-21A-42C | n79A |
| DC\_3A-21A-42C\_n77C | DC\_3A\_n77A  DC\_21A\_n77A | CA\_3A-21A-42C | n77A |
| DC\_3A-21A-42C\_n78C | DC\_3A\_n78A  DC\_21A\_n78A | CA\_3A-21A-42C | n78A |
| DC\_3A-21A-42C\_n79C | DC\_3A\_n79A  DC\_21A\_n79A | CA\_3A-21A-42C | n79A |
| DC\_3A-28A-42A\_n77A | DC\_3A\_n77A  DC\_28A\_n77A | CA\_3A-28A-42A | n77A |
| DC\_3A-28A-42A\_n78A | DC\_3A\_n78A  DC\_28A\_n78A | CA\_3A-28A-42A | n78A |
| DC\_3A-28A-42A\_n79A | DC\_3A\_n79A  DC\_28A\_n79A | CA\_3A-28A-42A | n79A |
| DC\_3A-28A-42C\_n77A | DC\_3A\_n77A  DC\_28A\_n77A | CA\_3A-28A-42A | n77A |
| DC\_3A-28A-42C\_n78A | DC\_3A\_n78A  DC\_28A\_n78A | CA\_3A-28A-42A | n78A |
| DC\_3A-28A-42C\_n79A | DC\_3A\_n79A  DC\_28A\_n79A | CA\_3A-28A-42A | n79A |
| DC\_7A-20A\_n28A-n78A | DC\_7A\_n28A  DC\_7A\_n78A  DC\_20A\_n28A  DC\_20A\_n78A | CA\_7A-20A | CA\_n28A-n78A |
| DC\_19A-21A-42A\_n77A | DC\_19A\_n77A  DC\_21A\_n77A | CA\_19A-21A-42A | n77A |
| DC\_19A-21A-42A\_n78A | DC\_19A\_n78A  DC\_21A\_n78A | CA\_19A-21A-42A | n78A |
| DC\_19A-21A-42A\_n79A | DC\_19A\_n79A  DC\_21A\_n79A | CA\_19A-21A-42A | n79A |
| DC\_19A-21A-42C\_n77A | DC\_19A\_n77A  DC\_21A\_n77A | CA\_19A-21A-42C | n77A |
| DC\_19A-21A-42C\_n78A | DC\_19A\_n78A  DC\_21A\_n78A | CA\_19A-21A-42C | n78A |
| DC\_19A-21A-42C\_n79A | DC\_19A\_n79A  DC\_21A\_n79A | CA\_19A-21A-42C | n79A |
| DC\_19A-21A-42C\_n77C | DC\_19A\_n77A  DC\_21A\_n77A | CA\_19A-21A-42C | n77A |
| DC\_19A-21A-42C\_n78C | DC\_19A\_n78A  DC\_21A\_n78A | CA\_19A-21A-42C | n78A |
| DC\_19A-21A-42C\_n79C | DC\_19A\_n79A  DC\_21A\_n79A | CA\_19A-21A-42C | n79A |
| DC\_21A-28A-42A\_n77A | DC\_21A\_n77A  DC\_28A\_n77A | CA\_21A-28A-42A | n77A |
| DC\_21A-28A-42A\_n78A | DC\_21A\_n78A  DC\_28A\_n78A | CA\_21A-28A-42A | n78A |
| DC\_21A-28A-42A\_n79A | DC\_21A\_n79A  DC\_28A\_n79A | CA\_21A-28A-42A | n79A |
| DC\_21A-28A-42C\_n77A | DC\_21A\_n77A  DC\_28A\_n77A | CA\_21A-28A-42A | n77A |
| DC\_21A-28A-42C\_n78A | DC\_21A\_n78A  DC\_28A\_n78A | CA\_21A-28A-42A | n78A |
| DC\_21A-28A-42C\_n79A | DC\_21A\_n79A  DC\_28A\_n79A | CA\_21A-28A-42A | n79A |
| NOTE 1: Uplink CA configurations are the configurations supported by the present release of specifications. | | | |

#### 5.5B.4.4 Inter-band EN-DC configurations (five bands)

Table 5.5B.4.4-1: Inter-band EN-DC configurations (five bands)

| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) | E-UTRA configuration | NR configuration |
| --- | --- | --- | --- |
| DC\_1A-3A-5A-7A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_5A\_n78A  DC\_7A\_n78A | CA\_1A-3A-5A-7A | n78A |
| DC\_1A-3A-7A-20A\_n28A | DC\_1A\_n28A  DC\_3A\_n28A  DC\_7A\_n28A  DC\_20A\_n28A | CA\_1A-3A-7A-20A | n28A |
| DC\_1A-3A-5A-7A-7A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_5A\_n78A  DC\_7A\_n78A | CA\_1A-3A-5A-7A-7A | n78A |
| DC\_1A-3A-7A-20A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_7A\_n78A  DC\_20A\_n78A | CA\_1A-3A-7A-20A | n78A |
| DC\_1A-3A-7A\_n28A-n78A | DC\_1A\_n28A  DC\_1A\_n78A  DC\_3A\_n28A  DC\_3A\_n78A  DC\_7A\_n28A  DC\_7A\_n78A | CA\_1A-3A-7A | CA\_n28A-n78A |
| DC\_1A-3A-19A-21A\_n77A | DC\_1A\_n77A  DC\_3A\_n77A  DC\_19A\_n77A  DC\_21A\_n77A | CA\_1A-3A-19A-21A | n77A |
| DC\_1A-3A-19A-21A\_n77C | DC\_1A\_n77A  DC\_3A\_n77A  DC\_19A\_n77A  DC\_21A\_n77A | CA\_1A-3A-19A-21A | n77A |
| DC\_1A-3A-19A-21A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_19A\_n78A  DC\_21A\_n78A | CA\_1A-3A-19A-21A | n78A |
| DC\_1A-3A-19A-21A\_n78C | DC\_1A\_n78A  DC\_3A\_n78A  DC\_19A\_n78A  DC\_21A\_n78A | CA\_1A-3A-19A-21A | n78A |
| DC\_1A-3A-19A-21A\_n79A | DC\_1A\_n79A  DC\_3A\_n79A  DC\_19A\_n79A  DC\_21A\_n79A | CA\_1A-3A-19A-21A | n79A |
| DC\_1A-3A-19A-21A\_n79C | DC\_1A\_n79A  DC\_3A\_n79A  DC\_19A\_n79A  DC\_21A\_n79A | CA\_1A-3A-19A-21A | n79A |
| DC\_1A-3A-19A-42A\_n77A | DC\_1A\_n77A  DC\_3A\_n77A  DC\_19A\_n77A | CA\_1A-3A-19A-42A | n77A |
| DC\_1A-3A-19A-42A\_n77C | DC\_1A\_n77A  DC\_3A\_n77A  DC\_19A\_n77A | CA\_1A-3A-19A-42A | n77A |
| DC\_1A-3A-19A-42C\_n77A | DC\_1A\_n77A  DC\_3A\_n77A  DC\_19A\_n77A | CA\_1A-3A-19A-42C | n77A |
| DC\_1A-3A-19A-42C\_n77C | DC\_1A\_n77A  DC\_3A\_n77A  DC\_19A\_n77A | CA\_1A-3A-19A-42A | n77C |
| DC\_1A-3A-19A-42A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_19A\_n78A | CA\_1A-3A-19A-42A | n78A |
| DC\_1A-3A-19A-42A\_n78C | DC\_1A\_n78A  DC\_3A\_n78A  DC\_19A\_n78 | CA\_1A-3A-19A-42A | n78A |
| DC\_1A-3A-19A-42C\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_19A\_n78A | CA\_1A-3A-19A-42C | n78A |
| DC\_1A-3A-19A-42C\_n78C | DC\_1A\_n78A  DC\_3A\_n78A  DC\_19A\_n78A | CA\_1A-3A-19A-42C | n78C |
| DC\_1A-3A-19A-42A\_n79A | DC\_1A\_n79A  DC\_3A\_n79A  DC\_19A\_n79A | CA\_1A-3A-19A-42A | n79A |
| DC\_1A-3A-19A-42A\_n79C | DC\_1A\_n79A  DC\_3A\_n79A  DC\_19A\_n79A | CA\_1A-3A-19A-42A | n79A |
| DC\_1A-3A-19A-42C\_n79A | DC\_1A\_n79A  DC\_3A\_n79A  DC\_19A\_n79A | CA\_1A-3A-19A-42C | n79A |
| DC\_1A-3A-19A-42C\_n79C | DC\_1A\_n79A  DC\_3A\_n79A  DC\_19A\_n79A | CA\_1A-3A-19A-42C | n79C |
| DC\_1A-3A-20A\_n28A-n78A | DC\_1A\_n28A  DC\_1A\_n78A  DC\_3A\_n28A  DC\_3A\_n78A  DC\_20A\_n28A  DC\_20A\_n78A | CA\_1A-3A-20A | CA\_n28A-n78A |
| DC\_1A-3A-21A-42C\_n77A | DC\_1A\_n77A  DC\_3A\_n77A  DC\_21A\_n77A | CA\_1A-3A-21A-42C | n77A |
| DC\_1A-3A-21A-42C\_n77C | DC\_1A\_n77A  DC\_3A\_n77A  DC\_21A\_n77A | CA\_1A-3A-21A-42C | n77C |
| DC\_1A-3A-21A-42C\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_21A\_n78A | CA\_1A-3A-21A-42C | n78A |
| DC\_1A-3A-21A-42C\_n78C | DC\_1A\_n78A  DC\_3A\_n78A  DC\_21A\_n78A | CA\_1A-3A-21A-42C | n78C |
| DC\_1A-3A-21A-42C\_n79A | DC\_1A\_n79A  DC\_3A\_n79A  DC\_19A\_n79A | CA\_1A-3A-21A-42C | n79A |
| DC\_1A-3A-21A-42C\_n79C | DC\_1A\_n79A  DC\_3A\_n79A  DC\_19A\_n79A | CA\_1A-3A-21A-42C | n79C |
| DC\_1A-3A-28A-42A\_n77A | DC\_1A\_n77A  DC\_3A\_n77A  DC\_28A\_n77A | CA\_1A-3A-28A-42A | n77A |
| DC\_1A-3A-28A-42A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_28A\_n78A | CA\_1A-3A-28A-42A | n78A |
| DC\_1A-3A-28A-42A\_n79A | DC\_1A\_n79A  DC\_3A\_n79A  DC\_28A\_n79A | CA\_1A-3A-28A-42A | n79A |
| DC\_1A-3A-28A-42C\_n77A | DC\_1A\_n77A  DC\_3A\_n77A  DC\_28A\_n77A | CA\_1A-3A-28A-42C | n77A |
| DC\_1A-3A-28A-42C\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_28A\_n78A | CA\_1A-3A-28A-42C | n78A |
| DC\_1A-3A-28A-42C\_n79A | DC\_1A\_n79A  DC\_3A\_n79A  DC\_28A\_n79A | CA\_1A-3A-28A-42C | n79A |
| DC\_1A-7A-20A\_n28A-n78A | DC\_1A\_n28A  DC\_1A\_n78A  DC\_7A\_n28A  DC\_7A\_n78A  DC\_20A\_n28A  DC\_20A\_n78A | CA\_1A-7A-20A | CA\_n28A-n78A |
| DC\_1A-19A-21A-42A\_n77A | DC\_1A\_n77A  DC\_19A\_n77A  DC\_21A\_n77A | CA\_1A-19A-21A-42A | n77A |
| DC\_1A-19A-21A-42A\_n78A | DC\_1A\_n78A  DC\_19A\_n78A  DC\_21A\_n78A | CA\_1A-19A-21A-42A | n78A |
| DC\_1A-19A-21A-42A\_n79A | DC\_1A\_n79A  DC\_19A\_n79A  DC\_21A\_n79A | CA\_1A-19A-21A-42A | n79A |
| DC\_1A-19A-21A-42A\_n77C | DC\_1A\_n77A  DC\_19A\_n77A  DC\_21A\_n77A | CA\_1A-19A-21A-42A | n77A |
| DC\_1A-19A-21A-42A\_n78C | DC\_1A\_n78A  DC\_19A\_n78A  DC\_21A\_n78A | CA\_1A-19A-21A-42A | n78A |
| DC\_1A-19A-21A-42A\_n79C | DC\_1A\_n79A  DC\_19A\_n79A  DC\_21A\_n79A | CA\_1A-19A-21A-42A | n79A |
| DC\_1A-19A-21A-42C\_n77A | DC\_1A\_n77A  DC\_19A\_n77A  DC\_21A\_n77A | CA\_1A-19A-21A-42C | n77A |
| DC\_1A-19A-21A-42C\_n77C | DC\_1A\_n77A  DC\_19A\_n77A  DC\_21A\_n77A | CA\_1A-19A-21A-42C | n77C |
| DC\_1A-19A-21A-42C\_n78A | DC\_1A\_n78A  DC\_19A\_n78A  DC\_21A\_n78A | CA\_1A-19A-21A-42C | n78A |
| DC\_1A-19A-21A-42C\_n78C | DC\_1A\_n78A  DC\_19A\_n78A  DC\_21A\_n78A | CA\_1A-19A-21A-42C | n78C |
| DC\_1A-19A-21A-42C\_n79A | DC\_1A\_n79A  DC\_19A\_n79A  DC\_21A\_n79A | CA\_1A-19A-21A-42C | n79A |
| DC\_1A-19A-21A-42C\_n79C | DC\_1A\_n79A  DC\_19A\_n79A  DC\_21A\_n79A | CA\_1A-19A-21A-42C | n79C |
| DC\_1A-21A-28A-42A\_n77A | DC\_1A\_n77A  DC\_21A\_n77A  DC\_28A\_n77A | CA\_1A-21A-28A-42A | n77A |
| DC\_1A-21A-28A-42A\_n78A | DC\_1A\_n78A  DC\_21A\_n78A  DC\_28A\_n78A | CA\_1A-21A-28A-42A | n78A |
| DC\_1A-21A-28A-42A\_n79A | DC\_1A\_n79A  DC\_21A\_n79A  DC\_28A\_n79A | CA\_1A-21A-28A-42A | n79A |
| DC\_1A-21A-28A-42C\_n77A | DC\_1A\_n77A  DC\_21A\_n77A  DC\_28A\_n77A | CA\_1A-21A-28A-42C | n77A |
| DC\_1A-21A-28A-42C\_n78A | DC\_1A\_n78A  DC\_21A\_n78A  DC\_28A\_n78A | CA\_1A-21A-28A-42C | n78A |
| DC\_1A-21A-28A-42C\_n79A | DC\_1A\_n79A  DC\_21A\_n79A  DC\_28A\_n79A | CA\_1A-21A-28A-42C | n79A |
| DC\_3A-7A-20A\_n28A-n78A | DC\_3A\_n28A  DC\_3A\_n78A  DC\_7A\_n28A  DC\_7A\_n78A  DC\_20A\_n28A  DC\_20A\_n78A | CA\_3A-7A-20A | CA\_n28A-n78A |
| NOTE 1: Uplink CA configurations are the configurations supported by the present release of specifications. | | | |

#### 5.5B.4.5 Inter-band EN-DC configurations (six bands)

Table 5.5B.4.5-1: Inter-band EN-DC configurations (six bands)

|  |  |  |  |
| --- | --- | --- | --- |
| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) | E-UTRA configuration | NR configuration |
| DC\_1A-3A-7A-20A\_n28A-n78A | DC\_1A\_n28A  DC\_1A\_n78A  DC\_3A\_n28A  DC\_3A\_n78A  DC\_7A\_n28A  DC\_7A\_n78A  DC\_20A\_n28A  DC\_20A\_n78A | CA\_1A-3A-7A-20A | CA\_n28A-n78A |
| NOTE 1: Uplink CA configurations are the configurations supported by the present release of specifications. | | | |

### 5.5B.5 Inter-band EN-DC including FR2

Supported channel bandwidths for E-UTRA operating bands and CA configurations are defined in TS 36.101 and for NR operating bands and CA configurations in TS 38.101-1, TS 38.101-2 and TS 38.101-3.

#### 5.5B.5.1 Inter-band EN-DC configurations (two bands)

Table 5.5B.5.1-1: Inter-band EN-DC configurations (two bands)

| **EN-DC**  **configuration** | **Uplink EN-DC**  **configuration**  **(NOTE 1)** | **E-UTRA configuration** | **NR configuration** |
| --- | --- | --- | --- |
| DC\_1A\_n257A  DC\_1A\_n257D DC\_1A\_n257E DC\_1A\_n257F | DC\_1A\_n257A | 1A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_2A\_n257A  DC\_2A\_n257(2A) | DC\_2A\_n257A | 2A | n257A  CA\_n257(2A) |
| DC\_2A-2A\_n257A | DC\_2A-2A\_n257A | CA\_2A-2A | n257A |
| DC\_2A\_n257A | DC\_2A\_n257A | 2 | n257A |
| DC\_2C\_n257A | DC\_2C\_n257A | CA\_2C | n257A |
| DC\_2A\_n260  DC\_2A\_n260(2A) | DC\_2A\_n260A | 2A | n260A  CA\_n260(2A) |
| DC\_2A-2A\_n260A | DC\_2A\_n260A | CA\_2A-2A | n260A |
| DC\_2C\_n260A | DC\_2C\_n260A | CA\_2C | n260A |
| DC\_3A\_n257A  DC\_3A\_n257D  DC\_3A\_n257E  DC\_3A\_n257F | DC\_3A\_n257A | 3A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_3A\_n258A | DC\_3A\_n258A | 3 | n258A |
| DC\_5A-5A\_n257A | DC\_5A\_n257A | CA\_5A-5A | n257A |
| DC\_5A-5A\_n260A | DC\_5A\_n260A | CA\_5A-5A | n260A |
| DC\_5A\_n257A | DC\_5A\_n257A | 5 | n257A |
| DC\_5A\_n260A  DC\_5A\_n260B  DC\_5A\_n260C  DC\_5A\_n260D  DC\_5A\_n260E  DC\_5A\_n260F  DC\_5A\_n260G  DC\_5A\_n260H  DC\_5A\_n260I  DC\_5A\_n260J  DC\_5A\_n260K  DC\_5A\_n260L  DC\_5A\_n260M  DC\_5A\_n260O  DC\_5A\_n260P  DC\_5A\_n260Q  DC\_5A\_n260(2A)  DC\_5A\_n260(3A)  DC\_5A\_n260(4A)  DC\_5A-n260(D-G)  DC\_5A-n260(D-H)  DC\_5A-n260(D-I)  DC\_5A-n260(D-O)  DC\_5A-n260(D-P)  DC\_5A-n260(D-Q)  DC\_5A-n260(E-O)  DC\_5A-n260(E-P)  DC\_5A-n260(E-Q) | DC\_5A\_n260A | 5 | n260A  CA\_n260B  CA\_n260C  CA\_n260D  CA\_n260E  CA\_n260F  CA\_n260G  CA\_n260H  CA\_n260I  CA\_n260J  CA\_n260K  CA\_n260L  CA\_n260M  CA\_n260O  CA\_n260P  CA\_n260Q  CA\_n260(2A)  CA\_n260(3A)  CA\_n260(4A)  CA\_n260(D-G)  CA\_n260(D-H)  CA\_n260(D-I)  CA\_n260(D-O)  CA\_n260(D-P)  CA\_n260(D-Q)  CA\_n260(E-O)  CA\_n260(E-P)  CA\_n260(E-Q) |
| DC\_5A\_n261A  DC\_5A\_n261B  DC\_5A\_n261C  DC\_5A\_n261D  DC\_5A\_n261E  DC\_5A\_n261F  DC\_5A\_n261G  DC\_5A\_n261H  DC\_5A\_n261I  DC\_5A\_n261J  DC\_5A\_n261K  DC\_5A\_n261L  DC\_5A\_n261M  DC\_5A\_n261O  DC\_5A\_n261P  DC\_5A\_n261Q  DC\_5A-n261(2A)  DC\_5A-n261(3A)  DC\_5A-n261(4A)  DC\_5A-n261(D-G)  DC\_5A-n261(D-H)  DC\_5A-n261(D-I)  DC\_5A-n261(D-O)  DC\_5A-n261(D-P)  DC\_5A-n261(D-Q)  DC\_5A-n261(E-O)  DC\_5A-n261(E-P)  DC\_5A-n261(E-Q) | DC\_5A\_n261A | 5 | n261A  CA\_n261B  CA\_n261C  CA\_n261D  CA\_n261E  CA\_n261F  CA\_n261G  CA\_n261H  CA\_n261I  CA\_n261J  CA\_n261K  CA\_n261L  CA\_n261M  CA\_n261O  CA\_n261P  CA\_n261Q  CA\_n261(2A)  CA\_n261(3A)  CA\_n261(4A)  CA\_n261(D-G)  CA\_n261(D-H)  CA\_n261(D-I)  CA\_n261(D-O)  CA\_n261(D-P)  CA\_n261(D-Q)  CA\_n261(E-O)  CA\_n261(E-P)  CA\_n261(E-Q) |
| DC\_5B\_n257A | DC\_5B\_n257A | CA\_5B | n257A |
| DC\_5B\_n260A | DC\_5B\_n260A | CA\_5B | n260A |
| DC\_7A-7A\_n257A | DC\_7A\_n257A | CA\_7A-7A | n257A |
| DC\_7A\_n257A | DC\_7A\_n257A | 7 | n257A |
| DC\_7A\_n258A | DC\_7A\_n258A | 7 | n258A |
| DC\_8A\_n257A | DC\_8A\_n257A | 8 | n257A |
| DC\_8A\_n258A | DC\_8A\_n258A | 8 | n258A |
| DC\_11A\_n257A | DC\_11A\_n257A | 11 | n257A |
| DC\_12A\_n260A | DC\_12A\_n260A | 12A | n260A |
| DC\_13A\_n257A | DC\_13A\_n257A | 13 | n257A |
| DC\_13A\_n260A | DC\_13A\_n260A | 13 | n260A |
| DC\_18A\_n257A | DC\_18A\_n257A | 18 | n257A |
| DC\_19A\_n257A  DC\_19A\_n257D  DC\_19A\_n257E  DC\_19A\_n257F | DC\_19A\_n257A | 19A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_20A\_n258A | DC\_20A\_n258A | 20A | n258A |
| DC\_21A\_n257A  DC\_21A\_n257D  DC\_21A\_n257E  DC\_21A\_n257F | DC\_21A\_n257A | 21A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_26A\_n257A | DC\_26A\_n257A | 26 | n257A |
| DC\_28A\_n257A  DC\_28A\_n257D  DC\_28A\_n257E  DC\_28A\_n257F | DC\_28A\_n257A | 28A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_28A\_n258A | DC\_28A\_n258A | 28 | n258A |
| DC\_30A\_n260A | DC\_30A\_n260A | 30A | CA\_n260A |
| DC\_41A\_n257A  DC\_41C\_n257A | DC\_41A\_n257A | 41 | n257A |
| DC\_41A\_n258A | DC\_41A\_n258A | 41A | CA\_n258A |
| DC\_41C\_n257A | DC\_41C\_n257A | CA\_41C | n257A |
| DC\_42A\_n257A  DC\_42C\_n257A  DC\_42A\_n257D  DC\_42A\_n257E  DC\_42A\_n257F | DC\_42A\_n257A | 42 | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_42D\_n257A | DC\_42C\_n257A | CA\_42C | n257A |
| DC\_42E\_n257A | DC\_42A\_n257A | 42 | n257A |
| DC\_48A-48A\_n257A | DC\_48A\_n257A | CA\_48A-48A | n257A |
| DC\_48A-48A\_n260A | DC\_48A\_n260A | CA\_48A-48A | n260A |
| DC\_48A\_n257A | DC\_48A\_n257A | 48 | n257A |
| DC\_48C\_n257A | DC\_48C\_n257A | CA\_48C | n257A |
| DC\_48C\_n260A | DC\_48C\_n260A | CA\_48C | n260A |
| DC\_48A\_n260A | DC\_48A\_n260A | 48 | n260A |
| DC\_66A-66A\_n257A | DC\_66A\_n257A | CA\_66A-66A | n257A |
| DC\_66A-66A\_n260A | DC\_66A\_n260A | CA\_66A-66A | n260A |
| DC\_66A\_n257A  DC\_66A\_n257(2A)  DC\_66A\_n257G  DC\_66A\_n257H  DC\_66A\_n257I  DC\_66A\_n257J  DC\_66A\_n257K  DC\_66A\_n257L  DC\_66A\_n257M | DC\_66A\_n257A | 66 | n257A  CA\_n257(2A)  CA\_n257G  CA\_n257H  CA\_n257I  CA\_n257J  CA\_n257K  CA\_n257L  CA\_n257M |
| DC\_66A\_n260A  DC\_66A\_n260D  DC\_66A\_n260E  DC\_66A\_n260F  DC\_66A\_n260G  DC\_66A\_n260H  DC\_66A\_n260I  DC\_66A\_n260J  DC\_66A\_n260K  DC\_66A\_n260L  DC\_66A\_n260M  DC\_66A\_n260O  DC\_66A\_n260P  DC\_66A\_n260Q  DC\_66A\_n260(2A)  DC\_66A\_n260(3A)  DC\_66A\_n260(4A)  DC\_66A-n260(D-G)  DC\_66A-n260(D-H)  DC\_66A-n260(D-I)  DC\_66A-n260(D-O)  DC\_66A-n260(D-P)  DC\_66A-n260(D-Q)  DC\_66A-n260(E-O)  DC\_66A-n260(E-P)  DC\_66A-n260(E-Q) | DC\_66A\_n260A | 66 | n260A  CA\_n260D  CA\_n260E  CA\_n260F  CA\_n260G  CA\_n260H  CA\_n260I  CA\_n260J  CA\_n260K  CA\_n260L  CA\_n260M  CA\_n260O  CA\_n260P  CA\_n260Q  CA\_n260(2A)  CA\_n260(3A)  CA\_n260(4A)  CA\_n260(D-G)  CA\_n260(D-H)  CA\_n260(D-I)  CA\_n260(D-O)  CA\_n260(D-P)  CA\_n260(D-Q)  CA\_n260(E-O)  CA\_n260(E-P)  CA\_n260(E-Q) |
| DC\_66C\_n257A | DC\_66C\_n257A | CA\_66C | n257A |
| DC\_66A\_n261A  DC\_66A\_n261D  DC\_66A\_n261E  DC\_66A\_n261F  DC\_66A\_n261G  DC\_66A\_n261H  DC\_66A\_n261I  DC\_66A\_n261J  DC\_66A\_n261K  DC\_66A\_n261L  DC\_66A\_n261M  DC\_66A\_n261O  DC\_66A\_n261P  DC\_66A\_n261Q  DC\_66A-n261(2A)  DC\_66A-n261(3A)  DC\_66A-n261(4A)  DC\_66A-n261(D-G)  DC\_66A-n261(D-H)  DC\_66A-n261(D-I)  DC\_66A-n261(D-O)  DC\_66A-n261(D-P)  DC\_66A-n261(D-Q)  DC\_66A-n261(E-O)  DC\_66A-n261(E-P)  DC\_66A-n261(E-Q) | DC\_66A\_n261A | 66A | n261A  CA\_n261D  CA\_n261E  CA\_n261F  CA\_n261G  CA\_n261H  CA\_n261I  CA\_n261J  CA\_n261K  CA\_n261L  CA\_n261M  CA\_n261O  CA\_n261P  CA\_n261Q  CA\_n261(2A)  CA\_n261(3A)  CA\_n261(4A)  CA\_n261(D-G)  CA\_n261(D-H)  CA\_n261(D-I)  CA\_n261(D-O)  CA\_n261(D-P)  CA\_n261(D-Q)  CA\_n261(E-O)  CA\_n261(E-P)  CA\_n261(E-Q) |
| NOTE 1: Uplink CA configurations are the configurations supported by the present release of specifications. | | | |

#### 5.5B.5.2 Inter-band EN-DC configurations (three bands)

Table 5.5B.5.2-1: Inter-band EN-DC configurations (three bands)

| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) | E-UTRA configuration | NR configuration |
| --- | --- | --- | --- |
| DC\_1A-3A\_n257A  DC\_1A-3A\_n257D  DC\_1A-3A\_n257E  DC\_1A-3A\_n257F | DC\_1A\_n257A  DC\_3A\_n257A | CA\_1A-3A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_1A-5A\_n257A | DC\_1A\_n257A  DC\_5A\_n257A | CA\_1A-5A | n257A |
| DC\_1A-7A\_n257A | DC\_1A\_n257A  DC\_7A\_n257A | CA\_1A-7A | n257A |
| DC\_1A-7A-7A\_n257A | DC\_1A\_n257A  DC\_7A-7A\_n257A | CA\_1A-7A-7A | n257A |
| DC\_1A-8A\_n257A | DC\_1A-257A  DC\_8A\_n257A | CA\_1A-8A | n257A |
| DC\_1A-18A\_n257A | DC\_1A-257A  DC\_18A\_n257A | CA\_1A-18A | n257A |
| DC\_1A-19A\_n257A  DC\_1A-19A\_n257D  DC\_1A-19A\_n257E  DC\_1A-19A\_n257F | DC\_1A-257A  DC\_19A\_n257A | CA\_1A-19A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_1A-21A\_n257A  DC\_1A-21A\_n257D  DC\_1A-21A\_n257E  DC\_1A-21A\_n257F | DC\_1A\_n257A  DC\_21A\_n257A | CA\_1A-21A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_1A-28A\_n257A  DC\_1A-28A\_n257D  DC\_1A-28A\_n257E  DC\_1A-28A\_n257F | DC\_1A\_n257A  DC\_28A\_n257A | CA\_1A-28A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_1A-41A\_n257A | DC\_1A\_n257A  DC\_41A\_n257A | CA\_1A-41A | n257A |
| DC\_1A-41C\_n257A | DC\_1A\_n257A  DC\_41C\_n257A | CA\_1A-41C | n257A |
| DC\_1A-42A\_n257A  DC\_1A-42A\_n257D  DC\_1A-42A\_n257E  DC\_1A-42A\_n257F | DC\_1A\_n257A  DC\_42A\_n257A | CA\_1A-42A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_1A-42C\_n257A | DC\_1A\_n257A  DC\_42A\_n257A | CA\_1A-42C | n257A |
| DC\_1A-42D\_n257A | DC\_1A\_n257A  DC\_42A\_n257A | CA\_1A-42C | n257A |
| DC\_1A-42E\_n257A | DC\_1A\_n257A  DC\_42A\_n257A | CA\_1A-42E | n257A |
| DC\_2A-13A\_n260A | DC\_2A\_n260A  DC\_13A\_n260A | CA\_2A-13A | n260A |
| DC\_2A-5A\_n257A | DC\_2A\_n257A  DC\_5A\_n257A | CA\_2A-5A | n257A |
| DC\_2A-5A\_n260A | DC\_2A\_n260A  DC\_5A\_n260A | CA\_2A-5A | n260A |
| DC\_2A-12A\_n260A | DC\_2A\_n260A  DC\_12A\_n260A | CA\_2A-12A | n260A |
| DC\_2A-13A\_n257A | DC\_2A\_n257A  DC\_13A\_n257A | CA\_2A-13A | n257A |
| DC\_2A-30A\_n260A | DC\_2A\_n260A  DC\_30A\_n260A | CA\_2A-30A | n260A |
| DC\_2A-66A\_n257A | DC\_2A\_n257A  DC\_66A\_n257A | CA\_2A-66A | n257A |
| DC\_2A-66A\_n260A | DC\_2A\_n260A  DC\_66A\_n260A | CA\_2A-66A | n260A |
| DC\_3A-5A\_n257A | DC\_3A\_n257A  DC\_5A\_n257A | CA\_3A-5A | n257A |
| DC\_3A-7A-7A\_n257A | DC\_3A\_n257A  DC\_7A\_n257A | CA\_3A-7A-7A | n257A |
| DC\_3A-7A\_n257A | DC\_3A\_n257A  DC\_7A\_n257A | CA\_3A-7A | n257A |
| DC\_3A-19A\_n257A  DC\_3A-19A\_n257D  DC\_3A-19A\_n257E  DC\_3A-19A\_n257F | DC\_3A\_n257A  DC\_19A\_n257A | CA\_3A-19A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_3A-21A\_n257A  DC\_3A-21A\_n257D  DC\_3A-21A\_n257E  DC\_3A-21A\_n257F | DC\_3A\_n257A  DC\_21A\_n257A | CA\_3A-21A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_3A-28A\_n257A  DC\_3A-28A\_n257D  DC\_3A-28A\_n257E  DC\_3A-28A\_n257F | DC\_3A\_n257A  DC\_28A\_n257A | CA\_3A-28A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_3A-41A\_n257A | DC\_3A\_n257A  DC\_41A\_n257A | CA\_3A-41A | n257A |
| DC\_3A-42A\_n257A  DC\_3A-42A\_n257D  DC\_3A-42A\_n257E  DC\_3A-42A\_n257F | DC\_3A\_n257A  DC\_42A\_n257A | CA\_3A-42A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_3A-42C\_n257A | DC\_3A\_n257A  DC\_42A\_n257A | CA\_3A-42C | n257A |
| DC\_3A-42D\_n257A | DC\_3A\_n257A  DC\_42A\_n257A | CA\_3A-42A | n257A |
| DC\_3A-42E\_n257A | DC\_3A\_n257A  DC\_42A\_n257A | CA\_3A-42E | n257A |
| DC\_5A-30A\_n260A | DC\_5A\_n260A  DC\_30A\_n260A | CA\_5A-30A | n260A |
| DC\_5A-66A\_n257A | DC\_5A\_n257A  DC\_66A\_n257A | CA\_5A-66A | n257A |
| DC\_5A-66A\_n260A | DC\_5A\_n260A  DC\_66A\_n260A | CA\_5A-66A | n260A |
| DC\_5A-7A-7A\_n257A | DC\_5A\_n257A  DC\_7A\_n257A | CA\_5A-7A-7A | n257A |
| DC\_5A-7A\_n257A | DC\_5A\_n257A  DC\_7A\_n257A | CA\_5A-7A | n257A |
| DC\_5A\_n78A-n257A | DC\_5A\_n78A  DC\_5A\_n257A | 5A | CA\_n78A-n257A |
| DC\_5B\_n260A | DC\_5B\_n260A | CA\_5B | n260A |
| DC\_7A-7A\_n257A | DC\_7A\_n257A | CA\_7A-7A | n257A |
| DC\_7A\_n78A-n257A | DC\_7A\_n78A  DC\_7A\_n257A | 7A | CA\_n78A-n257A |
| DC\_12A-30A\_n260A | DC\_12A\_n260A  DC\_30A\_n260A | CA\_12A-30A | n260A |
| DC\_12A-66A\_n260A | DC\_12A\_n260A  DC\_66A\_n260A | CA\_12A-66A | n260A |
| DC\_13A-66A\_n257A | DC\_13A\_n257A  DC\_66A\_n257A | CA\_13A-66A | n257A |
| DC\_13A-66A\_n260A | DC\_13A\_n260A  DC\_66A\_n260A | CA\_13A-66A | n260A |
| DC\_18A-28A-n257A | DC\_18A\_n257A  DC\_28A\_n257A | CA\_18A-28A | n257A |
| DC\_19A-42A\_n257A  DC\_19A-42A\_n257D  DC\_19A-42A\_n257E  DC\_19A-42A\_n257F | DC\_19A\_n257A  DC\_42A\_n257A | CA\_19A-42A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_19A-21A\_n257A  DC\_19A-21A\_n257D  DC\_19A-21A\_n257E  DC\_19A-21A\_n257F | DC\_19A\_n257A  DC\_21A\_n257A | CA\_19A-21A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_19A-42C\_n257A | DC\_19A\_n257A  DC\_42A\_n257A | CA\_19A-42C | n257 |
| DC\_21A-28A\_n257A  DC\_21A-28A\_n257D  DC\_21A-28A\_n257E  DC\_21A-28A\_n257F | DC\_21A\_n257A  DC\_28A\_n257A | CA\_21A-28A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_21A-42A\_n257A  DC\_21A-42A\_n257D  DC\_21A-42A\_n257E  DC\_21A-42A\_n257F | DC\_21A\_n257A  DC\_42A\_n257A | CA\_21A-42A | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| DC\_21A-42C\_n257A | DC\_21A\_n257A  DC\_42A\_n257A | CA\_21A-42C | n257A |
| DC\_21A\_n77A-n257A | DC\_21A\_n77A  DC\_21A\_n257A | 21A | CA\_n77A-n257A |
| DC\_21A\_n78A-n257A | DC\_21A\_n78A  DC\_21A\_n257A | 21A | CA\_n78A-n257A |
| DC\_21A\_n79A-n257A | DC\_21A\_n79A  DC\_21A\_n257A | 21A | CA\_n79A-n257A |
| DC\_28A-42C\_n257A | DC\_28A\_n257A  DC\_42A\_n257A | CA\_28A-42C | n257 |
| DC\_28A-42A\_n257A | DC\_28A\_n257A  DC\_42A\_n257A | CA\_28A-42A | n257 |
| DC\_30A-66A\_n260A | DC\_30A\_n260A  DC\_66A\_n260A | CA\_30A-66A | n260A |
| DC\_41A-42A\_n257A | DC\_41A\_n257A  DC\_42A\_n257A | CA\_41A-42A | n257A |
| DC\_41A-42C\_n257A | DC\_41A\_n257A  DC\_42C\_n257A | CA\_41A-42C | n257A |
| DC\_41C-42A\_n257A | DC\_41C\_n257A  DC\_42A\_n257A | CA\_41C-42A | n257A |
| DC\_41C-42C\_n257A | DC\_41A\_n257A  DC\_42A\_n257A | CA\_41C-42C | n257A |
| DC\_42C\_n257A  DC\_42C\_n257D  DC\_42C\_n257E  DC\_42C\_n257F | DC\_42C\_n257A | CA\_42C | n257A  CA\_n257D  CA\_n257E  CA\_n257F |
| NOTE 1: Uplink CA configurations are the configurations supported by the present release of specifications. | | | |

#### 5.5B.5.3 Inter-band EN-DC configurations (four bands)

Table 5.5B.5.3-1: Inter-band EN-DC configurations (four bands)

| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) | E-UTRA configuration | NR configuration |
| --- | --- | --- | --- |
| DC\_1A-3A-5A\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_5A\_n257A | CA\_1A-3A-5A | n257A |
| DC\_1A-3A-7A-7A\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_7A\_n257A | CA\_1A-3A-7A-7A | n257A |
| DC\_1A-3A-7A\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_7A\_n257A | CA\_1A-3A-7A | n257A |
| DC\_1A-3A-19A\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A | CA\_1A-3A-19A | n257A |
| DC\_1A-3A-21A\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_21A\_n257A | CA\_1A-3A-21A | n257A |
| DC\_1A-3A-28A\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_28A\_n257A | CA\_1A-3A-28A | n257A |
| DC\_1A-3A-42C\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_42A\_n257A | CA\_1A-3A-42C | n257A |
| DC\_1A-3A-42C\_n257D | DC\_1A\_n257A  DC\_3A\_n257A  DC\_42A\_n257A | CA\_1A-3A-42C | n257A |
| DC\_1A-3A-42C\_n257E | DC\_1A\_n257A  DC\_3A\_n257A  DC\_42A\_n257A | CA\_1A-3A-42C | n257A |
| DC\_1A-3A-42C\_n257F | DC\_1A\_n257A  DC\_3A\_n257A  DC\_42A\_n257A | CA\_1A-3A-42C | n257A |
| DC\_1A-3A\_n78A-n257A | DC\_1A\_n78A  DC\_1A\_n257A  DC\_3A\_n78A  DC\_3A\_n257A | CA\_1A-3A | CA\_n78A-n257A |
| DC\_1A-5A-7A-7A\_n257A | DC\_1A\_n257A  DC\_5A\_n257A  DC\_7A\_n257A | CA\_1A-5A-7A-7A | n257A |
| DC\_1A-5A-7A\_n257A | DC\_1A\_n257A  DC\_5A\_n257A  DC\_7A\_n257A | CA\_1A-5A-7A | n257A |
| DC\_1A-5A\_n78A-n257A | DC\_1A\_n78A  DC\_1A\_n257A,  DC\_5A\_n78A  DC\_5A\_n257A, | CA\_1A-5A | CA\_n78A-n257A |
| DC\_1A-7A-7A\_n78A-n257A | DC\_1A\_n78A  DC\_1A\_n257A,  DC\_7A\_n78A  DC\_7A\_n257A, | CA\_1A-7A-7A | CA\_n78A-n257A |
| DC\_1A-7A\_n78A-n257A | DC\_1A\_n78A  DC\_1A\_n257A,  DC\_7A\_n78A  DC\_7A\_n257A, | CA\_1A-7A | CA\_n78A-n257A |
| DC\_1A-18A-28A\_n257A | DC\_1A\_n257A  DC\_18A\_n257A  DC\_28A\_n257A | CA\_1A-18A-28A | n257A |
| DC\_1A-19A-42A\_n257A | DC\_1A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-19A-42A | n257A |
| DC\_1A-19A-42C\_n257A | DC\_1A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-19A-42C | n257A |
| DC\_1A-19A-42C\_n257D | DC\_1A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-19A-42A | n257A |
| DC\_1A-19A-42C\_n257E | DC\_1A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-19A-42A | n257A |
| DC\_1A-19A-42C\_n257F | DC\_1A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-19A-42A | n257A |
| DC\_1A-21A-28A\_n257A | DC\_1A\_n257A  DC\_21A\_n257A  DC\_28A\_n257A | CA\_1A-21A-28A | n257 |
| DC\_1A-21A-42A\_n257A | DC\_1A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_1A-21A-42A | n257A |
| DC\_1A-21A-42C\_n257A | DC\_1A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_1A-21A-42C | n257A |
| DC\_1A-21A-42C\_n257D | DC\_1A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_1A-21A-42C | n257A |
| DC\_1A-21A-42C\_n257E | DC\_1A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_1A-21A-42C | n257A |
| DC\_1A-21A-42C\_n257F | DC\_1A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_1A-21A-42C | n257A |
| DC\_1A-28A-42A\_n257A | DC\_1A\_n257A  DC\_28A\_n257A  DC\_42A\_n257A | CA\_1A-28A-42A | n257 |
| DC\_1A-28A-42C\_n257A | DC\_1A\_n257A  DC\_28A\_n257A  DC\_42A\_n257A | CA\_1A-28A-42A | n257 |
| DC\_1A-41A-42A\_n257A | DC\_1A\_n257A  DC\_41A\_n257A  DC\_42A\_n257A | CA\_1A-41A-42A | n257 |
| DC\_1A-41A-42C\_n257A | DC\_1A\_n257A  DC\_41A\_n257A  DC\_42A\_n257A | CA\_1A-41A-42C | n257A |
| DC\_1A-41C-42A\_n257A | DC\_1A\_n257A  DC\_41A\_n257A  DC\_42A\_n257A | CA\_1A-41C-42A | n257A |
| DC\_1A-41C-42C\_n257A | DC\_1A\_n257A  DC\_41A\_n257A  DC\_42A\_n257A | CA\_1A-41C-42C | n257A |
| DC\_3A-5A-7A-7A\_n257A | DC\_3A\_n257A  DC\_5A\_n257A  DC\_7A\_n257A | CA\_3A-5A-7A-7A | n257A |
| DC\_3A-5A-7A\_n257A | DC\_3A\_n257A  DC\_5A\_n257A  DC\_7A\_n257A | CA\_3A-5A-7A | n257A |
| DC\_3A-5A\_n78A-n257A | DC\_3A\_n78A  DC\_3A\_n257A,  DC\_5A\_n78A  DC\_5A\_n257A, | CA\_3A-5A | CA\_n78A-n257A |
| DC\_3A-7A-7A\_n78A-n257A | DC\_3A\_n78A  DC\_3A\_n257A  DC\_7A\_n78A  DC\_7A\_n257A | CA\_3A-7A-7A | CA\_n78A-n257A |
| DC\_3A-7A\_n78A-n257A | DC\_3A\_n78A  DC\_3A\_n257A,  DC\_7A\_n78A  DC\_7A\_n257A, | CA\_3A-7A | CA\_n78A-n257A |
| DC\_3A-19A-21A\_n257A | DC\_3A\_n257A  DC\_19A\_n257A  DC\_21A\_n257A | CA\_3A-19A-21A | n257A |
| DC\_3A-19A-42A\_n257A | DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_3A-19A-42A | n257A |
| DC\_3A-19A-42C\_n257A | DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_3A-19A-42C | n257A |
| DC\_3A-19A-42C\_n257D | DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_3A-19A-42C | n257A |
| DC\_3A-19A-42C\_n257E | DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_3A-19A-42C | n257A |
| DC\_3A-19A-42C\_n257F | DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_3A-19A-42C | n257A |
| DC\_3A-21A-42C\_n257A | DC\_3A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_3A-21A-42C | n257A |
| DC\_3A-21A-42C\_n257D | DC\_3A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_3A-21A-42C | n257A |
| DC\_3A-21A-42C\_n257E | DC\_3A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_3A-21A-42C | n257A |
| DC\_3A-21A-42C\_n257F | DC\_3A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_3A-21A-42C | n257A |
| DC\_3A-28A-42A\_n257A | DC\_3A\_n257A  DC\_28A\_n257A  DC\_42A\_n257A | CA\_3A-28A-42A | n257A |
| DC\_3A-28A-42C\_n257A | DC\_3A\_n257A  DC\_28A\_n257A  DC\_42A\_n257A | CA\_3A-28A-42A | n257A |
| DC\_5A-7A-7A\_n78A-n257A | DC\_5A\_n78A  DC\_5A\_n257A  DC\_7A\_n78A  DC\_7A\_n257A | CA\_5A-7A-7A | CA\_n78A-n257A |
| DC\_5A-7A\_n78A-n257A | DC\_5A\_n78A  DC\_5A\_n257A  DC\_7A\_n78A  DC\_7A\_n257A | CA\_5A-7A | CA\_n78A-n257A |
| DC\_19A-21A-42A\_n257A | DC\_19A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_19A-21A-42A | n257A |
| DC\_19A-21A-42C\_n257D | DC\_19A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_19A-21A-42C | n257A |
| DC\_19A-21A-42C\_n257E | DC\_19A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_19A-21A-42C | n257A |
| DC\_19A-21A-42C\_n257F | DC\_19A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_19A-21A-42C | n257A |
| DC\_19A-21A-42C\_n257A | DC\_19A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_19A-21A-42C | n257A |
| DC\_21A-28A-42A\_n257A | DC\_21A\_n257A  DC\_28A\_n257A  DC\_42A\_n257A | CA\_21A-28A-42A | n257A |
| DC\_21A-28A-42C\_n257A | DC\_21A\_n257A  DC\_28A\_n257A  DC\_42A\_n257A | CA\_21A-28A-42A | n257A |
| NOTE 1: Uplink CA configurations are the configurations supported by the present release of specifications. | | | |

#### 5.5B.5.4 Inter-band EN-DC configurations (five bands)

Table 5.5B.5.4-1: Inter-band EN-DC configurations (five bands)

| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) | E-UTRA configuration | NR configuration |
| --- | --- | --- | --- |
| DC\_1A-3A-5A-7A\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_5A\_n257A  DC\_7A\_n257A | CA\_1A-3A-5A-7A | n257A |
| DC\_1A-3A-5A-7A-7A\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_5A\_n257A  DC\_7A\_n257A | CA\_1A-3A-5A-7A-7A | n257A |
| DC\_1A-3A-5A\_n78A-n257A | DC\_1A\_n78A  DC\_1A\_n257A,  DC\_3A\_n78A  DC\_3A\_n257A,  DC\_5A\_n78A  DC\_5A\_n257A, | CA\_1A-3A-5A | CA\_n78A-n257A |
| DC\_1A-3A-7A-7A\_n78A-n257A | DC\_1A\_n78A  DC\_1A\_n257A,  DC\_3A\_n78A  DC\_3A\_n257A,  DC\_7A\_n78A  DC\_7A\_n257A, | CA\_1A-3A-7A-7A | CA\_n78A-n257A |
| DC\_1A-3A-7A\_n78A-n257A | DC\_1A\_n78A  DC\_1A\_n257A,  DC\_3A\_n78A  DC\_3A\_n257A,  DC\_7A\_n78A  DC\_7A\_n257A, | CA\_1A-3A-7A | CA\_n78A-n257A |
| DC\_1A-3A-19A-21A\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_21A\_n257A | CA\_1A-3A-19A-21A | n257A |
| DC\_1A-3A-19A-21A\_n257D | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_21A\_n257A | CA\_1A-3A-19A-21A | n257A |
| DC\_1A-3A-19A-21A\_n257E | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_21A\_n257A | CA\_1A-3A-19A-21A | n257A |
| DC\_1A-3A-19A-21A\_n257F | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_21A\_n257A | CA\_1A-3A-19A-21A | n257A |
| DC\_1A-3A-19A-42A\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-3A-19A-42A | n257A |
| DC\_1A-3A-19A-42A\_n257D | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-3A-19A-42A | n257A |
| DC\_1A-3A-19A-42A\_n257E | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-3A-19A-42A | n257A |
| DC\_1A-3A-19A-42A\_n257F | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-3A-19A-42A | n257A |
| DC\_1A-3A-19A-42C\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-3A-19A-42C | n257A |
| DC\_1A-3A-19A-42C\_n257D | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-3A-19A-42C | n257D |
| DC\_1A-3A-19A-42C\_n257E | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-3A-19A-42C | n257E |
| DC\_1A-3A-19A-42C\_n257F | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-3A-19A-42C | n257F |
| DC\_1A-3A-21A-42C\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-3A-21A-42C | n257A |
| DC\_1A-3A-21A-42C\_n257D | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-3A-21A-42C | n257D |
| DC\_1A-3A-21A-42C\_n257E | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-3A-21A-42C | n257E |
| DC\_1A-3A-21A-42C\_n257F | DC\_1A\_n257A  DC\_3A\_n257A  DC\_19A\_n257A  DC\_42A\_n257A | CA\_1A-3A-21A-42C | n257F |
| DC\_1A-3A-28A-42A\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_28A\_n257A  DC\_42A\_n257A | CA\_1A-3A-21A-42A | n257A |
| DC\_1A-3A-28A-42C\_n257A | DC\_1A\_n257A  DC\_3A\_n257A  DC\_28A\_n257A  DC\_42A\_n257A | CA\_1A-3A-28A-42C | n257A |
| DC\_1A-5A-7A-7A\_n78A-n257A | DC\_1A\_n78A  DC\_1A\_n257A,  DC\_5A\_n78A  DC\_5A\_n257A,  DC\_7A\_n78A  DC\_7A\_n257A, | CA\_1A-5A-7A-7A | CA\_n78A-n257A |
| DC\_1A-5A-7A\_n78A-n257A | DC\_1A\_n78A  DC\_1A\_n257A,  DC\_5A\_n78A  DC\_5A\_n257A,  DC\_7A\_n78A  DC\_7A\_n257A, | CA\_1A-5A-7A | CA\_n78A-n257A |
| DC\_1A-19A-21A-42A\_n257A | DC\_1A\_n257A  DC\_19A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_1A-19A-21A-42A | n257A |
| DC\_1A-19A-21A-42A\_n257D | DC\_1A\_n257A  DC\_19A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_1A-19A-21A-42A | n257A |
| DC\_1A-19A-21A-42A\_n257E | DC\_1A\_n257A  DC\_19A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_1A-19A-21A-42A | n257A |
| DC\_1A-19A-21A-42A\_n257F | DC\_1A\_n257A  DC\_19A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_1A-19A-21A-42A | n257A |
| DC\_1A-19A-21A-42C\_n257A | DC\_1A\_n257A  DC\_19A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_1A-19A-21A-42C | n257A |
| DC\_1A-19A-21A-42C\_n257D | DC\_1A\_n257A  DC\_19A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_1A-19A-21A-42C | n257D |
| DC\_1A-19A-21A-42C\_n257E | DC\_1A\_n257A  DC\_19A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_1A-19A-21A-42C | n257E |
| DC\_1A-19A-21A-42C\_n257F | DC\_1A\_n257A  DC\_19A\_n257A  DC\_21A\_n257A  DC\_42A\_n257A | CA\_1A-19A-21A-42C | n257F |
| DC\_1A-19A-28A-42C\_n257A | DC\_1A\_n257A  DC\_19A\_n257A  DC\_28A\_n257A  DC\_42A\_n257A | CA\_1A-19A-28A-42C | n257A |
| DC\_1A-21A-28A-42A\_n257A | DC\_1A\_n257A  DC\_21A\_n257A  DC\_28A\_n257A  DC\_42A\_n257A | CA\_1A-21A-28A-42A | n257A |
| DC\_3A-5A-7A-7A\_n78A-n257A | DC\_3A\_n78A  DC\_3A\_n257A,  DC\_5A\_n78A  DC\_5A\_n257A,  DC\_7A\_n78A  DC\_7A\_n257A, | CA\_3A-5A-7A-7A | CA\_n78A-n257A |
| DC\_3A-5A-7A\_n78A-n257A | DC\_3A\_n78A  DC\_3A\_n257A,  DC\_5A\_n78A  DC\_5A\_n257A,  DC\_7A\_n78A  DC\_7A\_n257A, | CA\_3A-5A-7A | CA\_n78A-n257A |
| NOTE 1: Uplink CA configurations are the configurations supported by the present release of specifications. | | | |

#### 5.5B.5.5 Inter-band EN-DC configurations (six bands)

Table 5.5B.5.5-1: Inter-band EN-DC configurations (six bands)

|  |  |  |  |
| --- | --- | --- | --- |
| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) | E-UTRA configuration | NR configuration |
| DC\_1A-3A-5A-7A\_n78A-n257A | DC\_1A\_n78A  DC\_1A\_n257A,  DC\_3A\_n78A  DC\_3A\_n257A,  DC\_5A\_n78A  DC\_5A\_n257A,  DC\_7A\_n78A  DC\_7A\_n257A, | CA\_1A-3A-5A-7A | CA\_n78A-n257A |
| NOTE 1: Uplink CA configurations are the configurations supported by the present release of specifications. | | | |

### 5.5B.6 Inter-band EN-DC including FR1 and FR2

Supported channel bandwidths for E-UTRA operating bands and CA configurations are defined in TS 36.101 and for NR operating bands and CA configurations in TS 38.101-1, TS 38.101-2 and TS 38.101-3.

#### 5.5B.6.1 Inter-band EN-DC configurations (two bands)

This section is N/A.

#### 5.5B.6.2 Inter-band EN-DC configurations (three bands)

Table 5.5B.6.2-1: Inter-band EN-DC configurations (three bands)

| **EN-DC**  **configuration** | **Uplink EN-DC**  **configuration**  **(NOTE 1)** | **E-UTRA configuration** | **NR configuration** |
| --- | --- | --- | --- |
| DC\_1A\_n77A-n257A | DC\_1A\_n77A  DC\_1A\_n257A  DC\_1A\_n77A-n257A | 1A | CA\_n77A-n257A |
| DC\_1A\_n77A-n257D | DC\_1A\_n77A  DC\_1A-n257A  DC\_1A\_n77A-n257A | 1A | CA\_n77A-n257D |
| DC\_1A\_n77A-n257E | DC\_1A\_n77A  DC\_1A\_n257A  DC\_1A\_n77A-n257A | 1A | CA\_n77A-n257E |
| DC\_1A\_n77A-n257F | DC\_1A\_n77A  DC\_1A\_n257A  DC\_1A\_n77A-n257A | 1A | CA\_n77A-n257F |
| DC\_1A\_n77C-n257A | DC\_1A\_n77A  DC\_1A\_n257A  DC\_1A\_n77A-n257A | 1A | CA\_n77C-n257A |
| DC\_1A\_n77C-n257D | DC\_1A\_n77A  DC\_1A\_n257A  DC\_1A\_n77A-n257A | 1A | CA\_n77C-n257D |
| DC\_1A\_n77C-n257E | DC\_1A\_n77A  DC\_1A\_n257A  DC\_1A\_n77A-n257A | 1A | CA\_n77C-n257E |
| DC\_1A\_n77C-n257F | DC\_1A\_n77A  DC\_1A\_n257A  DC\_1A\_n77A-n257A | 1A | CA\_n77C-n257F |
| DC\_1A\_n78A-n257A | DC\_1A\_n78A  DC\_1A\_n257A  DC\_1A\_n78A-n257A | 1A | CA\_n78A-n257A |
| DC\_1A\_n78A-n257D | DC\_1A\_n78A  DC\_1A-n257A  DC\_1A\_n78A-n257A | 1A | CA\_n78A-n257D |
| DC\_1A\_n78A-n257E | DC\_1A\_n78A  DC\_1A\_n257A  DC\_1A\_n78A-n257A | 1A | CA\_n78A-n257E |
| DC\_1A\_n78A-n257F | DC\_1A\_n78A  DC\_1A\_n257A  DC\_1A\_n78A-n257A | 1A | CA\_n78A-n257F |
| DC\_1A\_n78C-n257A | DC\_1A\_n78A  DC\_1A\_n257A  DC\_1A\_n78A-n257A | 1A | CA\_n78C-n257A |
| DC\_1A\_n78C-n257D | DC\_1A\_n78A  DC\_1A\_n257A  DC\_1A\_n78A-n257A | 1A | CA\_n78C-n257D |
| DC\_1A\_n78C-n257E | DC\_1A\_n78A  DC\_1A\_n257A  DC\_1A\_n78A-n257A | 1A | CA\_n78C-n257E |
| DC\_1A\_n78C-n257F | DC\_1A\_n78A  DC\_1A\_n257A  DC\_1A\_n78A-n257A | 1A | CA\_n78C-n257F |
| DC\_1A\_n79A-n257A | DC\_1A\_n79A  DC\_1A\_n257A  DC\_1A\_n79A-n257A | 1A |  |
| DC\_1A\_n79A-n257D | DC\_1A\_n79A  DC\_1A-n257A  DC\_1A\_n79A-n257A | 1A |  |
| DC\_1A\_n79A-n257E | DC\_1A\_n79A  DC\_1A\_n257A  DC\_1A\_n79A-n257A | 1A |  |
| DC\_1A\_n79A-n257F | DC\_1A\_n79A  DC\_1A\_n257A  DC\_1A\_n79A-n257A | 1A |  |
| DC\_1A\_n79C-n257A | DC\_1A\_n79A  DC\_1A\_n257A  DC\_1A\_n79A-n257A | 1A |  |
| DC\_1A\_n79C-n257D | DC\_1A\_n79A  DC\_1A\_n257A  DC\_1A\_n79A-n257A | 1A |  |
| DC\_1A\_n79C-n257E | DC\_1A\_n79A  DC\_1A\_n257A  DC\_1A\_n79A-n257A | 1A |  |
| DC\_1A\_n79C-n257F | DC\_1A\_n79A  DC\_1A\_n257A  DC\_1A\_n79A-n257A | 1A |  |
| DC\_3A\_n77A-n257A | DC\_3A\_n77A  DC\_3A\_n257A  DC\_3A\_n77A-n257A | 3A | CA\_n77A-n257A |
| DC\_3A\_n77A-n257D | DC\_3A\_n77A  DC\_3A\_n257A  DC\_3A\_n77A-n257A | 3A | CA\_n77A-n257D |
| DC\_3A\_n77A-n257E | DC\_3A\_n77A  DC\_3A\_n257A  DC\_3A\_n77A-n257A | 3A | CA\_n77A-n257E |
| DC\_3A\_n77A-n257F | DC\_3A\_n77A  DC\_3A\_n257A  DC\_3A\_n77A-n257A | 3A | CA\_n77A-n257F |
| DC\_3A\_n77C-n257A | DC\_3A\_n77A  DC\_3A\_n257A  DC\_3A\_n77A-n257A | 3A | CA\_n77C-n257A |
| DC\_3A\_n77C-n257D | DC\_3A\_n77A  DC\_3A\_n257A  DC\_3A\_n77A-n257A | 3A | CA\_n77C-n257D |
| DC\_3A\_n77C-n257E | DC\_3A\_n77A  DC\_3A\_n257A  DC\_3A\_n77A-n257A | 3A | CA\_n77C-n257E |
| DC\_3A\_n77C-n257F | DC\_3A\_n77A  DC\_3A\_n257A  DC\_3A\_n77A-n257A | 3A | CA\_n77C-n257F |
| DC\_3A\_n78A-n257A | DC\_3A\_n78A  DC\_3A\_n257A  DC\_3A\_n78A-n257A | 3A | CA\_n78A-n257A |
| DC\_3A\_n78A-n257D | DC\_3A\_n78A  DC\_3A\_n257A  DC\_3A\_n78A-n257A | 3A | CA\_n78A-n257D |
| DC\_3A\_n78A-n257E | DC\_3A\_n78A  DC\_3A\_n257A  DC\_3A\_n78A-n257A | 3A | CA\_n78A-n257E |
| DC\_3A\_n78A-n257F | DC\_3A\_n78A  DC\_3A\_n257A  DC\_3A\_n78A-n257A | 3A | CA\_n78A-n257F |
| DC\_3A\_n78C-n257A | DC\_3A\_n78A  DC\_3A\_n257A  DC\_3A\_n78A-n257A | 3A | CA\_n78C-n257A |
| DC\_3A\_n78C-n257D | DC\_3A\_n78A  DC\_3A\_n257A  DC\_3A\_n78A-n257A | 3A | CA\_n78C-n257D |
| DC\_3A\_n78C-n257E | DC\_3A\_n78A  DC\_3A\_n257A  DC\_3A\_n78A-n257A | 3A | CA\_n78C-n257E |
| DC\_3A\_n78C-n257F | DC\_3A\_n78A  DC\_3A\_n257A  DC\_3A\_n78A-n257A | 3A | CA\_n78C-n257F |
| DC\_3A\_n79A-n257A | DC\_3A\_n79A  DC\_3A\_n257A  DC\_3A\_n79A-n257A | 3A | CA\_n79A-n257A |
| DC\_3A\_n79A-n257D | DC\_3A\_n79A  DC\_3A\_n257A  DC\_3A\_n79A-n257A | 3A | CA\_n79A-n257D |
| DC\_3A\_n79A-n257E | DC\_3A\_n79A  DC\_3A\_n257A  DC\_3A\_n79A-n257A | 3A | CA\_n79A-n257E |
| DC\_3A\_n79A-n257F | DC\_3A\_n79A  DC\_3A\_n257A  DC\_3A\_n79A-n257A | 3A | CA\_n79A-n257F |
| DC\_3A\_n79C-n257A | DC\_3A\_n79A  DC\_3A\_n257A  DC\_3A\_n79A-n257A | 3A | CA\_n79C-n257A |
| DC\_3A\_n79C-n257D | DC\_3A\_n79A  DC\_3A\_n257A  DC\_3A\_n79A-n257A | 3A | CA\_n79C-n257D |
| DC\_3A\_n79C-n257E | DC\_3A\_n79A  DC\_3A\_n257A  DC\_3A\_n79A-n257A | 3A | CA\_n79C-n257E |
| DC\_3A\_n79C-n257F | DC\_3A\_n79A  DC\_3A\_n257A  DC\_3A\_n79A-n257A | 3A | CA\_n79C-n257F |
| DC\_7A-7A\_n78-n257A | DC\_7A\_n78A  DC\_7A\_n257A  DC\_7A\_n78A-n257A | CA\_7A-7A | CA\_n78A-n257A |
| DC\_19A\_n77A-n257A | DC\_19A\_n77A  DC\_19A\_n257A  DC\_19A\_n77A-n257A | 19A | CA\_n77A-n257A |
| DC\_19A\_n77A-n257D | DC\_19A\_n77A  DC\_19A\_n257A  DC\_19A\_n77A-n257A | 19A | CA\_n77A-n257D |
| DC\_19A\_n77A-n257E | DC\_19A\_n77A  DC\_19A\_n257A  DC\_19A\_n77A-n257A | 19A | CA\_n77A-n257E |
| DC\_19A\_n77A-n257F | DC\_19A\_n77A  DC\_19A\_n257A  DC\_19A\_n77A-n257A | 19A | CA\_n77A-n257F |
| DC\_19A\_n77C-n257A | DC\_19A\_n77A  DC\_19A\_n257A  DC\_19A\_n77A-n257A | 19A | CA\_n77C-n257A |
| DC\_19A\_n77C-n257D | DC\_19A\_n77A  DC\_19A\_n257A  DC\_19A\_n77A-n257A | 19A | CA\_n77C-n257D |
| DC\_19A\_n77C-n257E | DC\_19A\_n77A  DC\_19A\_n257A  DC\_19A\_n77A-n257A | 19A | CA\_n77C-n257E |
| DC\_19A\_n77C-n257F | DC\_19A\_n77A  DC\_19A\_n257A  DC\_19A\_n77A-n257A | 19A | CA\_n77C-n257F |
| DC\_19A\_n78A-n257A | DC\_19A\_n78A  DC\_19A\_n257A  DC\_19A\_n78A-n257A | 19A |  |
| DC\_19A\_n78A-n257D | DC\_19A\_n78A  DC\_19A\_n257A  DC\_19A\_n78A-n257A | 19A |  |
| DC\_19A\_n78A-n257E | DC\_19A\_n78A  DC\_19A\_n257A  DC\_19A\_n78A-n257A | 19A |  |
| DC\_19A\_n78A-n257F | DC\_19A\_n78A  DC\_19A\_n257A  DC\_19A\_n78A-n257A | 19A |  |
| DC\_19A\_n78C-n257A | DC\_19A\_n78A  DC\_19A\_n257A  DC\_19A\_n78A-n257A | 19A |  |
| DC\_19A\_n78C-n257D | DC\_19A\_n78A  DC\_19A\_n257A  DC\_19A\_n78A-n257A | 19A |  |
| DC\_19A\_n78C-n257E | DC\_19A\_n78A  DC\_19A\_n257A  DC\_19A\_n78A-n257A | 19A |  |
| DC\_19A\_n78C-n257F | DC\_19A\_n78A  DC\_19A\_n257A  DC\_19A\_n78A-n257A | 19A |  |
| DC\_19A\_n79A-n257A | DC\_19A\_n79A  DC\_19A\_n257A  DC\_19A\_n79A-n257A | 19A | CA\_n79A-n257A |
| DC\_19A\_n79A-n257D | DC\_19A\_n79A  DC\_19A\_n257A  DC\_19A\_n79A-n257A | 19A | CA\_n79A-n257D |
| DC\_19A\_n79A-n257E | DC\_19A\_n79A  DC\_19A\_n257A  DC\_19A\_n79A-n257A | 19A | CA\_n79A-n257E |
| DC\_19A\_n79A-n257F | DC\_19A\_n79A  DC\_19A\_n257A  DC\_19A\_n79A-n257A | 19A | CA\_n79A-n257F |
| DC\_19A\_n79C-n257A | DC\_19A\_n79A  DC\_19A\_n257A  DC\_19A\_n79A-n257A | 19A | CA\_n79C-n257A |
| DC\_19A\_n79C-n257D | DC\_19A\_n79A  DC\_19A\_n257A  DC\_19A\_n79A-n257A | 19A | CA\_n79C-n257D |
| DC\_19A\_n79C-n257E | DC\_19A\_n79A  DC\_19A\_n257A  DC\_19A\_n79A-n257A | 19A | CA\_n79C-n257E |
| DC\_19A\_n79C-n257F | DC\_19A\_n79A  DC\_19A\_n257A  DC\_19A\_n79A-n257A | 19A | CA\_n79C-n257F |
| NOTE 1: Uplink CA configurations are the configurations supported by the present release of specifications. | | | |

# 6 Transmitter characteristics

## 6.1 General

Detailed structure of the subclause is TBD.

Unless otherwise stated the transmitter characteristics are specified at the antenna connector(s) of the UE for the bands operating on frequency range 1 and over the air of the UE for the bands operating on frequency range 2. The requirements for frequency range 1 and frequency range 2 can be verified separately. For the carrier in frequency range 1, requirements can be verified with NR FR2 link disabled. For the carrier in frequency range 2, requirements can be verified in OTA mode with LTE connecting to the network by OTA without calibration.

## 6.2 Transmitter power

## 6.2A Transmitter power for CA

### 6.2A.1 UE maximum output power for CA

#### 6.2A.1.1 Inter-band CA between FR1 and FR2

<Editor’s notes: errors to be updated.>

For inter-band NR CA in FR1, the UE Power Classes in Table 6.2A.1.1-1 define the maximum output power for any transmission bandwidth within the aggregated channel bandwidth. The maximum output power is measured as the sum of the maximum output power at each UE antenna connector. The period of measurement shall be at least one sub frame (1ms). UE maximum output power shall be measured over all component carriers from different bands. If each band has separate antenna connectors, maximum output power is measured as the sum of maximum output power at each UE antenna connector.

Table 6.2A.1.1-1: Maximum output power for inter-band NR CA

|  |  |  |  |
| --- | --- | --- | --- |
| CA configuration |  | Power class 3  (dBm) | Tolerance  (dB) |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

<Editor’s notes: chapter numbers to be updated.>

For inter-band NR CA in FR1 and FR2 combined, the UE shall meet each transmitter power requirement specified in clause 6.2.1 of TS 38.101-1 and clause 6.2.1 TS 38.101-2 independently.

### 6.2A.2 UE maximum output power reduction for CA

#### 6.2A.2.1 Inter-band CA between FR1 and FR2

### 6.2A.3 UE additional maximum output power reduction for CA

### 6.2A.4 Configured output power for CA

#### 6.2A.4.1 Configured output power level

<Editor’s note: The title of 6.2A.4.1 to be updated by later RAN4 decision>

#### 6.2A.4.2 ΔTIB,c for CA

##### 6.2A.4.2.1 ΔTIB,c for Inter-band CA between FR1 and FR2

ΔTIB,c for NR CA For the UE which supports inter-band NR CA configuration, ΔTIB,c in Tables below applies. Unless otherwise stated, ΔTIB,c is set to zero.

Table 6.2A.4.2-1: ΔTIB,c due to NR CA (two bands)

|  |  |  |
| --- | --- | --- |
| Inter-band EN-DC configuration | NR Band | ΔTIB,c (dB) |
|  |  |  |
|  |  |

## 6.2B Transmitter power for DC

### 6.2B.1 UE maximum output power for EN-DC

#### 6.2B.1.1 Intra-band contiguous EN-DC

< conducted requirements >

The following UE Power Classes define the total maximum output power for any transmission bandwidth(s) of the CG(s) configured.

The maximum output power is measured as the total maximum output power across the UE antenna connector(s). The period of measurement shall be at least one sub frame.

Table 6.2B.1.1-1: Maximum output power for EN-DC (continuous sub-blocks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DC configuration | Power class 2  (dBm) | Tolerance  (dB) | Power class 3  (dBm) | Tolerance  (dB) |
| DC\_(n)71B |  |  | 23 | +2/-3 |
| DC\_(n)41AA | 26 | +2/-21 | 23 | +2/-21 |
| NOTE 1: If all transmitted resource blocks over all component carriers are confined within FUL\_low and FUL\_low + 4 MHz or/and FUL\_high – 4 MHz and FUL\_high, the maximum output power requirement is relaxed by reducing the lower tolerance limit by 1.5 dB | | | | |

#### 6.2B.1.2 Intra-band non-contiguous EN-DC

Table 6.2B.1.2-1: Maximum output power for EN-DC (non-continuous sub-blocks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DC configuration | Power class 2  (dBm) | Tolerance  (dB) | Power class 3  (dBm) | Tolerance  (dB) |
| DC\_3A\_n3A(2) |  |  | 23 | +2/-3 |
| DC\_41A\_n41A | 26 | +2/-21 | 23 | +2/-21 |
| NOTE 1: If all transmitted resource blocks over all component carriers are confined within FUL\_low and FUL\_low + 4 MHz or/and FUL\_high – 4 MHz and FUL\_high, the maximum output power requirement is relaxed by reducing the lower tolerance limit by 1.5 dB  NOTE 2: Only single switched UL is supported in Rel.15 | | | | |

#### 6.2B.1.3 Inter-band EN-DC within FR1

< conducted requirements >

For inter-band EN-DC of LTE and NR in FR1, the following UE Power Classes define the maximum output power for any transmission bandwidth within the aggregated channel bandwidth. The maximum output power is measured as the sum of the maximum output power at each UE antenna connector. The period of measurement shall be at least one sub frame (1ms). UE maximum output power shall be measured over all component carriers from different bands. If each band has separate antenna connectors, maximum output power is measured as the sum of maximum output power at each UE antenna connector.

Table 6.2B.1.3-1: Maximum output power for inter-band EN-DC (two bands)

| DC configuration | Power class 3  (dBm) | Tolerance  (dB) |
| --- | --- | --- |
| DC\_1A\_n28A | 23 | +2/-3 |
| DC\_1A\_n40A | 23 | +2/-3 |
| DC\_1A\_n51A | 23 | +2/-3 |
| DC\_1A\_n77A | 23 | +2/-3 |
| DC\_1A\_n78A  DC\_1A\_n84A\_ULSUP-TDM\_n78A  DC\_1A\_n84A\_ULSUP-FDM\_n78A | 23 | +2/-3 |
| DC\_1A\_n79A | 23 | +2/-3 |
| DC\_2A\_n5A | 23 | +2/-3 |
| DC\_2A\_n66A | 23 | +2/-3 |
| DC\_2A\_n71A | 23 | +2/-3 |
| DC\_2A\_n78A | 23 | +2/-3 |
| DC\_3A\_n7A | 23 | +2/-3 |
| DC\_3A\_n28A | 23 | +2/-3 |
| DC\_3A\_n40A | 23 | +2/-3 |
| DC\_3A\_n51A | 23 | +2/-3 |
| DC\_3A\_n77A | 23 | +2/-3 |
| DC\_3A\_n78A  DC\_3A\_n80A\_ULSUP-TDM\_n78A,  DC\_3A\_n80A\_ULSUP-FDM\_n78A | 23 | +2/-3 |
| DC\_3A\_n79A  DC\_3A\_n80A\_ULSUP-TDM\_n79A,  DC\_3A\_n80A\_ULSUP-FDM\_n79A | 23 | +2/-3 |
| DC\_3A\_n82A | 23 | +2/-3 |
| DC\_5A\_n40A | 23 | +2/-3 |
| DC\_5A\_n66A | 23 | +2/-3 |
| DC\_5A\_n78A | 23 | +2/-3 |
| DC\_7A\_n28A | 23 | +2/-3 |
| DC\_7A\_n51A | 23 | +2/-3 |
| DC\_7A\_n78A | 23 | +2/-3 |
| DC\_8A\_n40A | 23 | +2/-3 |
| DC\_8A\_n77A | 23 | +2/-3 |
| DC\_8A\_n78A  DC\_8A\_n81A\_ULSUP-TDM\_n78A,  DC\_8A\_n81A\_ULSUP-FDM\_n78A | 23 | +2/-3 |
| DC\_8A\_n79A  DC\_8A\_n81A\_ULSUP-TDM\_n79A,  DC\_8A\_n81A\_ULSUP-FDM\_n79A | 23 | +2/-3 |
| DC\_11A\_n77A | 23 | +2/-3 |
| DC\_11A\_n78A | 23 | +2/-3 |
| DC\_11A\_n79A | 23 | +2/-3 |
| DC\_12A\_n5A | 23 | +2/-3 |
| DC\_12A\_n66A | 23 | +2/-3 |
| DC\_18A\_n77A | 23 | +2/-3 |
| DC\_18A\_n78A | 23 | +2/-3 |
| DC\_18A\_n79A | 23 | +2/-3 |
| DC\_19A\_n77A | 23 | +2/-3 |
| DC\_19A\_n78A | 23 | +2/-3 |
| DC\_19A\_n79A | 23 | +2/-3 |
| DC\_20A\_n8A | 23 | +2/-3 |
| DC\_20A\_n28A  DC\_20A\_n83A | 23 | +2/-3 |
| DC\_20A\_n51A | 23 | +2/-3 |
| DC\_20A\_n77A | 23 | +2/-3 |
| DC\_20A\_n78A  DC\_20A\_n82A\_ULSUP-TDM\_n78A,  DC\_20A\_n82A\_ULSUP-FDM\_n78A | 23 | +2/-3 |
| DC\_21A\_n77A | 23 | +2/-3 |
| DC\_21A\_n78A | 23 | +2/-3 |
| DC\_21A\_n79A | 23 | +2/-3 |
| DC\_25A\_n41A | 23 | +2/-3 |
| DC\_26A\_n41A | 23 | +2/-3 |
| DC\_26A\_n77A | 23 | +2/-3 |
| DC\_26A\_n78A | 23 | +2/-3 |
| DC\_26A\_n79A | 23 | +2/-3 |
| DC\_28A n51A | 23 | +2/-3 |
| DC\_28A\_n77A | 23 | +2/-3 |
| DC\_28A\_n78A  DC\_28A\_n83A\_ULSUP-TDM\_n78A,  DC\_28A\_n83A\_ULSUP-FDM\_n78A | 23 | +2/-3 |
| DC\_28A\_n79A | 23 | +2/-3 |
| DC\_30A\_n5A | 23 | +2/-3 |
| DC\_30A\_n66A | 23 | +2/-3 |
| DC\_38A\_n78A | N/A | N/A |
| DC\_39A\_n78A | 23 | +2/-3 |
| DC\_39A\_n79A | 23 | +2/-3 |
| DC\_40A\_n77A | N/A | N/A |
| DC\_41A\_n77A | 23 | +2/-3 |
| DC\_41A\_n78A | 23 | +2/-3 |
| DC\_41A\_n79A | 23 | +2/-3 |
| DC\_42A\_n51A | 23 | +2/-3 |
| DC\_42A\_n77A | N/A | N/A |
| DC\_42A\_n78A | N/A | N/A |
| DC\_42A\_n79A | N/A | N/A |
| DC\_66A\_n5A | 23 | +2/-3 |
| DC\_66A\_n71A | 23 | +2/-3 |
| DC\_66A\_n78A, DC\_66A\_n86A\_ULSUP-TDM\_n78A,  DC\_66A\_n86A\_ULSUP-FDM\_n78A | 23 | +2/-3 |

#### 6.2B.1.4 Inter-band EN-DC including FR2

< OTA requirements >

<Editor’s notes: chapter numbers to be updated.>

For inter-band EN-DC of LTE and NR in FR2, the UE shall meet each transmitter power requirement specified in clause 6.2.2 of TS 36.101 and clause 6.2.1 TS 38.101-2 independently.

#### 6.2B.1.5 Inter-band EN-DC including both FR1 and FR2

< OTA requirements >

<Editor’s notes: chapter numbers to be updated.>

For inter-band EN-DC of LTE and NR in both FR1 and FR2, the UE shall meet each transmitter power requirement for inter-band EN-DC of LTE and NR in FR1specified in clause 6.2B.1.3 of TS 38.101-3 and for NR in FR2 clause 6.2.1 of TS 38.101-2 independently.

### 6.2B.2 UE maximum output power reduction and EN-DC

#### 6.2B.2.1 Intra-band contiguous EN-DC

#### 6.2B.2.2 Intra-band non-contiguous EN-DC

#### 6.2B.2.3 Inter-band EN-DC within FR1

< conducted requirements >

#### 6.2B.2.4 Inter-band EN-DC including FR2

< OTA requirements >

#### 6.2B.2.5 Inter-band EN-DC including both FR1 and FR2

< OTA requirements >

### 6.2B.3 UE additional maximum output power reduction for EN-DC

#### 6.2B.3.1 Intra-band contiguous EN-DC

For EN-DC band combinations with additional requirements the A-MPR allowed are specified in Table 6.2B.3.1-1 for combinations of network signalling values indicated in E-UTRA and NR cell group(s). Unless otherwise stated the A-MPR allowed below is in addition to the MPR requirements specified in sub-clause 6.2B.2.

Table 6.2B.3.1-1: Allowed power reduction for EN-DC

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DC configuration | Requirement (sub-clause) | E-UTRA network signalling value | NR network signalling value | A-MPR  (subclause) |
| DC\_(n)71B | 6.5B.2.1.2.1 | NS\_35 | NS\_35 | 6.2B.3.1.1 |
| DC\_(n)41AA1 | 6.5B.2.1.2.2 | NS\_04 | NS\_04 | 6.2B.3.1.2 |
| NOTE 1: Only applies to UEs that support dual UL transmission for this EN-DC combination.  NOTE 2: The network signalling value for NR is mapped to configured FBI and *AdditionalSpecrumEmission* values as specified in [4]. | | | | |

##### 6.2B.3.1.1 A-MPR for DC\_(n)71B

For DC\_(n)71B with configured with network signaling values as per Table 6.2B.3.1.1-1 the allowed A-MPR is defined by

- for UE indicating support of dynamicPowerSharing in the *UE-MRDC-Capability* IE

where A-MPRDC is the total power reduction allowed (dB),

- for OFDM:

MA,DC = 10.00 - 11.67\*A; 0.00 < A ≤ 0.30

7.10 - 2.00\*A; 0.30 < A ≤ 0.80

5.50; 0.80 < A ≤ 1.00

- for DFT-S-OFDM:

MA,DC = 10.00 - 13.33\*A; 0.00 < A ≤ 0.30

7.00 - 3.33\*A; 0.30 < A ≤ 0.60

5.00; 0.60 < A ≤ 1.00

where

with LCRB and NRB the number of allocated PRB and transmission bandwidth for the respective CG,

- for UE not indicating support of dynamicPowerSharing

where A-MPR is the total power reduction allowed per CG with

where *ÑRB,NR* is the transmission bandwidth configuration of the SCG channel for SCS = 15 kHz.

##### 6.2B.3.1.2 A-MPR for NS\_04

When the UE is configured for B41/n41 intra-band contiguous EN-DC and it receives IE NS\_04, the UE determines the total allowed maximum output power reduction as specified in this subclause.

The UE determines the Channel Configuration Case and the value of A-MPRIM3 as follows:

If FIM3,low\_block,low < 2490.5 MHz

Channel Configuration Case B. A-MPRIM3 defined in Subclause 6.2B.3.1.2.1

Else

Channel Configuration Case A. A-MPRIM3 defined in Subclause 6.2B.3.1.2.2

where

- FIM3,low\_block,low = (2 \* Flow\_channel,low\_edge) – Fhigh\_channel,high\_edge

- Flow\_channel,low\_edge is the lowermost frequency of lower transmission bandwidth configuration.

- Fhigh\_channel,high\_edge is the uppermost frequency of upper transmission bandwidth configuration.

The UE determines the total allowed maximum output power reduction as follows:

For UEs not supporting dynamic power sharing, with backoff applied independently

A-MPRLTE = MAX( A-MPRsingle,LTE, A-MPRIM3 )

A-MPRNR = MAX( A-MPRsingle,NR, A-MPRIM3 )

For UEs supporting dynamic power sharing , with backoff applied equally to LTE and NR

A-MPR = MAX(A-MPRsingle,LTE, A-MPRsingle,NR, A-MPRIM3 )

where

- A-MPRsingle,LTE is the A-MPR defined for the LTE transmission in [4]

- A-MPRsingle,NR is the A-MPR defined for the NR transmission in [2]

6.2B.3.1.2.1 A-MPRIM3 for NS\_04 to meet -13 dBm / 1MHz

For the UE is configured with channel configurations Case A or Case C, the allowed maximum output power reduction for IM3s applied to transmission on the MCG and the SCG with non-contiguous resource allocation is defined as follows:

A-MPRIM3,-13 = MA

Where MA is defined as follows

MA = 14 ; 0 ≤ A < 0.5

9 ; 0.5 ≤ A < 1.0

7 ; 1.0 ≤ A < 2.0

5 ; 2.0 < A

Where:

For UEs supporting dynamic power sharing,

A = NRB\_alloc,LTE \* 12\* SCSLTE + NRB\_alloc,NR \* 12 \* SCSNR

For UEs not supporting dynamic power sharing,

For LTE

A = NRB\_alloc,LTE \* 12\* SCSLTE + 12 \* SCSNR

For NR

A = 12\* SCSLTE + NRB\_alloc,NR \* 12 \* SCSNR

6.2B.3.1.2.2 A-MPR for NS\_04 to meet -25 dBm / 1MHz

For the UE is configured with channel configurations Case B or Case D, the allowed maximum output power reduction for IM3s applied to transmission on the MCG and the SCG with non-contiguous resource allocation is defined as follows:

A-MPRIM3,-13 = MA

Where MA is defined as follows

MA = 14 ; 0 ≤ A < 1.0

13 ; 1.0 ≤ A < 2.0

12 ; 2.0 ≤ A < 5.0

11 ; 5.0 < A

Where:

For UEs supporting dynamic power sharing,

A = NRB\_alloc,LTE \* 12\* SCSLTE + NRB\_alloc,NR \* 12 \* SCSNR

For UEs not supporting dynamic power sharing,

For LTE

A = NRB\_alloc,LTE \* 12\* SCSLTE + 12 \* SCSNR

For NR

A = 12 \* SCSLTE + NRB\_alloc,NR \* 12 \* SCSNR

< any intermediate sub-clauses omitted >

#### 6.2B.3.2 Intra-band non-contiguous EN-DC

For intra-band EN-DC band combinations with additional requirements the A-MPR allowed are specified in Table 6.2B.3.1-1 for combinations of network signalling values indicated in E-UTRA and NR cell group(s). Unless otherwise stated the A-MPR allowed below is in addition to the MPR requirements specified in sub-clause 6.2B.2.

Table 6.2B.3.1-1: Allowed power reduction for EN-DC

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DC configuration | Requirement (sub-clause) | E-UTRA network signalling value | NR network signalling value | A-MPR (subclause) |
| DC\_41A\_n411 | 6.6.3.3.19 and 6.6.2.2.2 of [4] and 6.5.2.3.2 and 6.5.3.3.1 of [2] | NS\_04 | NS\_04 | 6.2B.3.2.2 |
| NOTE 1: Only applies to UEs that support dual UL transmission for this EN-DC combination. | | | | |

##### 6.2B.3.2.1 A-MPR for NS\_04

When the UE is configured for B41/n41 intra-band non-contiguous EN-DC and it receives IE NS\_04, the UE determines the total allowed maximum output power reduction as specified in this subclause.

The UE determines the Channel Configuration Case and the value of A-MPRIM3 as follows:

If AND( FIM3,low\_block,high < Ffilter,low , MAX( SEM-13,high, FIM3,high\_block,low ) > Ffilter,high )

Channel Configuration Case C. A-MPRIM3 defined in Subclause 6.2B.3.1.2.1

Else

Channel Configuration Case D. A-MPRIM3 defined in Subclause 6.2B.3.1.2.2

where

- FIM3,low\_block,high =(2 \* Flow\_channel,high\_edge ) – Fhigh\_channel,low\_edge

- FIM3,high\_block,low = (2 \* Fhigh\_channel,low\_edge) – Flow\_channel,high\_edge

- Flow\_channel,low\_edge is the lowermost frequency of lower transmission bandwidth configuration.

- Flow\_channel,high\_edge is the uppermost frequency of lower transmission bandwidth configuration.

- Fhigh\_channel,low\_edge is the lowermost frequency of upper transmission bandwidth configuration.

- Fhigh\_channel,high\_edge is the uppermost frequency of upper transmission bandwidth configuration.

- Ffilter,low = 2480 MHz

- Ffilter,high = 2750 MHz

- SEM-13,high = Threshold frequency where upper spectral emission mask for upper channel drops from -13 dBm / 1MHz to -25 dBm / 1MHz, as specified in Subclause 6.5B.2.1.2.2.

The UE determines the value of A-MPRACLRoverlap as follows:

If Wgap < BWchannel,LTE + BWchannel,NR

A-MPRACLRoverlap = 4 dB

Else

A-MPRACLRoverlap = 0 dB

where

- Wgap = Fhigh\_channel,low\_edge - Flow\_channel,high\_edge

The UE determines the total allowed maximum output power reduction as follows:

For UEs not supporting dynamic power sharing, with backoff applied independently

A-MPRLTE = MAX( A-MPRsingle,LTE, A-MPRIM3, A-MPRACLRoverlap )

A-MPRNR = MAX( A-MPRsingle,NR, A-MPRIM3, A-MPRACLRoverlap )

For UEs supporting dynamic power sharing , with backoff applied equally to LTE and NR

A-MPR = MAX(A-MPRsingle,LTE, A-MPRsingle,NR, A-MPRIM3, A-MPRACLRoverlap )

where

- A-MPRsingle,LTE is the A-MPR defined for the LTE transmission in [4].

- A-MPRsingle,NR is the A-MPR defined for the NR transmission in [2].

#### 6.2B.3.3 Inter-band EN-DC within FR1

#### 6.2B.3.4 Inter-band EN-DC including FR2

#### 6.2B.3.5 Inter-band EN-DC including both FR1 and FR2

### 6.2B.4 Configured output power for EN-DC

#### 6.2B.4.1 Configured output power level

<Editor’s note: The title of 6.2B.4.1 to be updated by later RAN4 decision>

##### 6.2B.4.1.1 Intra-band contiguous EN-DC

< equations for Pcmax >

##### 6.2B.4.1.2 Intra-band non-contiguous EN-DC

< equations for Pcmax >

##### 6.2B.4.1.3 Inter-band EN-DC within FR1

< equations for Pcmax >

##### 6.2B.4.1.4 Inter-band EN-DC including FR2

< equations for Pcmax >

##### 6.2B.4.1.5 Inter-band EN-DC including both FR1 and FR2

< equations for Pcmax >

#### 6.2B.4.2 ΔTIB,c for EN-DC

For the UE which supports inter-band EN-DC configuration, ΔTIB,c in Tables below applies where unless otherwise stated, the same ΔTIB,c is applicable to NR band(s) part for DC configurations which have the same NR operating band combination. Unless otherwise stated, ΔTIB,c is set to zero.

##### 6.2B.4.2.1 Intra-band contiguous EN-DC

##### 6.2B.4.2.2 Intra-band non-contiguous EN-DC

##### 6.2B.4.2.3 Inter-band EN-DC within FR1

###### 6.2B.4.2.3.1 ΔTIB,c for EN-DC two bands

Table 6.2B.4.2.3.1-1: ΔTIB,c due to EN-DC(two bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔTIB,c (dB) |
| --- | --- | --- |
| DC\_1\_n28 | 1 | 0.3 |
| n28 | 0.6 |
| DC\_1\_n40 | 1 | 0.5 |
| n40 | 0.5 |
| DC\_1\_n51 | 1 | 0.6 |
| n51 | 0.6 |
| DC\_1\_n77 | 1 | 0.6 |
| n77 | 0.8 |
| DC\_1\_n78 | 1 | 0.3 |
| n78 | 0.8 |
| DC\_2\_n5 | 2 | 0.3 |
| n5 | 0.3 |
| DC\_2\_n66 | 2 | 0.5 |
| n66 | 0.5 |
| DC\_2\_n71 | 2 | 0.3 |
| n71 | 0.3 |
| DC\_2A\_n78A | 2 | 0.6 |
| n78 | 0.8 |
| DC\_3\_n7 | 3 | 0.5 |
| n7 | 0.5 |
| DC\_3\_n28 | 3 | 0.3 |
| n28 | 0.3 |
| DC\_3\_n40 | 3 | 0.5 |
| n40 | 0.5 |
| DC\_3\_n51 | 3 | 0.3 |
| n51 | 0.3 |
| DC\_3\_n77 | 3 | 0.6 |
| n77 | 0.8 |
| DC\_3\_n78 | 3 | 0.6 |
| n78 | 0.8 |
| DC\_5A\_n40A | 5 | 0.3 |
| n40 | 0.3 |
| DC\_5A\_n66A | 5 | 0.3 |
| n66 | 0.3 |
| DC\_5\_n78 | 5 | 0.6 |
| n78 | 0.8 |
| DC\_7\_n28 | 7 | 0.3 |
| n28 | 0.3 |
| DC\_7\_n51 | 7 | 0.3 |
| n51 | 0.3 |
| DC\_7\_n78 | 7 | 0.5 |
| n78 | 0.8 |
| DC\_8\_n40 | 8 | 0.3 |
| n40 | 0.3 |
| DC\_8\_n77 | 8 | 0.6 |
| n77 | 0.8 |
| DC\_8\_n78 | 8 | 0.6 |
| n77 | 0.8 |
| DC\_11\_n77 | 11 | 0.4 |
| n77 | 0.8 |
| DC\_11\_n78 | 11 | 0.4 |
| n78 | 0.8 |
| DC\_12A\_n5A | 12 | 0.4 |
| n5 | 0.8 |
| DC\_12A\_n66A | 12 | 0.8 |
| n66 | 0.3 |
| DC\_18\_n77 | 18 | 0.3 |
| n77 | 0.8 |
| DC\_18\_n78 | 18 | 0.3 |
| n78 | 0.8 |
| DC\_19\_n77 | 19 | 0.3 |
| n77 | 0.8 |
| DC\_19\_n78 | 19 | 0.3 |
| n78 | 0.8 |
| DC\_20\_n8 | 20 | 0.4 |
| n8 | 0.4 |
| DC\_20\_n28 | 20 | 0.5 |
| n28 | 0.5 |
| DC\_20\_n51 | 20 | 0.5 |
| n51 | 0.5 |
| DC\_20\_n77 | 20 | 0.6 |
| n77 | 0.8 |
| DC\_20\_n78 | 20 | 0.6 |
| n78 | 0.8 |
| DC\_21\_n77 | 21 | 0.4 |
| n77 | 0.8 |
| DC\_21\_n78 | 21 | 0.4 |
| n78 | 0.8 |
| n77 | 0.8 |
| DC\_25\_n41 | 25 | 0.5 |
| n41 | 0.31 |
| 0.82 |
| DC\_26\_n41 | 26 | 0.3 |
| n41 | 0.3 |
| DC\_26A\_n77A | 26 | 0.3 |
| n77 | 0.8 |
| DC\_26\_n78 | 26 | 0.3 |
| n78 | 0.8 |
| DC\_28\_n51 | 28 | 0.5 |
| n51 | 0.5 |
| DC\_28\_n77 | 28 | 0.5 |
| n77 | 0.8 |
| DC\_28\_n78 | 28 | 0.5 |
| n78 | 0.8 |
| DC\_30A\_n5A | 30 | 0.3 |
| n5 | 0.3 |
| DC\_30A\_n66A | 30 | 0.5 |
| n66 | 0.8 |
| DC\_38\_n78 | n78 | 0.5 |
| DC\_39\_n78 | 39 | 0.3 |
| n78 | 0.8 |
| DC\_39\_n79 | 39 | 0.3 |
| n79 | 0.8 |
| DC\_40\_n77 | n77 | 0.5 |
| DC\_41\_n77 | 41 | 0.3 |
| n77 | 0.8 |
| DC\_41\_n78 | 41 | 0.3 |
| n78 | 0.8 |
| DC\_41\_n79 | 41 | 0.3 |
| n79 | 0.8 |
| DC\_42\_n51 | 42 | 0.6 |
| n51 | 0.8 |
| DC\_66\_n5 | 66 | 0.3 |
| n5 | 0.3 |
| DC\_66\_n71 | 66 | 0.3 |
| n71 | 0.3 |
| DC\_66\_n78 | 66 | 0.6 |
| n78 | 0.8 |
| NOTE 1: The requirement is applied for UE transmitting on the frequency range of 2545-2690MHz.  NOTE 2: The requirement is applied for UE transmitting on the frequency range of 2496-2545MHz. | | |

###### 6.2B.4.2.3.2 ΔTIB,c for EN-DC three bands

Table 6.2B.4.2.3.2-1: ΔTIB,c due to EN-DC (three bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔTIB,c (dB) |
| --- | --- | --- |
| DC\_1-3\_n28 | 1 | 0.3 |
| 3 | 0.3 |
| n28 | 0.6 |
| DC\_1-3\_n77 | 1 | 0.6 |
| 3 | 0.6 |
| n77 | 0.8 |
| DC\_1-3\_n78 | 1 | 0.6 |
| 3 | 0.6 |
| n78 | 0.8 |
| DC\_1-3\_n79 | 1 | 0.3 |
| 3 | 0.3 |
| DC\_1-5\_n78 | 1 | 0.3 |
| 5 | 0.6 |
| n78 | 0.8 |
| DC\_1-7\_n28 | 1 | 0.5 |
| 7 | 0.6 |
| n28 | 0.6 |
| DC\_1-7\_n78 | 1 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_1-7-7\_n78 | 1 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_1-8\_n78 | 1 | 0.3 |
| 8 | 0.6 |
| n78 | 0.8 |
| DC\_1-1A\_n77 | 1 | 0.3 |
| 18 | 0.3 |
| n77 | 0.8 |
| DC\_1-18\_n78 | 1 | 0.3 |
| 18 | 0.3 |
| n78 | 0.8 |
| DC\_1-19\_n77 | 1 | 0.3 |
| 19 | 0.3 |
| n77 | 0.8 |
| DC\_1-19\_n78 | 1 | 0.3 |
| 19 | 0.3 |
| n78 | 0.8 |
| DC\_1-19\_n79 | 1 | 0.3 |
| 19 | 0.3 |
| DC\_1-20\_n28 | 1 | 0.3 |
| 20 | 0.6 |
| N28 | 0.6 |
| DC\_1-20\_n78 | 1 | 0.3 |
| 20 | 0.3 |
| n78 | 0.8 |
| DC\_1-21\_n77 | 1 | 0.3 |
| 21 | 0.3 |
| n77 | 0.8 |
| DC\_1-21\_n78 | 1 | 0.6 |
| 21 | 0.4 |
| n78 | 0.8 |
| DC\_1-21\_n79 | 1 | 0.3 |
| 21 | 0.3 |
| DC\_1-41\_n77 | 1 | 0.5 |
| 41 | 0.5 |
| n77 | 0.8 |
| DC\_1-41\_n78 | 1 | 0.5 |
| 41 | 0.5 |
| n78 | 0.8 |
| DC\_1-41\_n79 | 1 | 0.5 |
| 41 | 0.5 |
| DC\_1-28\_n77 | 1 | 0.3 |
| 28 | 0.6 |
| n77 | 0.8 |
| DC\_1-28\_n78 | 1 | 0.3 |
| 28 | 0.6 |
| n78 | 0.8 |
| DC\_1\_n28-n78 | 1 | 0.3 |
| n28 | 0.6 |
| n78 | 0.8 |
| DC\_1\_n28-n79 | 1 | 0.3 |
| 28 | 0.3 |
| DC\_1-42\_n77 | 1 | 0.6 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_1-42\_n78 | 1 | 0.3 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_1-42\_n79 | 1 | 0.3 |
| 42 | 0.8 |
| DC\_1\_SUL\_n78-n84 | 1 | 0.3 |
| n78 | 0.8 |
| n84 | 0.3 |
| DC\_1\_n77-n79 | 1 | 0.6 |
| n77 | 0.8 |
| n79 | 0 |
| DC\_1\_n78-n79 | 1 | 0.3 |
| n78 | 0.8 |
| n79 | 0.5 |
| DC\_2-(n)71B | 2 | 0.3 |
| 71 | 0.3 |
| n71 |
| DC\_2-5\_n66 | 2 | 0.5 |
| 5 | 0.3 |
| n66 | 0.5 |
| DC\_2-30\_n66 | 2 | 0.5 |
| 30 | 0.3 |
| n66 | 0.5 |
| DC\_2-66\_n71 | 2 | 0.5 |
| 66 | 0.5 |
| n71 | 0.3 |
| DC\_3\_n3-n77 | 3 | 0.6 |
| n3 | 0.6 |
| n77 | 0.8 |
| DC\_3\_n3-n78 | 3 | 0.6 |
| n3 | 0.6 |
| n78 | 0.8 |
| DC\_3-5\_n78 | 3 | 0.6 |
| 5 | 0.6 |
| n78 | 0.8 |
| DC\_3-7\_n28 | 3 | 0.5 |
| 7 | 0.5 |
| n28 | 0.3 |
| DC\_3-7\_n78, DC\_3-7-7\_n78 | 3 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_3-8\_n78 | 3 | 0.6 |
| 8 | 0.6 |
| n78 | 0.8 |
| DC\_3-19\_n77 | 3 | 0.6 |
| 19 | 0.3 |
| n77 | 0.8 |
| DC\_3-19\_n78 | 3 | 0.6 |
| 19 | 0.3 |
| n78 | 0.8 |
| DC\_3-19\_n79 | 3 | 0.3 |
| 19 | 0.3 |
| DC\_3-20\_n28 | 3 | 0.3 |
| 20 | 0.5 |
| n28 | 0.5 |
| DC\_3-20\_n78 | 3 | 0.5 |
| 20 | 0.3 |
| n78 | 0.8 |
| DC\_3-21\_n77 | 3 | 0.8 |
| 21 | 0.9 |
| n77 | 0.8 |
| DC\_3-21\_n78 | 3 | 0.8 |
| 21 | 0.9 |
| n78 | 0.8 |
| DC\_3-21\_n79 | 3 | 0.8 |
| 21 | 0.9 |
| DC\_3-28\_n78 | 3 | 0.5 |
| 28 | 0.3 |
| n78 | 0.8 |
| DC\_3A\_n28-n78 | 3 | 0.5 |
| n28 | 0.3 |
| n78 | 0.8 |
| DC\_3-38\_n78 | 3 | 0.6 |
| n78 | 0.8 |
| DC\_3-41\_n78 | 3 | 0.6 |
| 41 | 0.31 |
| 0.82 |
| n78 | 0.8 |
| DC\_3-42\_n77 | 3 | 0.6 |
| 42 | 0.8 |
| n787 | 0.8 |
| DC\_3-42\_n78 | 3 | 0.6 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_3-42\_n79 | 3 | 0.6 |
| 42 | 0.8 |
| DC\_3\_n77-n79 | 3 | 0.6 |
| n77 | 0.8 |
| n79 | 0 |
| DC\_3\_n78-n79 | 3 | 0.6 |
| n78 | 0.8 |
| n79 | 0.5 |
| DC\_3\_SUL\_n78-n80 | 3 | 0.6 |
| n78 | 0.8 |
| n80 | 0.6 |
| DC\_3A\_SUL\_n78A-n82A | 3 | 0.5 |
| n78 | 0.8 |
| n82 | 0.3 |
| DC\_5-7\_n78, DC\_5-7-7\_n78 | 5 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_5\_30\_n66 | 5 | 0.3 |
| 30 | 0.3 |
| n66 | 0.5 |
| DC\_7-7\_n78 | 7 | 0.5 |
| n78 | 0.8 |
| DC\_7-20\_n28 | 7 | 0.3 |
| 20 | 0.6 |
| n28 | 0.6 |
| DC\_7-20\_n78 | 7 | 0.3 |
| 20 | 0.3 |
| n78 | 0.8 |
| DC\_7-28\_n78 | 7 | 0.3 |
| 28 | 0.3 |
| n78 | 0.8 |
| DC\_7\_n28-n78 | 7 | 0.3 |
| n28 | 0.3 |
| n78 | 0.8 |
| DC\_7-46\_n78 | 7 | 0.5 |
| n78 | 0.8 |
| DC\_8\_SUL\_n78- n81 | 8 | 0.6 |
| n78 | 0.8 |
| n81 | 0.6 |
| DC\_18-28\_n77 | 18 | 0.5 |
| 28 | 0.5 |
| n77 | 0.8 |
| DC\_18-28\_n78 | 18 | 0.5 |
| 28 | 0.5 |
| n78 | 0.8 |
| DC\_18-28\_n79 | 18 | 0.5 |
| 28 | 0.5 |
| DC\_19-21\_n77 | 19 | 0.3 |
| 21 | 0.4 |
| n77 | 0.8 |
| DC\_19-21\_n78 | 19 | 0.3 |
| 21 | 0.4 |
| n78 | 0.8 |
| DC\_19-21\_n79 | 19 | 0.3 |
| 21 | 0.4 |
| DC\_19-42\_n77 | 19 | 0.3 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_19-42\_n78 | 19 | 0.3 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_19-42\_n79 | 19 | 0.3 |
| 42 | 0.8 |
| DC\_19\_n77-n79 | 19 | 0.3 |
| n77 | 0.8 |
| n79 | 0 |
| DC\_19\_n78-n79 | 19 | 0.3 |
| n78 | 0.8 |
| n79 | 0.5 |
| DC\_20\_n8-n75 | 20 | 0.4 |
| n8 | 0.4 |
| DC\_20\_n28-n75 | 20 | 0.5 |
| n28 | 0.7 |
| DC\_20\_n28-n78 | 20 | 0.6 |
| n28 | 0.6 |
| n78 | 0.8 |
| DC\_20\_n75-n78 | 20 | 0.5 |
| n78 | 0.8 |
| DC\_20\_n76-n78 | 20 | 0.5 |
| n78 | 0.8 |
| DC\_20A\_SUL\_n78A-n82A | 20 | 0.6 |
| n78 | 0.8 |
| n82 | 0.6 |
| DC\_20A\_SUL\_n78A-n83A | 20 | 0.8 |
| n78 | 0.8 |
| n83 | 0.8 |
| DC\_21-42\_n77 | 21 | 0.4 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_21-42\_n78 | 21 | 0.4 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_21-42\_n79 | 21 | 0.4 |
| 42 | 0.8 |
| DC\_21\_n77-n79 | 21 | 0.4 |
| n77 | 0.8 |
| n79 | 0 |
| DC\_21\_n78-n79 | 21 | 0.4 |
| n78 | 0.8 |
| n79 | 0.5 |
| DC\_28-42\_n77 | 28 | 0.5 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_28-42\_n78 | 28 | 0.5 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_28-42\_n79 | 28 | 0.5 |
| 42 | 0.8 |
| DC\_28\_SUL\_n78-n83 | 28 | 0.5 |
| n78 | 0.8 |
| n83 | 0.5 |
| DC\_41-42\_n77 | 41 | 0.5 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_41-42\_n78 | 41 | 0.5 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_41-42\_n79 | 41 | 0. |
| 42 | 0.8 |
| DC\_41\_n77 | 41 | 0.3 |
| n77 | 0.8 |
| DC\_41\_n78 | 41 | 0.3 |
| n78 | 0.8 |
| DC\_41\_n79 | 41 | 0.3 |
| n79 | 0.8 |
| DC\_66\_(n)71 | 66 | 0.3 |
| 71 | 0.3 |
| n71 | 0.3 |
| DC\_66\_SUL\_n78-n86 | 66 | 0.6 |
| n78 | 0.8 |
| n86 | 0.6 |
| NOTE 1: The requirement is applied for UE transmitting on the frequency range of 2545-2690MHz.  NOTE 2: The requirement is applied for UE transmitting on the frequency range of 2496-2545MHz. | | |

###### 6.2B.4.2.3.3 ΔTIB,c for EN-DC four bands

Table 6.2B.4.2.3.3-1: ΔTIB,c due to EN-DC(four bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔTIB,c (dB) |
| --- | --- | --- |
| DC\_1-3-5\_n78 | 1 | 0.6 |
| 3 | 0.6 |
| 5 | 0.3 |
| n78 | 0.8 |
| DC\_1-3-7\_n28 | 1 | 0.6 |
| 3 | 0.6 |
| 7 | 0.6 |
| n28 | 0.6 |
| DC\_1-3-7\_n78  DC\_1-3-7-7\_n78 | 1 | 0.7 |
| 3 | 0.7 |
| 7 | 0.7 |
| n78 | 0.8 |
| DC\_1-3-8\_n78 | 1 | 0.6 |
| 3 | 0.6 |
| 8 | 0.6 |
| n78 | 0.8 |
| DC\_1-3-28\_n77 | 1 | 0.6 |
| 3 | 0.6 |
| 28 | 0.6 |
| n77 | 0.8 |
| DC\_1-3-28\_n78 | 1 | 0.6 |
| 3 | 0.6 |
| 28 | 0.6 |
| n78 | 0.8 |
| DC\_1-3\_n28-n78 | 1 | 0.6 |
| 3 | 0.6 |
| n28 | 0.6 |
| n78 | 0.8 |
| DC\_1-3-28\_n79 | 1 | 0.6 |
| 3 | 0.6 |
| 28 | 0.6 |
| DC\_1-3-19\_n78 | 1 | 0.6 |
| 3 | 0.6 |
| 19 | 0.3 |
| n78 | 0.8 |
| DC\_1-3-19\_n79 | 1 | 0.3 |
| 3 | 0.3 |
| 19 | 0.3 |
| DC\_1-3-20\_n28 | 1 | 0.3 |
| 3 | 0.3 |
| 20 | 0.6 |
| n28 | 0.6 |
| DC\_1-3-20\_n78 | 1 | 0.6 |
| 3 | 0.6 |
| 20 | 0.3 |
| n78 | 0.8 |
| DC\_1-3-21\_n77 | 1 | 0.6 |
| 3 | 0.8 |
| 21 | 0.9 |
| n77 | 0.8 |
| DC\_1-3-21\_n78 | 1 | 0.6 |
| 3 | 0.8 |
| 21 | 0.9 |
| n78 | 0.8 |
| DC\_1-3-21\_n79 | 1 | 0.3 |
| 3 | 0.8 |
| 21 | 0.9 |
| DC\_1-3-42\_n77 | 1 | 0.6 |
| 3 | 0.6 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_1-3-42\_n78 | 1 | 0.6 |
| 3 | 0.6 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_1-3-42\_n79 | 1 | 0.6 |
| 3 | 0.6 |
| 42 | 0.8 |
| DC\_1-5-7\_n78  DC\_1-5-7-7\_n78 | 1 | 0.6 |
| 5 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_1-7-20\_n28 | 1 | 0.5 |
| 7 | 0.6 |
| 20 | 0.6 |
| n28 | 0.6 |
| DC\_1-7-20\_n78 | 1 | 0.6 |
| 7 | 0.7 |
| 20 | 0.4 |
| n78 | 0.8 |
| DC\_1-7\_n28-n78 | 1 | 0.6 |
| 7 | 0.6 |
| n28 | 0.6 |
| n78 | 0.8 |
| DC\_1-18-28\_n77 | 1 | 0.3 |
| 18 | 0.5 |
| 28 | 0.5 |
| n77 | 0.8 |
| DC\_1-18-28\_n78 | 1 | 0.3 |
| 18 | 0.5 |
| 28 | 0.5 |
| n78 | 0.8 |
| DC\_1-18-28\_n79 | 1 | 0.3 |
| 18 | 0.5 |
| 28 | 0.5 |
| DC\_1-19-42\_n77 | 1 | 0.6 |
| 19 | 0.3 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_1-19-42\_n78 | 1 | 0.3 |
| 19 | 0.3 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_1-19-42\_n79 | 1 | 0.3 |
| 19 | 0.3 |
| 42 | 0.8 |
| DC\_1-20\_n28-n78 | 1 | 0.3 |
| 20 | 0.6 |
| n28 | 0.6 |
| n78 | 0.8 |
| DC\_1-21-28\_n77 | 1 | 0.6 |
| 21 | 0.4 |
| 28 | 0.6 |
| n77 | 0.8 |
| DC\_1-21-28\_n78 | 1 | 0.3 |
| 21 | 0.4 |
| 28 | 0.6 |
| n78 | 0.8 |
| DC\_1-21-28\_n79 | 1 | 0.3 |
| 21 | 0.4 |
| 28 | 0.6 |
| DC\_1-21-42\_n77 | 1 | 0.6 |
| 21 | 0.4 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_1-21-42\_n78 | 1 | 0.3 |
| 21 | 0.4 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_1-21-42\_n79 | 1 | 0.3 |
| 21 | 0.4 |
| 42 | 0.8 |
| DC\_1-28-42\_n77 | 1 | 0.6 |
| 28 | 0.6 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_1-28-42\_n78 | 1 | 0.3 |
| 28 | 0.6 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_1-28-42\_n79 | 1 | 0.3 |
| 28 | 0.6 |
| 42 | 0.8 |
| DC\_1-41-42\_n77 | 1 | 0.5 |
| 41 | 0.5 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_1-41-42\_n78 | 1 | 0.5 |
| 41 | 0.5 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_1-41-42\_n79 | 1 | 0.5 |
| 41 | 0.5 |
| 42 | 0.8 |
| DC\_2-66-(n)71B | 2 | 0.5 |
| 66 | 0.5 |
| 71 | 0.3 |
| n71 |
| DC\_3-5-7\_n78, DC\_3-5-7-7\_n78A | 3 | 0.6 |
| 5 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_3-7-20\_n28 | 3 | 0.5 |
| 7 | 0.5 |
| 20 | 0.6 |
| n28 | 0.5 |
| DC\_3-7-20\_n78 | 3 | 0.6 |
| 7 | 0.6 |
| 20 | 0.3 |
| n78 | 0.8 |
| DC\_3-7-28\_n78 | 3 | 0.6 |
| 7 | 0.6 |
| 28 | 0.6 |
| n78 | 0.8 |
| DC\_3-7\_n28-n78 | 3 | 0.6 |
| 7 | 0.6 |
| n28 | 0.6 |
| n78 | 0.8 |
| DC\_3-19-21\_n77 | 3 | 0.8 |
| 19 | 0.3 |
| 21 | 0.9 |
| n77 | 0.8 |
| DC\_3-19-21\_n78 | 3 | 0.8 |
| 19 | 0.3 |
| 21 | 0.9 |
| n78 | 0.8 |
| DC\_3-19-21\_n79 | 3 | 0.8 |
| 19 | 0.3 |
| 21 | 0.9 |
| DC\_3-19-42\_n77 | 3 | 0.6 |
| 19 | 0.3 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_3-19-42\_n78 | 3 | 0.6 |
| 19 | 0.3 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_3-19-42\_n79 | 3 | 0.6 |
| 19 | 0.3 |
| 42 | 0.8 |
| DC\_3-20\_n28-n78 | 3 | 0.6 |
| 20 | 0.6 |
| n28 | 0.6 |
| n78 | 0.8 |
| DC\_3-28-42\_n77 | 3 | 0.6 |
| 28 | 0.5 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_3-28-42\_n78 | 3 | 0.6 |
| 28 | 0.5 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_3-28-42\_n79 | 3 | 0.6 |
| 28 | 0.5 |
| 42 | 0.8 |
| DC\_3-21-42\_n77 | 3 | 0.8 |
| 21 | 0.9 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_3-21-42\_n78 | 3 | 0.8 |
| 21 | 0.9 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_3-21-42\_n79 | 3 | 0.8 |
| 21 | 0.9 |
| 42 | 0.8 |
| DC\_7-20\_n28-n78 | 7 | 0.3 |
| 20 | 0.6 |
| n28 | 0.6 |
| n78 | 0.8 |
| DC\_19-21-42\_n77 | 19 | 0.3 |
| 21 | 0.4 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_19-21-42\_n78 | 19 | 0.3 |
| 21 | 0.4 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_19-21-42\_n79 | 19 | 0.3 |
| 21 | 0.4 |
| 42 | 0.8 |
| DC\_21-28-42\_n77 | 21 | 0.4 |
| 28 | 0.5 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_21-28-42\_n78 | 21 | 0.4 |
| 28 | 0.5 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_21-28-42\_n79 | 21 | 0.4 |
| 28 | 0.5 |
| 42 | 0.8 |

###### 6.2B.4.2.3.4 ΔTIB,c for EN-DC five bands

Table 6.2B.4.2.3.4-1: ΔTIB,c due to EN-DC (five bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔTIB,c (dB) |
| --- | --- | --- |
| DC\_1-3-5-7\_n78,  DC\_1-3-5-7-7\_n78 | 1 | 0.6 |
| 3 | 0.6 |
| 5 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_1-3-7-20\_n28 | 1 | 0.6 |
| 3 | 0.6 |
| 7 | 0.6 |
| 20 | 0.6 |
| n28 | 0.6 |
| DC\_1-3-7-20\_n78 | 1 | 0.6 |
| 3 | 0.6 |
| 7 | 0.6 |
| 20 | 0.6 |
| n78 | 0.6 |
| DC\_1-3-7\_n28-n78 | 1 | 0.7 |
| 3 | 0.7 |
| 7 | 0.7 |
| n28 | 0.6 |
| n78 | 0.8 |
| DC\_1-3-19-21\_n77 | 1 | 0.6 |
| 3 | 0.8 |
| 19 | 0.3 |
| 21 | 0.9 |
| n77 | 0.8 |
| DC\_1-3-19-21\_n78 | 1 | 0.6 |
| 3 | 0.8 |
| 19 | 0.3 |
| 21 | 0.9 |
| n78 | 0.8 |
| DC\_1-3-19-21\_n79 | 1 | 0.3 |
| 3 | 0.8 |
| 19 | 0.3 |
| 21 | 0.9 |
| DC\_1-3-19-42\_n77 | 1 | 0.6 |
| 3 | 0.6 |
| 19 | 0.3 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_1-3-19-42\_n78 | 1 | 0.6 |
| 3 | 0.6 |
| 19 | 0.3 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_1-3-19-42\_n79 | 1 | 0.6 |
| 3 | 0.6 |
| 19 | 0.3 |
| 42 | 0.8 |
| DC\_1-3-20\_n28-n78 | 1 | 0.6 |
| 3 | 0.6 |
| 20 | 0.6 |
| n28 | 0.6 |
| n78 | 0.8 |
| DC\_1-3-21-42C\_n77 | 1 | 0.6 |
| 3 | 0.8 |
| 21 | 0.9 |
| 42 | 0.8 |
| n77 | 0.6 |
| DC\_1-3-21-42C\_n78 | 1 | 0.6 |
| 3 | 0.8 |
| 21 | 0.9 |
| 42 | 0.8 |
| n78 | 0.6 |
| DC\_1-3-21-42C\_n79 | 1 | 0.6 |
| 3 | 0.8 |
| 21 | 0.9 |
| 42 | 0.8 |
| n79 | 0 |
| DC\_1-3-28-42\_n77 | 1 | 0.6 |
| 3 | 0.6 |
| 28 | 0.6 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_1-3-28-42\_n78 | 1 | 0.6 |
| 3 | 0.6 |
| 28 | 0.6 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_1-3-28-42\_n79 | 1 | 0.6 |
| 3 | 0.6 |
| 28 | 0.6 |
| 42 | 0.8 |
| DC\_1-7-20\_n28-n78 | 1 | 0.6 |
| 7 | 0.7 |
| 20 | 0.6 |
| n28 | 0.6 |
| n78 | 0.8 |
| DC\_1-19-21-42\_n77 | 1 | 0.3 |
| 19 | 0.3 |
| 21 | 0.4 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_1-19-21-42\_n78 | 1 | 0.3 |
| 19 | 0.3 |
| 21 | 0.4 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_1-19-21-42\_n79 | 1 | 0.3 |
| 19 | 0.3 |
| 21 | 0.4 |
| 42 | 0.8 |
| DC\_1-21-28-42\_n77 | 1 | 0.6 |
| 21 | 0.4 |
| 28 | 0.6 |
| 42 | 0.8 |
| n77 | 0.8 |
| DC\_1-21-28-42\_n78 | 1 | 0.3 |
| 21 | 0.4 |
| 28 | 0.6 |
| 42 | 0.8 |
| n78 | 0.8 |
| DC\_1-21-28-42\_n79 | 1 | 0.3 |
| 21 | 0.4 |
| 28 | 0.6 |
| 42 | 0.8 |
| DC\_3-7-20\_n28-n78 | 3 | 0.6 |
| 7 | 0.6 |
| 20 | 0.6 |
| n28 | 0.6 |
| n78 | 0.8 |

###### 6.2B.4.2.3.5 ΔTIB,c for EN-DC six bands

Table 6.2B.4.2.3.5-1: ΔTIB,c due to EN-DC (six bands)

|  |  |  |
| --- | --- | --- |
| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔTIB,c (dB) |
| DC\_1-3-7-20\_n28-n78 | 1 | 0.7 |
| 3 | 0.7 |
| 7 | 0.7 |
| 20 | 0.6 |
| n28 | 0.6 |
| n78 | 0.8 |

##### 6.2B.4.2.4 Inter-band EN-DC including FR2

###### 6.2B.4.2.4.1 ΔTIB,c for EN-DC two bands

Table 6.2B.4.2.4.1-1: ΔTIB,c due to EN-DC(two bands)

|  |  |  |
| --- | --- | --- |
| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔTIB,c (dB) |
|  |  |  |
|  |  |

###### 6.2B.4.2.4.2 ΔTIB,c for EN-DC three bands

Table 6.2B.4.2.4.2-1: ΔTIB,c due to EN-DC (three bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔTIB,c (dB) |
| --- | --- | --- |
| DC\_1-3\_n257 | 1 | 0.3 |
| 3 | 0.3 |
| DC\_1-7-7\_n257 | 1 | 0.5 |
| 7 | 0.6 |
| DC\_1-8\_n257 | 1 | 0.3 |
| 8 | 0.3 |
| DC\_1-18\_n257 | 1 | 0.3 |
| 18 | 0.3 |
| DC\_1-19\_n257 | 1 | 0.3 |
| 19 | 0.3 |
| DC\_1-21\_n257 | 1 | 0.3 |
| 21 | 0.3 |
| DC\_1-28\_n257 | 1 | 0.3 |
| 28 | 0.6 |
| DC\_1-41\_n257 | 1 | 0.5 |
| 41 | 0.5 |
| DC\_1-42\_n257 | 1 | 0.3 |
| 42 | 0.8 |
| DC\_1\_n77-n257 | 1 | 0.6 |
| n77 | 0.8 |
| DC\_1\_n78-n257 | 1 | 0.3 |
| n78 | 0.8 |
| DC\_1\_n79-n257 | 1 | 0 |
| n79 | 0 |
| DC\_2-5\_n257 | 2 | 0.3 |
| 5 | 0.3 |
| DC\_2-5\_n260 | 2 | 0.3 |
| 5 | 0.3 |
| DC\_2-12\_n260 | 2 | 0.3 |
| 12 | 0.3 |
| DC\_2-13\_n257 | 2 | 0.3 |
| 13 | 0.3 |
| DC\_2-13\_n260 | 2 | 0.3 |
| 13 | 0.3 |
| DC\_2-30\_n260 | 2 | 0.5 |
| 30 | 0.5 |
| DC\_2-66\_n257 | 2 | 0.5 |
| 66 | 0.5 |
| DC\_2-66\_n260 | 2 | 0.5 |
| 66 | 0.5 |
| DC\_3-19\_n257 | 3 | 0.3 |
| 19 | 0.3 |
| DC\_3-21\_n257 | 3 | 0.8 |
| 21 | 0.9 |
| DC\_3-28\_n257 | 3 | 0.3 |
| 28 | 0.3 |
| DC\_3-41\_n257 | 3 | 0.5 |
| 41 | 0.31/0.82 |
| DC\_3-42\_n257 | 3 | 0.6 |
| 42 | 0.8 |
| DC\_3\_n77-n257 | 3 | 0.6 |
| n77 | 0.8 |
| DC\_3\_n78-n257 | 3 | 0.6 |
| n78 | 0.8 |
| DC\_3\_n79-n257 | 3 | 0 |
| n79 | 0 |
| DC\_5-30\_n260 | 5 | 0.5 |
| 30 | 0.5 |
| DC\_5-66\_n257 | 5 | 0.3 |
| 66 | 0.3 |
| DC\_5-66\_n260 | 5 | 0.3 |
| 66 | 0.3 |
| DC\_5\_n78-n257 | 5 | 0.6 |
| n78 | 0.8 |
| n257 | 0 |
| DC\_7\_n78-n257 | 7 | 0.5 |
| n78 | 0.8 |
| n257 | 0 |
| DC\_12-30\_n260 | 12 | 0.5 |
| 30 | 0.5 |
| DC\_12-66\_n260 | 12 | 0.3 |
| 66 | 0.3 |
| DC 13-66\_n260 | 13 | 0.3 |
| 66 | 0.3 |
| DC\_18-28\_n257 | 18 | 0.5 |
| 28 | 0.5 |
| DC\_19-21\_n257 | 19 | 0.3 |
| 21 | 0.4 |
| 42 | 0.8 |
| DC\_19-42\_n257 | 19 | 0.3 |
| 42 | 0.8 |
| DC\_19\_n77-n257 | 19 | 0.3 |
| n77 | 0.8 |
| DC\_19\_n78-n257 | 19 | 0.3 |
| n78 | 0.8 |
| DC\_19\_n79-n257 | 19 | 0 |
| n79 | 0 |
| DC\_21-28\_n257 | 21 | 0.4 |
| 28 | 0.3 |
| DC\_21-42\_n257 | 21 | 0.4 |
| 42 | 0.8 |
| DC\_21\_n77-n257 | 21 | 0.4 |
| n77 | 0.8 |
| DC\_21\_n78-n257 | 21 | 0.4 |
| n78 | 0.8 |
| DC\_21\_n79-n257 | 21 | 0 |
| n79 | 0 |
| DC\_28-42\_n257 | 28 | 0.5 |
| 42 | 0.8 |
| DC\_41-42\_n257 | 41 | 0.5 |
| 42 | 0.8 |
| NOTE 1: The requirement is applied for UE transmitting on the frequency range of 2545-2690MHz.  NOTE 2: The requirement is applied for UE transmitting on the frequency range of 2496-2545MHz. | | |

###### 6.2B.4.2.4.3 ΔTIB,c for EN-DC four bands

Table 6.2B.4.2.4.3-1: ΔTIB,c due to EN-DC(four bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔTIB,c (dB) |
| --- | --- | --- |
| DC\_1A-3A-7A-7A\_n257A | 1 | 0.6 |
| 3 | 0.6 |
| 7 | 0.6 |
| DC\_1-3-19\_n257 | 1 | 0.3 |
| 3 | 0.3 |
| 19 | 0.3 |
| DC\_1-3-21\_n257 | 1 | 0.3 |
| 3 | 0.8 |
| 21 | 0.9 |
| DC\_1-3-28\_n257 | 1 | 0.6 |
| 3 | 0.6 |
| 28 | 0.6 |
| DC\_1-3-42\_n257 | 1 | 0.6 |
| 3 | 0.6 |
| 42 | 0.8 |
| DC\_1-3\_n78-n257 | 1 | 0.6 |
| 3 | 0.6 |
| n78 | 0.8 |
| DC\_1-5-7-7\_n257 | 1 | 0.5 |
| 5 | 0.3 |
| 7 | 0.6 |
| DC\_1-5\_n78-n257 | 1 | 0.3 |
| 5 | 0.6 |
| n78 | 0.8 |
| DC\_1-7\_n78-n257 | 1 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_1-18-28\_n257 | 1 | 0.3 |
| 18 | 0.5 |
| 28 | 0.5 |
| DC\_1-19-42\_n257 | 1 | 0.3 |
| 19 | 0.3 |
| 42 | 0.8 |
| DC\_1-21-28\_n257 | 1 | 0.3 |
| 21 | 0.4 |
| 28 | 0.6 |
| DC\_1-21-42\_n257 | 1 | 0.3 |
| 21 | 0.4 |
| 42 | 0.8 |
| DC\_1-28-42\_n257 | 1 | 0.3 |
| 28 | 0.6 |
| 42 | 0.8 |
| DC\_1-41-42\_n257 | 1 | 0.5 |
| 41 | 0.5 |
| 42 | 0.8 |
| DC\_19-21-42\_n257 | 19 | 0.3 |
| 21 | 0.4 |
| 42 | 0.8 |
| DC\_3-5\_n78-n257 | 3 | 0.6 |
| 5 | 0.6 |
| n78 | 0.8 |
| DC\_3-7\_n78-n257 | 3 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_3-19-21\_n257 | 3 | 0.8 |
| 19 | 0.3 |
| 21 | 0.9 |
| DC\_3-19-42\_n257 | 3 | 0.6 |
| 19 | 0.3 |
| 42 | 0.8 |
| DC\_3-21-42\_n257 | 3 | 0.8 |
| 21 | 0.9 |
| 42 | 0.8 |
| DC\_3-28-42\_n257 | 3 | 0.6 |
| 28 | 0.5 |
| 42 | 0.8 |
| DC\_5-7\_n78-n257 | 5 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_7-7\_n78-n257 | 7 | 0.5 |
| n78 | 0.8 |
| DC\_21-28-42\_n257 | 21 | 0.4 |
| 28 | 0.5 |
| 42 | 0.8 |

###### 6.2B.4.2.4.4 ΔTIB,c for EN-DC five bands

Table 6.2B.4.2.4.4-1: ΔTIB,c due to EN-DC (five bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔTIB,c (dB) |
| --- | --- | --- |
| DC\_1-3-5-7-7\_n257 | 1 | 0.6 |
| 3 | 0.6 |
| 5 | 0.3 |
| 7 | 0.6 |
| DC\_1-3-5\_n78-n257 | 1 | 0.6 |
| 3 | 0.6 |
| 5 | 0.6 |
| n78 | 0.8 |
| DC\_1-3-7\_n78-n257 | 1 | 0.7 |
| 3 | 0.7 |
| 7 | 0.7 |
| n78 | 0.8 |
| DC\_1-3-19-21\_n257 | 1 | 0.3 |
| 3 | 0.8 |
| 19 | 0.3 |
| 21 | 0.9 |
| DC\_1-3-19-42\_n257 | 1 | 0.6 |
| 3 | 0.6 |
| 19 | 0.3 |
| 42 | 0.8 |
| DC\_1-3-21-42C\_n257 | 1 | 0.6 |
| 3 | 0.8 |
| 21 | 0.9 |
| 42 | 0.8 |
| DC\_1-3-28-42\_n257 | 1 | 0.6 |
| 3 | 0.6 |
| 28 | 0.6 |
| 42 | 0.8 |
| DC\_1-5-7\_n78-n257 | 1 | 0.6 |
| 5 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_1-7-7\_n78-n257 | 1 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_1-19-21-42\_n257 | 1 | 0.3 |
| 19 | 0.3 |
| 21 | 0.4 |
| 42 | 0.8 |
| DC\_1-21-28-42\_n257 | 1 | 0.3 |
| 21 | 0.4 |
| 28 | 0.6 |
| 42 | 0.8 |
| DC\_3-5-7\_n78-n257 | 3 | 0.6 |
| 5 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_3-7-7\_n78-n257 | 3 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_5-7-7\_n78-n257 | 5 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |

###### 6.2B.4.2.4.5 ΔTIB,c for EN-DC six bands

Table 6.2B.4.2.4.5-1: ΔTIB,c due to EN-DC (six bands)

|  |  |  |
| --- | --- | --- |
| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔTIB,c (dB) |
| DC\_1-3-5-7\_n78-n257 | 1 | 0.6 |
| 3 | 0.6 |
| 5 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_1-3-7-7\_n78-n257 | 1 | 0.7 |
| 3 | 0.7 |
| 7 | 0.7 |
| n78 | 0.8 |
| DC\_1-5-7**-**7\_n78-n257 | 1 | 0.6 |
| 5 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |
| DC\_3-5-7**-**7\_n78-n257 | 3 | 0.6 |
| 5 | 0.6 |
| 7 | 0.6 |
| n78 | 0.8 |

##### 6.2B.4.2.5 Inter-band EN-DC including both FR1 an FR2

###### 6.2B.4.2.5.1 ΔTIB,c for EN-DC three bands

Table 6.2B.4.2.5.1-1: ΔTIB,c due to EN-DC (three bands)

|  |  |  |
| --- | --- | --- |
| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔTIB,c (dB) |
| DC\_1\_n77-n257 | 1 | 0.6 |
| n77 | 0.8 |
| DC\_1\_n78-n257 | 1 | 0.3 |
| n78 | 0.8 |
| DC\_3\_n77-n257 | 3 | 0.6 |
| n77 | 0.8 |
| DC\_3\_n78-n257 | 3 | 0.6 |
| n78 | 0.8 |
| DC\_19\_n77-n257 | 19 | 0.3 |
| n77 | 0.8 |
| DC\_19\_n78-n257 | 19 | 0.3 |
| n78 | 0.8 |

## 6.3 Output power dynamics

Output power dynamics for CA operations in FR1 and FR2 as specified in 38.101-1 and 38.101-2, respectively.

Output power dynamics for EN-DC operations in FR1 and FR2 as specified in 38.101-1 and 38.101-2, respectively. E-UTRA as specified in 36.101. For intra-band contiguous EN-DC operation in FR1, minimum output power requirements specified in sub-clause 6.3.1 of 38.101-1 and sub-clause 6.3.2 of 36.101 shall only apply when the power of all NR and E-UTRA carriers are set to minimum value. Similarly, OFF power requirements specified in sub-clause 6.3.2 of 38.101-1 and sub-clause 6.3.3 of 36.101 shall only apply when the power of all NR and E-UTRA carriers are OFF. The OFF power condition in transmit ON/OFF time mask requirements specified in sub-clause 6.3.3 of 38.101-1 and sub-clause 6.3.4 of 36.101 is applicable only when all NR and E-UTRA carriers are OFF. If both E-UTRA and NR transition between ON and OFF states simultaneously, the longer transient time shall apply to both. If either E-UTRA or NR is OFF and the other carrier transitions from OFF to ON, then the transiet time associated with that carrier applies.

6.3B Output power dynamics for DC

### 6.3B.1 Output power dynamics for EN-DC with UL sharing from UE perspective

#### 6.3B.1.1 E-UTRA and NR switching time mask for TDM based UL sharing from UE perspective

The E-UTRA and NR switching time mask is only applicable for non-simultaneous transmissions between E-UTRA and NR in TDM based UL sharing from the UE perspective over the shared bandwidth of a carrier.

The E-UTRA and NR switching time mask defines the observation period between E-UTRA subframe and NR slot/mini-slot boundary. Both E-UTRA subframe and NR slot/mini-slot have ON power transmissions. The ON power is defined as the mean power over the symbol duration excluding any transient period. For E-UTRA subframe or NR slot/mini-slot having OFF power transmission, the general time mask for E-UTRA or NR shall apply.

For UEs reporting E-UTRA and NR switching time capability of type 1 with switching time <0.5us, time masks in Figure 6.3B.1.1-1 and Figure 6.3B.1.1-2 shall apply. For UEs reporting E-UTRA and NR switching time capability of type 2 with switching time <20us, time masks in Figure 6.3B.1.1-3 and Figure 6.3B.1.1-4 shall apply.



Figure 6.3B.1.1-1: E-UTRA to NR switching time mask for type 1 for TDM based UL sharing from UE perspective



Figure 6.3B.1.1-2: NR to E-UTRA switching time mask for type 1 for TDM based UL sharing from UE perspective



Figure 6.3B.1.1-3: E-UTRA to NR switching time mask for type 2 for TDM based UL sharing from UE perspective



Figure 6.3B.1.1-4: NR to E-UTRA switching time mask for type 2 for TDM based UL sharing from UE perspective

### 6.3B.2 Output power dynamics for intra-band non-contigious switching time

For DC\_3A\_n3A single switched UL operation in Rel.15, maximum UL switching time is defined as 120 us and DL reception interruption is allowed during UL switching.

## 6.4 Transmit signal quality

Transmit signal quality for CA operations in FR1 and FR2 as specified in 38.101-1 and 38.101-2, respectively.

Transmit signal quality for EN-DC operations in FR1 and FR2 as specified in 38.101-1 and 38.101-2, respectively. E-UTRA as specified in 36.101.

## 6.4B Transmit signal quality for DC

### 6.4B.2 Transmit modulation quality for EN-DC

#### 6.4B.2.1 Intra-band contiguous EN-DC

##### 6.4B.2.1.1 Error Vector Magnitude

For the intra-band contiguous EN-DC with one component carrier per CG the EVM requirement applies with PRB allocation in one of the CG and the other CG unallocated.

The EVM requirements for each CG are according to clause 6.5.2 of [4] for the MCG and 6.4.2 of [2] for the SCG with EN-DC configured.

##### 6.4B.2.1.2 Carrier leakage

The carrier leakage requirements for each CG are according to clause 6.5.2 of [4] for the MCG and 6.4.2 of [2] for the SCG with EN-DC configured.

##### 6.4B.2.1.3 In-band emissions

For the MCG the requirements the in-band emission requirments in Table 6.5.2A.3.1-1 and 6.5.2A.3.1-2 in [4] apply within the aggregated transmission bandwidth configuration of the EN-DC bandwidth with the carriers of both CGs active and one single contiguous PRB allocation of bandwidth  within the MCG at the edge of the said aggregated transmission bandwidth configuration.

For the SCG the requirements the in-band emission requirements in Table 6.5.2A.3.1-1 and 6.5.2A.3.1-2 in [4] apply within the aggregated transmission bandwidth configuration of the EN-DC bandwidth with the carriers of both CGs active and one single contiguous PRB allocation of bandwidth  within the SCG at the edge of the aggregated transmission bandwidth configuration.

## 6.5 Output RF spectrum emissions

## 6.5A Output RF spectrum emissions for CA

<Editor’s note: carrier aggregation of bands FR1 and FR2>

### 6.5A.1 Occupied bandwidth for CA

### 6.5A.2 Out-of-band emissions for CA

### 6.5A.3 Spurious emissions for CA

#### 6.5A.3.1 Inter-band CA between FR1 and FR2

*Detailed structure of the subclause is TBD.*

Table 6.5A.X.X-1: Requirements for uplink inter-band CA (two bands)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **NR CA Configuration** | **Spurious emission** | | | | | | |
| **Protected band** | **Frequency range (MHz)** | | | **Maximum Level (dBm)** | **MBW (MHz)** | **NOTE** |
| CA\_n8A-n258A | E-UTRA Band 1,8, 20, 28, 34, 39, 40,65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3, 7,41,42,n78,n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 6 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 6 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 4 |
| CA\_n77A-n257A | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 21, 26, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 4 |
| CA\_n78A-n257A | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 21, 26, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 4 |
| CA\_n79A-n257A | E-UTRA Band 1, 3, 5, 8, 11, 18, 19, 26, 21, 28, 34, 39, 40, 41, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 4 |
| NOTE 1: FDL\_low and FDL\_high refer to each frequency band specified in Table 5.2-1 in TS 38.101-1/2 or Table 5.5 in TS 36.101  NOTE 2: As exceptions, measurements with a level up to the applicable requirements defined in Table 6.5.3.1-2 in TS 38.101-1 are permitted for each assigned NR carrier used in the measurement due to 2nd, 3rd, 4th or 5th harmonic spurious emissions. Due to spreading of the harmonic emission the exception is also allowed for the first 1 MHz frequency range immediately outside the harmonic emission on both sides of the harmonic emission. This results in an overall exception interval centred at the harmonic emission of (2MHz + N x LCRB x 180kHz), where N is 2, 3, 4, 5 for the 2nd, 3rd, 4th or 5th harmonic respectively. The exception is allowed if the measurement bandwidth (MBW) totally or partially overlaps the overall exception interval.  NOTE 3: 15KHz SCS is assumed when RB is mentioned in the note.  NOTE 4: Applicable when co-existence with PHS system operating in 1884.5 -1915.7MHz  NOTE 5: These requirements also apply for the frequency ranges that are less than FOOB (MHz) in Table 6.5.3.1-1 and Table 6.5A.3.1-1 in TS 38.101-1 from the edge of the channel bandwidth.  NOTE 6: This requirement is applicable only for the following cases: - for carriers of 5 MHz channel bandwidth when carrier centre frequency (Fc) is within the range 902.5 MHz ≤ Fc < 907.5 MHz with an uplink transmission bandwidth less than or equal to 20 RB - for carriers of 5 MHz channel bandwidth when carrier centre frequency (Fc) is within the range 907.5 MHz ≤ Fc ≤ 912.5 MHz without any restriction on uplink transmission bandwidth. - for carriers of 10 MHz channel bandwidth when carrier centre frequency (Fc) is Fc = 910 MHz with an uplink transmission bandwidth less than or equal to 32 RB with RBstart > 3. | | | | | | | |

NOTE: To simplify above Table, E-UTRA band numbers are listed for bands which are specified only for E-UTRA operation or both E-UTRA and NR operation. NR band numbers are listed for bands which are specified only for NR operation.

## 6.5B Output RF spectrum emissions for DC

### 6.5B.1 Occupied bandwidth for EN-DC

For intra-band contiguous EN-DC the occupied bandwidth is a measure of the bandwidth containing 99% of the total integrated power of the transmitted spectrum. The OBW shall be less than the aggregated channel bandwidth for EN-DC, denoted as ENBW in sub-clause 5.3B.

### 6.5B.2 Out-of-band emissions for EN-DC

#### 6.5B.2.1 Intra-band contiguous EN-DC

Unless otherwise stated, the OOBE limits specified for the DC combination in this sub-clause supercede any OOBE requirements specified for each sub-block in the respective TS [4] and [2].

The requirements apply to the sum of transmissions across all antenna connectors.

##### 6.5B.2.1.1 Spectrum emissions mask

The general spectrum emission for intra-band contiguous EN-DC is specified in Table 6.5B.2.1.1-1.

Table 6.5B.2.1.1-1. General spectrum emission mask for intra-band contiguous EN-DC

|  |  |  |
| --- | --- | --- |
| ΔfOOB  **(MHz)** | **Spectrum emission limit (dBm)** | **Measurement bandwidth** |
| ± 0 - 1 | Max(Round(10\*log(0.15/ENBW)),-24) | 30 kHz |
| ± 1 - 5 | -10 | 1 MHz |
| ± 5 - ENBW | -13 | 1 MHz |
| ± ENBW – (ENBW+5) | -25 | 1 MHz |
| NOTE: ENBW refers to the aggregated channel bandwidth in MHz as defined in sub-clause 5.3B. | | |

##### 6.5B.2.1.2 Additional spectrum emissions mask

###### 6.5B.2.1.2.1 Requirements for network signalled value "NS\_35"

When NS\_35 is indicated in the MCG and NS\_35 is indicated in the SCG, the requirements in Table 6.5B.2.1.2.1-1 apply in the frequency ranges immediately adjacent and outside the aggregated sub-blocks of the EN-DC configuration for DC\_(n)71B.

Table 6.5B.2.1.2.1-1: Additional requirements

|  |  |  |  |
| --- | --- | --- | --- |
| ΔfOOB  (MHz) | Frequency offset of measurement filter centre frequency, f\_offset | Minimum requirement  (dBm) | Measurement bandwidth |
| 0 MHz ≤ Δf < 0.1 MHz | 0.015 MHz ≤ f\_offset < 0.085 MHz | -13 | 30 kHz |
| 0.1 MHz ≤ Δf < ENBW | 0.15 MHz ≤ f\_offset < ENBW – 0.05 MHz | -13 | 100 kHz |
| ENBW ≤ Δf < ENBW + 5 MHz | ENBW+0.5 MHz ≤ f\_offset < ENBW + 4.5 MHz | -25 | 1 MHz |
| NOTE 1: ENBW is the aggregated bandwidth of an E-UTRA sub-block and an adjacent NR sub-block; there is no frequency separation between the said sub-blocks. The sub-block bandwidths include any internal guard bands. | | | |

###### 6.5B.2.1.2.2 Requirements for network signalled value "NS\_04"

Additional spectrum emission requirements are signalled by the network to indicate that the UE shall meet an additional requirement for a specific deployment scenario as part of the cell handover/broadcast message.

The Band 41/n41 SEM transition point from -13 dBm/MHz to -25 dBm/MHz is based on the emission bandwidth. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. Since the 26 dB emission bandwidth is implementation dependent, the transmission bandwidths occupied by RBs is used for the SEM. The emission bandwidth for LTE carriers is document in 36.101 [4], and the emission bandwidth for NR carriers is documented in 38.101-1 [2]. The total emission bandwidth for contiguous intra-band EN-DC is the sum of the emission bandwidth for each CC plus the guard band between contiguous CCs.

When "NS\_04" is indicated in the cell, the power of any UE emission shall not exceed the levels specified in Table 6.5B.2.1.2.2-1.

Table 6.5B.2.1.2.2-1: n41 SEM with NS\_04

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Spectrum emission limit (dBm)/ measurement bandwidth**  **for each channel bandwidth** | | | | | | |
| **ΔfOOB MHz** | **10  MHz** | **15  MHz** | **20  MHz** | **40  MHz** | **50  MHz** | **> 50  MHz** | **Measurement bandwidth** |
| ± 0 - 1 | -18 | -20 | -21 | -24 | -25 | | 30 kHz |
| ± 1 - 5 | -10 | | | | | | 1 MHz |
| ± 5 - X | -13 | | | | | |
| ± X - (BWChannel + 5 MHz) | -25 | | | | | |
| NOTE: X is defined as the sum of the emission bandwidth of the component carriers plus the guard band between contiguous CCs. | | | | | | | |

##### 6.5B.2.1.3 Adjacent channel leakage ratio

For EN-DC operation with an E-UTRA sub-block immediately adjacent to an NR sub-block, the ACLR is defined as the ratio of the filtered mean power centred on the aggregated sub-block bandwidth ENBW to the filtered mean power centred on an adjacent bandwidth of the same size ENBW at nominal channel spacing. The UE shall meet the ACLR minimum requirement EN-DCACLR specified in Table 6.5B.2.1.3-1 with ENBW the sum of the sub-block bandwidths.

The assigned channel power and adjacent channel power are measured with rectangular filters with measurement bandwidths specified in 6.5B.2.1.3-1.

Table 6.5B.2.1.3-1: ACLR for intra-band EN-DC (contiguous sub-blocks)

|  |  |  |
| --- | --- | --- |
| Parameter | Unit | Value |
| EN-DCACLR | dBc | 30 |
| Measurement bandwidth of EN-DC channel |  | 1.00\*ENBW |
| Measurement bandwidth of adjacent channel |  | 0.95\*ENBW |
| Frequency offset of adjacent channel |  | ENBW  /  -ENBW |
| NOTE 1: ENBW is the aggregated bandwidth in MHz as defined in sub-clause 5.3B.  NOTE 2: The frequency offset is that in between the centre frequencies of the measurement filters | | |

#### 6.5B.2.2 Intra-band non-contiguous EN-DC

##### 6.5B.2.2.1 Spectrum emissions mask

The spectral emission mask for intra-band non-contiguous EN-DC is a composite of the emission mask for each CC with the level set to the maximum value from each mask for each frequency outside of the transmission bandwidth of either carrier. A composite spectrum emission mask is a combination of individual CC spectrum emissions masks. Where two masks overlap the most relaxed limit is used.

##### 6.5B.2.2.2 Additional spectrum emissions mask

When additional spectrum emission mask or masks apply, the additional SEM(s) shall be used to calculate the composite SEM described in 6.5B.2.2.1.

##### 6.5B.2.2.3 Adjacent channel leakage ratio

For intra-band non-contiguous EN-DC when all UL sub-blocks consist of one component carrier the EN-DC Adjacent Channel Leakage power Ratio (EN-DCACLR) is the ratio of the sum of the filtered mean powers centred on the assigned sub-block frequencies to the filtered mean power centred on an adjacent channel frequency at nominal channel spacing. In case the sub-block gap bandwidth Wgap is smaller than of the sub-block bandwidth than for that sub-block no EN-DCACLR requirement is set for the gap. In case the sub-block gap bandwidth Wgap is smaller than either of the sub-block bandwidths then no EN-DCACLR requirement is set for the gap. The assigned EN-DC sub-block power and adjacent channel power are measured with rectangular filters with measurement bandwidths specified in in [4] for the E-UTRA sub-block, and [2],[3] for the NR sub-block. If the measured adjacent channel power is greater than –50dBm then the EN-DCACLR shall be higher than the value specified in for E-UTRAACLR and NRACLR .

#### 6.5B.2.3 Inter-band EN-DC within FR1

Unless otherewise stated, the OOBE requirements specified in sub-clause 6.6.2.1 of [4], sub-clause 6.5.2.2 of [2] and the additional requirments in 6.6.2.2 of [4] and 6.5.2.3 of [2] apply for each component carrier.

The requirements apply to each antenna connector.

#### 6.5B.2.4 Inter-band EN-DC including FR2

#### 6.5B.2.5 Inter-band EN-DC including both FR1 and FR2

### 6.5B.3 Spurious emissions for EN-DC

#### 6.5B.3.1 Intra-band contiguous EN-DC

The general spurious emissions requirements specified in sub-clause 6.6.3.1 of [4] and sub-clause 6.5.3.1 of [2] apply beyond any frequencies for which the out-of-band emissions requirements in sub-clause 6.5.2 apply.

##### 6.5B.3.1.1 General spurious emissions

The general spurious emissions requirements specified in sub-clause 6.6.3.1 of [4] and sub-clause 6.5.3.1 of [2] apply beyond any frequencies for which the out-of-band emissions requirements in sub-clause 6.5B.2.1apply.

##### 6.5B.3.1.2 Spurious emission band UE co-existence

The requirements in Table 6.5B.3.1.2-1 apply on each component carrier with all component carriers are active.

Table 6.5B.3.1-1: Requirements for intraband carrier aggregation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| EN-DC Configuration | Spurious emission | | | | | | |
| Protected band | Frequency range (MHz) | | | Maximum Level (dBm) | MBW (MHz) | NOTE |
| … |  |  | | |  |  |  |
| DC\_(n)71B | E-UTRA Band 4, 5, 12, 13, 14, 17, 24, 26, 30, 48, 66 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25, 41, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 29 | FDL\_lowFDL\_low | -- | FDL\_highFDL\_high | -38 | 1 | 3 |
| E-UTRA Band 71 | FDL\_low | - | FDL\_high | -50 | 1 | 3 |
| … |  |  |  |  |  |  |  |
| NOTE1:FDL\_low and FDL\_high refer to each E-UTRA frequency band specified in Table 5.5-1  NOTE 2:As exceptions, measurements with a level up to the applicable requirements defined in Table 6.6.3.1-2 are permitted for each assigned E-UTRA carrier used in the measurement due to 2nd, 3rd, 4th or 5th harmonic spurious emissions. Due to spreading of the harmonic emission the exception is also allowed for the first 1 MHz frequency range immediately outside the harmonic emission on both sides of the harmonic emission. This results in an overall exception interval centred at the harmonic emission of (2MHz + N x LCRB x 180kHz), where N is 2, 3, 4, 5 for the 2nd, 3rd, 4th or 5th harmonic respectively. The exception is allowed if the measurement bandwidth (MBW) totally or partially overlaps the overall exception interval  NOTE 3:These requirements also apply for the frequency ranges that are less than FOOB (MHz) in Table 6.6.3.1-1 and Table 6.6.3.1A-1 [4] from the edge of the channel bandwidth. | | | | | | | |

#### 6.5B.3.2 Intra-band non-contiguous EN-DC

#### 6.5B.3.3 Inter-band EN-DC within FR1

< conducted requirements >

< Editor’s note: Chapter numbers to be updated >

The general spurious emissions requirements specified in sub-clause 6.6.3.1 of [4], sub-clause 6.5.3.1 of [2] and [3] apply for each component carrier.

##### 6.5B.3.3.1 Spurious emission band UE co-existence

< Editor’s note: Chapter numbers to be updated >

This clause specifies the requirements for the specified EN-DC, for coexistence with protected bands. The requirements in Table 6.5B.3.3.1-1 apply on each component carrier with all component carriers are active.

Table 6.5B.3.3.1-1: Requirements

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **EN-DC Configuration** | **Spurious emission** | | | | | | |
| **Protected band** | **Frequency range (MHz)** | | | **Maximum Level (dBm)** | **MBW (MHz)** | **NOTE** |
| DC\_1A\_n28A | E-UTRA Band 18, 19, 27, 31, 32, 72  NR band n5, n7, n8, n20, n26, n38, n40, n41, n50, n51, n74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band42, 43  NR band n78, n75, n76 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| NR band n3, n34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 10, 12 |
| E-UTRA Band 65  NR band n1 | FDL\_low | - | FDL\_high | -50 | 1 | 10, 11 |
| Frequency range | 470 | - | 694 | -42 | 8 | 5, 18 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 15 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 662 | - | 694 | -26.2 | 6 | 5 |
| Frequency range | 1880 | - | 1895 | -40 | 1 | 5,17 |
| Frequency range | 1895 | - | 1915 | -15.5 | 5 | 5, 7, 17 |
| Frequency range | 1915 | - | 1920 | +1.6 | 5 | 5, 7, 17 |
| Frequency range | 1839.9 | - | 1879.9 | -50 | 1 | 5 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 10, 16 |
| DC\_1A\_n40A | Band 1, 5, 7, 8, 11, 18, 19, 20, 21, 22, 26, 27, 28, 31, 32, 38, 40, 41, 42, 43, 44, 45, 50, 51, 52, 65, 67, 68, 69, 72, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Band 3, 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 1880 |  | 1895 | -40 | 1 | 5, 17 |
| Frequency range | 1895 |  | 1915 | -15.5 | 5 | 5, 7, 17 |
| Frequency range | 1915 |  | 1920 | +1.6 | 5 | 5, 7, 17 |
| DC\_1A\_n51A | E-UTRA Band 7, 12, 13, 17, 20, 22, 27, 28, 29, 31, 38, 44, 48, 67, 68, 69, 72, 73 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3, 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5, 2 |
| Frequency range | 1880 | - | 1895 | -40 | 1 | 5, 17 |
| Frequency range | 1895 | - | 1915 | -15.5 | 5 | 5, 7, 17 |
| Frequency range | 1915 | - | 1920 | +1.6 | 5 | 5, 7, 17 |
| E-UTRA Band 5, 6, 8, 26, 30, 40, 41, 42, 43, 46  NR Band n77, n78, n79, | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_1A\_n77A | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 20, 21, 26, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| Frequency range | 1880 | - | 1895 | -40 | 1 | 5, 9 |
| Frequency range | 1895 | - | 1915 | -15.5 | 5 | 5, 7, 9 |
| Frequency range | 1915 | - | 1920 | +1.6 | 5 | 5, 7, 9 |
| DC\_1A\_n78A  DC\_1A\_n84A\_ULSUP-TDM\_n78A  DC\_1A\_n84A\_ULSUP-FDM\_n78A | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 20, 21, 26, 28, 34, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| Frequency range | 1880 | - | 1895 | -40 | 1 | 5, 9 |
| Frequency range | 1895 | - | 1915 | -15.5 | 5 | 5, 7, 9 |
| Frequency range | 1915 | - | 1920 | +1.6 | 5 | 5, 7, 9 |
| DC\_1A\_n79A | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 21, 26, 28, 34, 40, 41, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| Frequency range | 1880 | - | 1895 | -40 | 1 | 5, 9 |
| Frequency range | 1895 | - | 1915 | -15.5 | 5 | 5, 7, 9 |
| Frequency range | 1915 | - | 1920 | +1.6 | 5 | 5, 7, 9 |
| DC\_2A\_n5A | Bands 4, 5, 10, 12, 13, 14, 17, 24, 28, 29, 30, 42, 48, 50, 51, 66, 70, 71, n71, 74, 85, n257 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Bands 2, 25, 48 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 26 | 859 | - | 869 | -27 | 1 |  |
| E-UTRA Band 41, 43 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_2A\_n66A | Bands 4, 5, 10, 12, 13, 14, 17, 24, 26, 27, 28, 29, 30, 41, 50, 51, 66, 70, 71, n71, 74, 85, n257 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Bands 2, 25 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Bands 42, 48 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_2A\_n71A | E-UTRA Band 4, 5, 12, 13, 14, 17, 24, 26, 29, 30, 48, 66 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25, 41, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| NR Band n71 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_2A\_n78A | E-UTRA Band 4, 5, 10, 12, 13, 14, 17, 24, 26, 27, 28, 29, 30, 41, 42, 48, 50, 51, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| NR Band 78 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_3A\_n7A | E-UTRA Band 1, 5, 7, 8, 20, 26, 27, 28, 31, 32, 33, 34, 40, 43, 44, 50, 51, 65, 67, 72, 74, 75, 76  NR Band n1, n5, n7, n8, n20, n28, n50, n51, n74, n75, n76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA band 22, 42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_3A\_n28A | E-UTRA Band 42, 43, 65  NR band n1, n50, n51, n74, n75, n76, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| NR band n1 | FDL\_low | - | FDL\_high | -50 | 1 | 10, 11 |
| NR band n3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 27, 31, 72  NR band n5, n7, n8, n20, n26, n34, n38, n40, n41 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 11, 18, 19, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 14 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 14 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 15 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 10 |
| DC\_3A\_n40A | Band 1, 5, 7, 8, 20, 26, 27, 28, 31, 32, 33, 34, 38, 39, 41, 43, 44. 45, 50, 51, 65, 67, 68, 69, 72, 73, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Band 3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Band 22, 42, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_3A\_n51A | E-UTRA Band 7, 8, 12, 13, 17, 20, 27, 28, 31, 33, 38, 48, 67, 68, 69, 72, 73 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 1, 5, 6, 22, 26, 30, 34, 36, 40, 41, 42, 43, 44, 46, 65, 71 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_3A\_n77A | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 20, 21, 26, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_3A\_n78A  DC\_3A\_n80A\_ULSUP-TDM\_n78A,  DC\_3A\_n80A\_ULSUP-FDM\_n78A | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 20, 21, 26, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_3A\_n79A  DC\_3A\_n79A DC\_3A\_n80A\_ULSUP-TDM\_n79A,  DC\_3A\_n80A\_ULSUP-FDM\_n79A | E-UTRA Band 1, 3, 5, 8, 11, 18, 19, 21, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_3A\_n82A | E-UTRA Band 1, 3 7, 8, 20，22, 31, 32, 33, 34, 38, 40, 43, 50, 51, 65, 67, 68, 69, 72,74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_5A\_n40A | Band 1, 3, 5, 7, 8, 28, 31, 34, 38, 42, 43, 45, 65, 73 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Band 26 | 859 | - | 869 | -27 | 1 |  |
| Band 41, 52 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_5A\_n66A | Bands 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 13, 14, 17, 24, 25, 28, 29, 30, 34, 38, 40, 43, 45, 50, 51, 65, 66, 70, 71, n71, 85, n257 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 26 | 859 | - | 869 | -27 | 1 |  |
| Bands 41, 42, 48, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 18, 19 | FDL\_low | - | FDL\_high | -40 | 1 |  |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_5A\_n78A | E-UTRA Band 1, 2, 3, 4, 5, 7, 8, 10, 12, 13, 14, 17, 24, 25, 28, 29, 30, 31, 34, 38, 40, 42, 43, 45, 48, 65, 66, 70 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 3800 | - | 3805 | +1.6 | 5 | 5, 7, 8 |
| Frequency range | 3805 | - | 3825 | -15.5 | 5 | 5, 7, 8 |
| Frequency range | 3825 | - | 3850 | -40 | 1 | 5, 8 |
| Frequency range | 3850 | - | 4200 | -50 | 1 |  |
| E-UTRA Band 26 | 859 | - | 869 | -27 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 4 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| E-UTRA Band 41 | FDL\_low | - | FDL\_high | -50 | 1 | 7 |
| E-UTRA Band 18, 19 | FDL\_low | - | FDL\_high | -40 | 1 | 4 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 4 |
| DC\_7A\_n28A | E-UTRA Band 27, 31, 72  NR band n2, n3, n5, n7, n8, n20, n26, n34, n40 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 4, 10, 42, 43, 65  NR band n1, n50, n51, n66, n74, n75, n76, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| NR band n1 | FDL\_low | - | FDL\_high | -50 | 1 | 10, 11 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_7A\_n51A | E-UTRA Band 2, 3, 5, 8, 26, 30, 31, 32, 33, 34, 40, 48, 72 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 7, 17 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 7, 17 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 21 |
| E-UTRA Band 1, 4, 10, 12, 13, 14, 17, 20, 22, 23, 27, 28, 29, 42, 43, 44, 46, 65, 66, 67, 68  NR Band n77, n78, n79, | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_7A\_n78A | E-UTRA Band 1, 2, 3, 4, 5, 7, 8, 10, 11, 18, 19, 20, 21, 26, 27, 28, 31, 32, 33, 34, 40, 50, 51, 65, 66, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| Frequency range | 3800 | - | 3805 | +1.6 | 5 | 5, 7, 8 |
| Frequency range | 3805 | - | 3825 | -15.5 | 5 | 5, 7, 8 |
| Frequency range | 3825 | - | 3850 | -40 | 1 | 5, 8 |
| Frequency range | 3850 | - | 4200 | -50 | 1 |  |
| DC\_8A\_n40A | Band 1, 20, 28, 31, 32, 33, 34, 38, 39, 40, 45, 50, 51, 65, 67, 68, 69, 72, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Band 3, 7, 22, 41, 42, 43, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Band 8 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 13 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 13 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | ３, 13 |
| DC\_8A\_n77A | E-UTRA Band 1, 20, 28, 31, 32, 33, 34, 38, 39, 40, 44, 45, 50, 51, 65, 67, 68, 69, 72, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3, 7, 22, 41 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 8 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 13 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 13 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 13 |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_8A\_n78A  DC\_8A\_n81A\_ULSUP-TDM\_n78A,  DC\_8A\_n81A\_ULSUP-FDM\_n78A | E-UTRA Band 1,8, 20, 28, 34, 39, 40,65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3, 7,41 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 13 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 13 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 13 |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| NR Band n258 | 24250 | - | 27500 | -5 | 100 |  |
| DC\_8A\_n79A  DC\_8A\_n81A\_ULSUP-TDM\_n79A,  DC\_8A\_n81A\_ULSUP-FDM\_n79A | E-UTRA Band 1,8,28,34,39,40,65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3,41,42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 13 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 13 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| NR Band n258 | 24250 | - | 27500 | -5 | 100 |  |
| DC\_11A\_n77A | E-UTRA Band 1, 3, 18, 19, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_11A\_n78A | E-UTRA Band 1, 3, 18, 19, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_11A\_n79A | E-UTRA Band 1, 3, 18, 19, 28, 34, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_12A\_n5A | Bands 2, 5, 12, 13, 14, 17, 24, 25, 30, 42, 43 50, 51, 71, n71, 74, n257 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Bands 4, 10, 41, 48, 66, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Band 26 | 859 | - | 869 | -27 | 1 |  |
| Band 12, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_12A\_n66A  DC\_12A\_n5A | Bands 2, 4, 5, 13, 14, 17, 24, 25, 26, 27, 29, 30, 41, 50, 51, 70, 71, n71, 74, n257 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Bands 4, 10, 48 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Bands 12, 85 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Bands 2, 5, 12, 13, 14, 17, 24, 25, 30, 42, 43 50, 51, 71, n71, 74, n257 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_18A\_n77A | E-UTRA Band 1, 3, 11, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_18A\_n78A | E-UTRA Band 1, 3, 11, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_18A\_n79A | E-UTRA Band 1, 3, 11, 21, 28, 34, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_19A\_n77A | E-UTRA Band 1, 3, 11, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_19A\_n78A | E-UTRA Band 1, 3, 11, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_19A\_n79A | E-UTRA Band 1, 3, 11, 21, 28, 34, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_20A\_n8A | E-UTRA Band 1, 3, 7, 22, 28, 31, 32, 34, 38, 42, 43, 65, 75, 76, n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_20A\_n28A  DC\_20A\_n83A | E-UTRA Band 1, 3, 7, 8, 22, 31, 32, 34, 38, 42, 43, 65, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_20A\_n51A | E-UTRA Band 1, 3, 4, 8, 17, 22, 28, 29, 31, 40, 43, 48, 65, 66, 68, 72 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 20 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 758 | - | 788 | -50 | 1 |  |
| E-UTRA Band 2, 7, 25, 32, 33, 34, 35, 36, 37, 38, 39, 41, 42, 46, 69, 70  NR Band n77, n78, n79, | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_20A\_n77A | E-UTRA Band 1, 3, 7, 8, 31, 32, 33, 34, 40, 50, 51, 65, 67, 68, 72, 74, 75, 76 |  |  |  |  |  |  |
| E-UTRA Band 20 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 38, 69 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_20A\_n78A | E-UTRA Band 1, 3, 7, 8, 22, 31, 32, 34, 38, 42, 43, 65, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_20A\_n78A  DC\_20A\_n82A\_ULSUP-TDM\_n78A,  DC\_20A\_n82A\_ULSUP-FDM\_n78A | E-UTRA Band 1, 3, 7, 8, 31, 32, 33, 34, 40, 50, 51, 65, 67, 68, 72, 74, 75, 76 |  |  |  |  |  |  |
| E-UTRA Band 20 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 38, 69 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_21A\_n77A | E-UTRA Band 1, 3, 18, 19, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_21A\_n78A | E-UTRA Band 1, 3, 18, 19, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_21A\_n79A | E-UTRA Band 1, 3, 18, 19, 21, 28, 34, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_25A\_n41A | NR band n5, n28, n66, n71  E-UTRA/NR Band 4, 10, 12, 13 , 14, 17, 24, 26, 27, 29, 30, 42, 45, 48, 70 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| NR band n2  E-UTRA/NR Band 25 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| EUTRA/NR Band 43 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_26A\_n41A | E-UTRA/NR Band 1, 2, 3, 4, 5, 10, 12, 13 , 14, 17, 24, 25, 26, 28, 29, 30, 31, 34, 39, 40, 42, 43, 48, 50, 51, 65, 66, 70, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 9, 11, 18, 19, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 20 |
| Frequency range | 1884.5 |  | 1915.7 | -41 | 0.3 | 3, 20 |
| Frequency range | 703 | - | 799 | -50 | 1 |  |
| Frequency range | 799 | - | 803 | -40 | 1 | 5 |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| DC\_26A\_n77A | E-UTRA Band 1, 3, 11, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_26A\_n78A | E-UTRA Band 1, 3, 11, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_26A\_n79A | E-UTRA Band 1, 3, 11, 21, 28, 34, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_28A\_n51A | E-UTRA Band 2, 3, 5, 7, 8, 25, 26, 31, 34, 38, 40, 41, 66, 72 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 4, 10, 20, 22, 24, 32, 42, 43, 45, 46, 65, 66, 71, 73  NR band n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 2, 10, 11 |
| Frequency range | 470 | - | 694 | -42 | 8 | 5, 18 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 15 |
| Frequency range | 662 | - | 694 | -26.2 | 6 | 5 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| DC\_28A\_n77A | E-UTRA Band 3, 5, 7, 8, 18, 19, 20, 26, 34, 39, 40, 41 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 1, 65 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 10, 11 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 10, 12 |
| Frequency range | 758 | - | 773 | -32 | 1 |  |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_28A\_n78A  DC\_28A\_n83A\_ULSUP-TDM\_n78A,  DC\_28A\_n83A\_ULSUP-FDM\_n78A | E-UTRA Band 3, 5, 7, 8, 18, 19, 20, 26, 34, 39, 40, 41 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 1, 65 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 10, 11 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 10, 12 |
| Frequency range | 758 | - | 773 | -32 | 1 |  |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_28A\_n79A | E-UTRA Band 3, 5, 8, 18, 19, 34, 39, 40, 41, 42 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 1, 65 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 10, 11 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 10, 12 |
| Frequency range | 758 | - | 773 | -32 | 1 |  |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_30A\_n5A | Bands 1, 2, 3, 4, 5, 7, 8, 10, 12, 13, 14, 17, 24, 25, 28, 29, 30, 31, 34, 38, 40, 42, 43, 45, 48, 50, 51, 65, 66, 70, 71, 73, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Band 26 | 859 | - | 869 | -27 | 1 |  |
| Bands 41, 48, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 18, 19 | FDL\_low | - | FDL\_high | -40 | 1 |  |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_30A\_n66A | Bands 2, 4, 5, 10, 12, 13, 14, 17, 24, 25, 26, 27, 29, 30, 38, 41, 66, 70, 71, n71, n257 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Bands 48 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_38A\_n78A | N/A | | | | | | |
| DC\_39A\_n78A | E-UTRA Band 1, 8, 34, 40, 41, 44, 45 or NR Band n1, n8, n34, n40, n41, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1805 | - | 1855 | -40 | 1 | 19 |
| Frequency range | 1855 | - | 1880 | -15.5 | 5 | 19 |
| NR Band n258 | FDL\_low | - | FDL\_high | -5 | 100 |  |
| DC\_39A\_n79A | E-UTRA Band 1, 8, 34, 40, 41, 44, 45 or NR Band n1, n8, n34, n40, n41, n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1805 | - | 1855 | -40 | 1 | 19 |
| Frequency range | 1855 | - | 1880 | -15.5 | 5 | 19 |
| NR Band n258 | FDL\_low | - | FDL\_high | -5 | 100 |  |
| DC\_40A\_n77A | N/A | | | | | | |
| DC\_41A\_n77A | E-UTRA Band 1, 3, 5, 8, 26, 28, 33, 34, 39, 40, 44, 45, 73, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 9, 11, 18, 19, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 20 |
| Frequency range | 1884.5 |  | 1915.7 | -41 | 0.3 | 3, 20 |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| DC\_41A\_n78A | E-UTRA Band 1, 3, 8, 34, 39, 40, 44, 45 or NR Band n1, n8, n34, n40, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | FDL\_low | - | FDL\_high | -5 | 100 |  |
| DC\_(n)41AA | E-UTRA Band 1, 2, 3, 4, 5, 8, 10, 12, 13 , 14, 17, 24, 25, 26, 27, 28, 29, 30, 34, 39, 40, 42, 44, 45, 48, 50, 51, 65, 66, 70, 71, 73, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 9, 11, 18, 19, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 20 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 20 |
| DC\_41A\_n41A | E-UTRA Band 1, 2, 3, 4, 5, 8, 10, 12, 13 , 14, 17, 24, 25, 26, 27, 28, 29, 30, 34, 39, 40, 42, 44, 45, 48, 50, 51, 65, 66, 70, 71, 73, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 9, 11, 18, 19, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 20 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 20 |
| DC\_41A\_n79A | E-UTRA Band 1, 3, 5, 8, 9, 11, 18, 19, 21, 28, 34, 40, 42, 44, 45, 65 or NR Band n1, n3, n8, n28, n34, n40, n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| NR Band n257, n258 | FDL\_low | - | FDL\_high | -5 | 100 |  |
| DC\_42A\_n51A | E-UTRA Band 3, 8, 20, 25, 30, 31, 34, 39, 41, 73 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 1, 2, 4, 5, 6, 7, 10, 12, 13, 14, 17, 23, 24, 26, 27, 28, 29, 32, 38, 40, 44, 46, 65, 66, 67, 68, 70, 71 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_42A\_n77A | N/A | | | | | | |
| DC\_42A\_n78A | N/A | | | | | | |
| DC\_42A\_n79A | N/A | | | | | | |
| DC\_66A\_n5A | Bands 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 13, 14, 17, 24, 25, 28, 29, 30, 34, 38, 40, 43, 45, 50, 51, 65, 66, 70, 71, n71, 85, n257 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 26 | 859 | - | 869 | -27 | 1 |  |
| Bands 41, 42, 48, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 18, 19 | FDL\_low | - | FDL\_high | -40 | 1 |  |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_66A\_n71A | E-UTRA Band 4, 5, 7,10, 13, 14, 17, 22, 24, 26, 27, 29, 30, 43,50, 51, 66, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25, 41, 42, 48, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 71 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_66\_n78 | E-UTRA Band 1, 3, 5, 7, 8, 20, 26, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_66A\_n78A,  DC\_66A\_n86A\_ULSUP-TDM\_n78A,  DC\_66A\_n86A\_ULSUP-FDM\_n78A | E-UTRA Band 1, 3, 5, 7, 8, 20, 26, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| NOTE 1: FDL\_low and FDL\_high refer to each E-UTRA frequency band specified in Table 5.5-1  NOTE 2: As exceptions, measurements with a level up to the applicable requirements defined in Table 6.6.3.1-2 are permitted for each assigned E-UTRA carrier used in the measurement due to 2nd, 3rd, 4th or 5th harmonic spurious emissions. Due to spreading of the harmonic emission the exception is also allowed for the first 1 MHz frequency range immediately outside the harmonic emission on both sides of the harmonic emission. This results in an overall exception interval centred at the harmonic emission of (2MHz + N x LCRB x 180kHz), where N is 2, 3, 4, 5 for the 2nd, 3rd, 4th or 5th harmonic respectively. The exception is allowed if the measurement bandwidth (MBW) totally or partially overlaps the overall exception interval.  NOTE 3: Applicable when co-existence with PHS system operating in 1884.5 -1915.7MHz  NOTE 4: Applicable only when the assigned E-UTRA carrier is confined within 824 MHz and 849 MHz for UE category M1, M2 and UE category NB1 and NB2.  NOTE 5: These requirements also apply for the frequency ranges that are less than FOOB (MHz) in Table 6.6.3.1-1 and Table 6.6.3.1A-1 from the edge of the channel bandwidth.  NOTE 6: This requirement is applicable for any channel bandwidths within the range 2500 - 2570 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 2560.5 - 2562.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 2552 - 2560 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to 54 RB.  NOTE 7: For these adjacent bands, the emission limit could imply risk of harmful interference to UE(s) operating in the protected operating band.  NOTE 8: This requirement is applicable for any channel bandwidths within the range 3300 - 3800 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range TBD – 3792.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range TBD - 3790 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to TBD RB.  NOTE 9: This requirement is applicable for any channel bandwidths within the range 1920 - 1980 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 1927.5 - 1929.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 1930 - 1938 MHz the requirement is applicable only for an uplink  NOTE 10: Applicable when the assigned E-UTRA carrier is confined within 718 MHz and 748 MHz and when the channel bandwidth used is 5 or 10 MHz.  NOTE 11: As exceptions, measurements with a level up to the applicable requirement of -36 dBm/MHz is permitted for each assigned E-UTRA carrier used in the measurement due to 2nd harmonic spurious emissions. An exception is allowed if there is at least one individual RB within the transmission bandwidth (see Figure 5.6-1) for which the 2nd harmonic totally or partially overlaps the measurement bandwidth (MBW).  NOTE 12: As exceptions, measurements with a level up to the applicable requirement of -38 dBm/MHz is permitted for each assigned E-UTRA carrier used in the measurement due to 3rd harmonic spurious emissions. An exception is allowed if there is at least one individual RB within the transmission bandwidth (see Figure 5.6-1) for which the 3rd harmonic totally or partially overlaps the measurement bandwidth (MBW).  NOTE 13: This requirement is applicable only for the following cases: - for carriers of 5 MHz channel bandwidth when carrier centre frequency (Fc) is within the range 902.5 MHz ≤ Fc < 907.5 MHz with an uplink transmission bandwidth less than or equal to 20 RB - for carriers of 5 MHz channel bandwidth when carrier centre frequency (Fc) is within the range 907.5 MHz ≤ Fc ≤ 912.5 MHz without any restriction on uplink transmission bandwidth. - for carriers of 10 MHz channel bandwidth when carrier centre frequency (Fc) is Fc = 910 MHz with an uplink transmission bandwidth less than or equal to 32 RB with RBstart > 3.  NOTE14: This requirement applies for 5, 10, 15 and 20 MHz E-UTRA channel bandwidth allocated within 1744.9MHz and 1784.9MHz.  NOTE 15: This requirement is applicable for 5 and 10 MHz E-UTRA channel bandwidth allocated within 718-728MHz. For carriers of 10 MHz bandwidth, this requirement applies for an uplink transmission bandwidth less than or equal to 30 RB with RBstart > 1 and RBstart<48.  NOTE 16: Applicable when NS\_05 in section 6.6.3.3.1 is signalled by the network.  NOTE 17: This requirement is applicable for any channel bandwidths within the range 1920 - 1980 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 1927.5 - 1929.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 1930 - 1938 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to 54 RB.  NOTE 18: This requirement is applicable in the case of a 10 MHz E-UTRA carrier confined within 703 MHz and 733 MHz, otherwise the requirement of -25 dBm with a measurement bandwidth of 8 MHz applies.  NOTE 19: This requirement is only applicable for E-UTRA carriers with bandwidth confined within 1885-1920 MHz (requirement for carriers with at least 1RB confined within 1880 - 1885 MHz is not specified). This requirement applies for an uplink transmission bandwidth less than or equal to 54 RB for E-UTRA carriers of 15 MHz bandwidth when carrier center frequency is within the range 1892.5 - 1894.5 MHz and for E-UTRA carriers of 20 MHz bandwidth when carrier center frequency is within the range 1895 - 1903 MHz.  NOTE 20: This requirement applies when the E-UTRA and NR carriers are confined within 2545-2575MHz or 2595-2645MHz and the channel bandwidth is 10 or 20 MHz | | | | | | | |

#### 6.5B.3.4 Inter-band EN-DC including FR2

< OTA requirements >

< Editor’s note: Chapter numbers to be updated >

The general spurious emissions requirements specified in sub-clause 6.6.3.1 of [4], sub-clause 6.5.3.1 of [2] and [3] apply for each component carrier.

##### 6.5B.3.4.1 Spurious emission band UE co-existence

< Editor’s note: Chapter numbers to be updated >

This clause specifies the requirements for the specified EN-DC, for coexistence with protected bands. The requirements in Table 6.5B.3.4.1-1 apply on each component carrier separately.

Table 6.5B.3.4.1-1: Requirements

| **EN-DC Configuration** | **Spurious emission** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Protected band** | **Frequency range (MHz)** | | | **Maximum Level (dBm)** | **MBW (MHz)** | **NOTE** |
| DC\_1A\_n257A | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 21, 26, 28, 34, 40, 41, 42, 65, n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1880 | - | 1895 | -40 | 1 | 5, 9 |
| Frequency range | 1895 | - | 1915 | -15.5 | 5 | 5, 7, 9 |
| Frequency range | 1915 | - | 1920 | +1.6 | 5 | 5, 7, 9 |
| DC\_2A\_n257A | Band 4, 5, 10, 12, 13, 14, 17, 24, 26, 27, 28, 29, 30, 41, 42, 48, 50, 51, 66, 70, 71, 74, 74, n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Band 2, 25 | FDL\_low | - | FDL\_high | -50 | 1 | Table 6.5.3.2-1 |
| Band 43 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_2A\_n260A | Bands 4, 5, 12, 13, 14, 17, 24, 26, 29, 30, 41, 42, 48, 66, 70, 71, n71, n257 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Bands 48 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_3A\_n257A | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 21, 26, 28, 34, 39, 40, 41, 65, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42, n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_3A\_n258A | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 21, 26, 28, 34, 39, 40, 41, 65, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42, n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_5A\_n257A | E-UTRA Band 1, 2, 3, 4, 5, 7, 8, 10, 12, 13, 14, 17, 24, 25, 28, 29, 30, 31, 34, 38, 40, 42, 43, 45, 48, 50, 51, 65, 66, 70, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 26 | 859 | - | 869 | -27 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 4 |
| E-UTRA Band 41 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 18, 19 | FDL\_low | - | FDL\_high | -40 | 1 | 4 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 4 |
| DC\_5A\_n260A | Band 1, 2, 3, 4, 5, 7, 8, 10, 12, 13, 14, 17, 24, 25, 28, 29, 30, 31, 34, 38, 40, 42, 43, 45, 48, 50, 51, 65, 66, 70, 71, 74, n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Band 26 | FDL\_low | - | FDL\_high | -27 | 1 |  |
| Band 41 | FDL\_low | - | FDL\_high | -50 | 1 | Table 6.5.3.2-1 |
| DC\_5A\_n261A | Band 1, 2, 3, 4, 5, 7, 8, 10, 12, 13, 14, 17, 24, 25, 28, 29, 30, 31, 34, 38, 40, 42, 43, 45, 48, 50, 51, 65, 66, 70, 71, 74, n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| 26 | FDL\_low | - | FDL\_high | -27 | 1 |  |
| 41 | FDL\_low | - | FDL\_high | -50 | 1 | Table 6.5.3.2-1 |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 7, 17 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 7, 17 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 21 |
| E-UTRA Band 1, 4, 10, 12, 13, 14, 17, 20, 22, 23, 27, 28, 29, 42, 43, 44, 46, 65, 66, 67, 68  NR Band n77, n78, n79, | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_7A\_n257A | E-UTRA Band 1, 3, 5, 7, 8, 26, 28, n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 |  |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 |  |
| Frequency range | 2595 | - | 2620 | -40 | 1 |  |
| DC\_7A\_n258A | E-UTRA Band 1, 3, 5, 7, 8, 26, 28, n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 |  |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 |  |
| Frequency range | 2595 | - | 2620 | -40 | 1 |  |
| DC\_8A\_n257A | E-UTRA Band 1, 28, 34, 38, 69, 74, n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3, 7, 41, 42, 43 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 8 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 13 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 13 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 13 |
| DC\_8A\_n258A | E-UTRA Band 1,8, 20, 28, 34, 39, 40,65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3, 7,41,42,n78,n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 13 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 13 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_11A\_n257A | E-UTRA Band 1, 3, 18, 19, 28, 34, 42, 65, n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_12A\_n260A | E-UTRA Band 2, 5, 13, 14, 17, 24, 25, 26, 30, 41, 48, 71 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 4, 66, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_13A\_n257A | Band 2, 4, 5, 10, 12, 13, 17, 25, 26, 27, 29, 41, 48, 50, 51, 66, 70, 71, 74, n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Band 14 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Band 24, 30 | FDL\_low | - | FDL\_high | -50 | 1 | Table 6.5.3.2-1 |
| DC\_18A\_n257A | E-UTRA Band 1, 3, 11, 21, 28, 34, 42, 65, n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_19A\_n257A | E-UTRA Band 1, 3, 11, 21, 28, 34, 42, 65, n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_20A\_n258A | E-UTRA Band 1, 3, 7, 8, 22, 31, 32, 33, 34, 40, 43, 50, 51, 65, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 20 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 38, 42, 52, 69 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 758 | - | 788 | -50 | 1 |  |
| DC\_21A\_n257A | E-UTRA Band 1, 3, 18, 19, 21, 28, 34, 42, 65, n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_26A\_n257A | E-UTRA Band 1, 3, 11, 21, 28, 34, 42, 65, n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_28A\_n257A | E-UTRA Band 3, 5, 8, 18, 19, 34, 39, 40, 41 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 1, 65 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 10, 11 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 10, 12 |
| Frequency range | 758 | - | 773 | -32 | 1 |  |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_28A\_n258A | E-UTRA Band 3, 5, 8, 18, 19, 34, 39, 40, 41 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 1, 65 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 10, 11 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 10, 12 |
| Frequency range | 758 | - | 773 | -32 | 1 |  |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_30A\_n260A | E-UTRA Band 2, 4, 5, 12, 13, 14, 17, 24, 25, 26, 29, 41, 48, 66, 70, 71 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_39A\_n258A | Band 1, 8, 34, 40, 41, 44, 45 or NR Band n1, n8, n34, n40, n41, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1805 | - | 1855 | -40 | 1 | 19 |
| Frequency range | 1855 | - | 1880 | -15.5 | 5 | 19 |
| DC\_41A\_n257A | E-UTRA Band 1, 3, 5, 8, 9, 11, 18, 19, 21, 26, 28, 33, 34, 39, 40, 44, 45, 50, 51, 65, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1839.9 |  | 1879.9 | -50 | 1 |  |
| Frequency range | 1884.5 |  | 1915.7 | -41 | 0.3 | 3 |
| DC\_41A\_n258A | E-UTRA Band 1, 3, 8, 34, 39, 40, 44, 45 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| NR Band n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_42A\_n257A | E-UTRA Band 1, 3, 5, 8, 11, 18, 19, 21, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_48A\_n257A | Band 2, 4, 5, 12, 13, 14, 17, 24, 25, 26, 29, 30, 41, 50, 51, 66, 70, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_48A\_n260A | Band 2, 4, 5, 12, 13, 14, 17, 24, 25, 26, 29, 30, 41, 50, 51, 66, 70, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_66A\_n257A | Band 2, 4, 5, 7, 10, 12, 13, 14, 17, 24, 25, 26, 27, 28, 29, 30, 38, 41, 43, 50, 51, 66, 70, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Band 42, 48 | FDL\_low | - | FDL\_high | -50 | 1 | Table 6.5.3.2-1 of TS38.101 |
| DC\_66A\_n260A | Bands 2, 4, 5, 12, 13, 14, 17, 24, 25, 26, 29, 30, 41, 48, 66, 70, 71, n71, n257 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Bands 48 | FDL\_low | - | FDL\_high | -50 | 1 | 3 |
| DC\_66A\_n261A | Band 2, 4, 5, 7, 10, 12, 13, 14, 17, 24, 25, 26, 27, 28, 29, 30, 38, 41, 43, 50, 51, 66, 70, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42, 48 | FDL\_low | - | FDL\_high | -50 | 1 | Table 6.5.3.2-1 of TS38.101 |
| NOTE 1: FDL\_low and FDL\_high refer to each E-UTRA frequency band specified in Table 5.5-1  NOTE 2: As exceptions, measurements with a level up to the applicable requirements defined in Table 6.6.3.1-2 are permitted for each assigned E-UTRA carrier used in the measurement due to 2nd, 3rd, 4th or 5th harmonic spurious emissions. Due to spreading of the harmonic emission the exception is also allowed for the first 1 MHz frequency range immediately outside the harmonic emission on both sides of the harmonic emission. This results in an overall exception interval centred at the harmonic emission of (2MHz + N x LCRB x 180kHz), where N is 2, 3, 4, 5 for the 2nd, 3rd, 4th or 5th harmonic respectively. The exception is allowed if the measurement bandwidth (MBW) totally or partially overlaps the overall exception interval.  NOTE 3: Applicable when co-existence with PHS system operating in 1884.5 -1915.7MHz  NOTE 4: Applicable only when the assigned E-UTRA carrier is confined within 824 MHz and 849 MHz for UE category M1, M2 and UE category NB1 and NB2.  NOTE 5: These requirements also apply for the frequency ranges that are less than FOOB (MHz) in Table 6.6.3.1-1 and Table 6.6.3.1A-1 from the edge of the channel bandwidth.  NOTE 6: This requirement is applicable for any channel bandwidths within the range 2500 - 2570 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 2560.5 - 2562.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 2552 - 2560 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to 54 RB.  NOTE 7: For these adjacent bands, the emission limit could imply risk of harmful interference to UE(s) operating in the protected operating band.  NOTE 8: This requirement is applicable for any channel bandwidths within the range 3300 - 3800 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range TBD – 3792.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range TBD - 3790 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to TBD RB.  NOTE 9: This requirement is applicable for any channel bandwidths within the range 1920 - 1980 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 1927.5 - 1929.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 1930 - 1938 MHz the requirement is applicable only for an uplink  NOTE 10: Applicable when the assigned E-UTRA carrier is confined within 718 MHz and 748 MHz and when the channel bandwidth used is 5 or 10 MHz.  NOTE 11: As exceptions, measurements with a level up to the applicable requirement of -36 dBm/MHz is permitted for each assigned E-UTRA carrier used in the measurement due to 2nd harmonic spurious emissions. An exception is allowed if there is at least one individual RB within the transmission bandwidth (see Figure 5.6-1) for which the 2nd harmonic totally or partially overlaps the measurement bandwidth (MBW).  NOTE 12: As exceptions, measurements with a level up to the applicable requirement of -38 dBm/MHz is permitted for each assigned E-UTRA carrier used in the measurement due to 3rd harmonic spurious emissions. An exception is allowed if there is at least one individual RB within the transmission bandwidth (see Figure 5.6-1) for which the 3rd harmonic totally or partially overlaps the measurement bandwidth (MBW).  NOTE 13: This requirement is applicable only for the following cases: - for carriers of 5 MHz channel bandwidth when carrier centre frequency (Fc) is within the range 902.5 MHz ≤ Fc < 907.5 MHz with an uplink transmission bandwidth less than or equal to 20 RB - for carriers of 5 MHz channel bandwidth when carrier centre frequency (Fc) is within the range 907.5 MHz ≤ Fc ≤ 912.5 MHz without any restriction on uplink transmission bandwidth. - for carriers of 10 MHz channel bandwidth when carrier centre frequency (Fc) is Fc = 910 MHz with an uplink transmission bandwidth less than or equal to 32 RB with RBstart > 3.  NOTE14: This requirement applies for 5, 10, 15 and 20 MHz E-UTRA channel bandwidth allocated within 1744.9MHz and 1784.9MHz.  NOTE 15: This requirement is applicable for 5 and 10 MHz E-UTRA channel bandwidth allocated within 718-728MHz. For carriers of 10 MHz bandwidth, this requirement applies for an uplink transmission bandwidth less than or equal to 30 RB with RBstart > 1 and RBstart<48.  NOTE 16: Applicable when NS\_05 in section 6.6.3.3.1 is signalled by the network.  NOTE 17: This requirement is applicable for any channel bandwidths within the range 1920 - 1980 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 1927.5 - 1929.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 1930 - 1938 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to 54 RB.  NOTE 18: This requirement is applicable in the case of a 10 MHz E-UTRA carrier confined within 703 MHz and 733 MHz, otherwise the requirement of -25 dBm with a measurement bandwidth of 8 MHz applies.  NOTE 19: This requirement is only applicable for E-UTRA carriers with bandwidth confined within 1885-1920 MHz (requirement for carriers with at least 1RB confined within 1880 - 1885 MHz is not specified). This requirement applies for an uplink transmission bandwidth less than or equal to 54 RB for E-UTRA carriers of 15 MHz bandwidth when carrier center frequency is within the range 1892.5 - 1894.5 MHz and for E-UTRA carriers of 20 MHz bandwidth when carrier center frequency is within the range 1895 - 1903 MHz. | | | | | | | |

#### 6.5B.3.5 Inter-band EN-DC including both FR1 and FR2

<OTA requirements >

< Editor’s note: Chapter numbers to be updated >

The general spurious emissions requirements specified in sub-clause 6.6.3.1 of [4], sub-clause 6.5.3.1 of [2] and [3] apply for each component carrier.

##### 6.5B.3.5.1 Spurious emission band UE co-existence

< Editor’s note: Chapter numbers to be updated >

This clause specifies the requirements for the specified EN-DC, for coexistence with protected bands. The requirements in Table 6.5B.3.4.1-1 apply on each component carrier with all component carriers are active.

Table 6.5B.3.5.1-1: Requirements

| **E-UTRA and NR DC Configuration** | **Spurious emission** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Protected band** | **Frequency range (MHz)** | | | **Maximum Level (dBm)** | **MBW (MHz)** | **NOTE** |
| DC\_1A\_n77A-n257A | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 21, 26, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1880 | - | 1895 | -40 | 1 | 5, 9 |
| Frequency range | 1895 | - | 1915 | -15.5 | 5 | 5, 7, 9 |
| Frequency range | 1915 | - | 1920 | +1.6 | 5 | 5, 7, 9 |
| DC\_1A\_n78A-n257 | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 21, 26, 28, 34, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1880 | - | 1895 | -40 | 1 | 5, 9 |
| Frequency range | 1895 | - | 1915 | -15.5 | 5 | 5, 7, 9 |
| Frequency range | 1915 | - | 1920 | +1.6 | 5 | 5, 7, 9 |
| DC\_1A\_n79A-n257A | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 21, 26, 28, 34, 40, 41, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1880 | - | 1895 | -40 | 1 | 5, 9 |
| Frequency range | 1895 | - | 1915 | -15.5 | 5 | 5, 7, 9 |
| Frequency range | 1915 | - | 1920 | +1.6 | 5 | 5, 7, 9 |
| DC\_3A\_n77A-n257 | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 21, 26, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_3A\_n78A-n257A | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 21, 26, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_3A\_n79A-n257A | E-UTRA Band 1, 3, 5, 8, 11, 18, 19, 21, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_19A\_n77A-n257A | E-UTRA Band 1, 3, 11, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_19A\_n78A-n257A | E-UTRA Band 1, 3, 11, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_19A\_n79A-n257A | E-UTRA Band 1, 3, 11, 21, 28, 34, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| NOTE 1: FDL\_low and FDL\_high refer to each E-UTRA frequency band specified in Table 5.5-1  NOTE 2: As exceptions, measurements with a level up to the applicable requirements defined in Table 6.6.3.1-2 are permitted for each assigned E-UTRA carrier used in the measurement due to 2nd, 3rd, 4th or 5th harmonic spurious emissions. Due to spreading of the harmonic emission the exception is also allowed for the first 1 MHz frequency range immediately outside the harmonic emission on both sides of the harmonic emission. This results in an overall exception interval centred at the harmonic emission of (2MHz + N x LCRB x 180kHz), where N is 2, 3, 4, 5 for the 2nd, 3rd, 4th or 5th harmonic respectively. The exception is allowed if the measurement bandwidth (MBW) totally or partially overlaps the overall exception interval.  NOTE 3: Applicable when co-existence with PHS system operating in 1884.5 -1915.7MHz  NOTE 4: Applicable only when the assigned E-UTRA carrier is confined within 824 MHz and 849 MHz for UE category M1, M2 and UE category NB1 and NB2.  NOTE 5: These requirements also apply for the frequency ranges that are less than FOOB (MHz) in Table 6.6.3.1-1 and Table 6.6.3.1A-1 from the edge of the channel bandwidth.  NOTE 6: This requirement is applicable for any channel bandwidths within the range 2500 - 2570 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 2560.5 - 2562.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 2552 - 2560 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to 54 RB.  NOTE 7: For these adjacent bands, the emission limit could imply risk of harmful interference to UE(s) operating in the protected operating band.  NOTE 8: This requirement is applicable for any channel bandwidths within the range 3300 - 3800 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range TBD – 3792.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range TBD - 3790 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to TBD RB.  NOTE 9: This requirement is applicable for any channel bandwidths within the range 1920 - 1980 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 1927.5 - 1929.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 1930 - 1938 MHz the requirement is applicable only for an uplink  NOTE 10: Applicable when the assigned E-UTRA carrier is confined within 718 MHz and 748 MHz and when the channel bandwidth used is 5 or 10 MHz.  NOTE 11: As exceptions, measurements with a level up to the applicable requirement of -36 dBm/MHz is permitted for each assigned E-UTRA carrier used in the measurement due to 2nd harmonic spurious emissions. An exception is allowed if there is at least one individual RB within the transmission bandwidth (see Figure 5.6-1) for which the 2nd harmonic totally or partially overlaps the measurement bandwidth (MBW).  NOTE 12: As exceptions, measurements with a level up to the applicable requirement of -38 dBm/MHz is permitted for each assigned E-UTRA carrier used in the measurement due to 3rd harmonic spurious emissions. An exception is allowed if there is at least one individual RB within the transmission bandwidth (see Figure 5.6-1) for which the 3rd harmonic totally or partially overlaps the measurement bandwidth (MBW).  NOTE 13: This requirement is applicable only for the following cases: - for carriers of 5 MHz channel bandwidth when carrier centre frequency (Fc) is within the range 902.5 MHz ≤ Fc < 907.5 MHz with an uplink transmission bandwidth less than or equal to 20 RB - for carriers of 5 MHz channel bandwidth when carrier centre frequency (Fc) is within the range 907.5 MHz ≤ Fc ≤ 912.5 MHz without any restriction on uplink transmission bandwidth. - for carriers of 10 MHz channel bandwidth when carrier centre frequency (Fc) is Fc = 910 MHz with an uplink transmission bandwidth less than or equal to 32 RB with RBstart > 3.  NOTE14: This requirement applies for 5, 10, 15 and 20 MHz E-UTRA channel bandwidth allocated within 1744.9MHz and 1784.9MHz.  NOTE 15: This requirement is applicable for 5 and 10 MHz E-UTRA channel bandwidth allocated within 718-728MHz. For carriers of 10 MHz bandwidth, this requirement applies for an uplink transmission bandwidth less than or equal to 30 RB with RBstart > 1 and RBstart<48.  NOTE 16: Applicable when NS\_05 in section 6.6.3.3.1 is signalled by the network.  NOTE 17: This requirement is applicable for any channel bandwidths within the range 1920 - 1980 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 1927.5 - 1929.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 1930 - 1938 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to 54 RB.  NOTE 18: This requirement is applicable in the case of a 10 MHz E-UTRA carrier confined within 703 MHz and 733 MHz, otherwise the requirement of -25 dBm with a measurement bandwidth of 8 MHz applies.  NOTE 19: This requirement is only applicable for E-UTRA carriers with bandwidth confined within 1885-1920 MHz (requirement for carriers with at least 1RB confined within 1880 - 1885 MHz is not specified). This requirement applies for an uplink transmission bandwidth less than or equal to 54 RB for E-UTRA carriers of 15 MHz bandwidth when carrier center frequency is within the range 1892.5 - 1894.5 MHz and for E-UTRA carriers of 20 MHz bandwidth when carrier center frequency is within the range 1895 - 1903 MHz. | | | | | | | |

### 6.5B.4 Additional spurious emissions

#### 6.5B.4.1 General

These requirements are specified in terms of an additional spectrum emission requirement. Additional spurious emission requirements are signalled by the network to indicate that the UE shall meet an additional requirement for a specific deployment scenario as part of the cell handover/broadcast message.

NOTE: For measurement conditions at the edge of each frequency range, the lowest frequency of the measurement position in each frequency range should be set at the lowest boundary of the frequency range plus MBW/2. The highest frequency of the measurement position in each frequency range should be set at the highest boundary of the frequency range minus MBW/2. MBW denotes the measurement bandwidth defined for the protected band.

#### 6.5B.4.1.1 Minimum requirement (network signalled value "NS\_04")

When "NS 04" is indicated in the cell, the power of any UE emission shall not exceed the levels specified in Table 6.5B.4.1.1-1. This requirement also applies for the frequency ranges that are less than FOOB (MHz) in Table 6.6.3.1-1 from the edge of the channel bandwidth.

Table 6.5B.4.1.1 -1: Additional requirements

|  |  |  |
| --- | --- | --- |
| Frequency band  (MHz) | Channel bandwidth / Spectrum emission limit (dBm) | Measurement bandwidth |
| 2495 ≤ f < 2496 | -13 | 1% of Channel BW for contiguous BW up to 100 MHz,  1 MHz for contiguous BW > 100 MHz |
| 2490.5 ≤ f < 2495 | -13 | 1 MHz |
| 0 < f < 2490.5 | -25 | 1 MHz |

# 7 Receiver characteristics

## 7.1 General

Unless otherwise stated the receiver characteristics are specified at the antenna connector(s) of the UE for the bands operating on frequency range 1 and over the air of the UE for the bands operating on frequency range 2. The requirements for frequency range 1 and frequency range 2 can be verified separately. For the carrier in frequency range 1, requirements can be verified with NR FR2 link disabled. For the carrier in frequency range 2, requirements can be verified in OTA mode with LTE connecting to the network by OTA without calibration.

The requirements defined in this clause are the extra requirements compared with the single carrier requirements defined in [2] and [3].

Unless otherwise stated, the UL and DL reference measurement channels are the same with the configurations specified in [2] and [3].

## 7.2 Diversity characteristics

## 7.3 Reference sensitivity

## 7.3A Reference sensitivity for CA

### 7.3A.1 General

<Editor’s note: Table number to be updated>

For NR CA operation NR single carrier REFSENS requirements defined in [2] and [3] apply to all downlink bands part of NR CA configurations listed in Tables 5.2.2.1-1 unless sensitivity degradation is allowed as defined in clause 7.3A.

### 7.3A.2 Reference sensitivity power level for CA

### 7.3A.3 ΔRIB,c for CA

<Editor’s note: Chapter number to be updated>

For the UE which supports inter-band NR CA configuration, the minimum requirement for reference sensitivity in Table 7.3.1-1 and Table 7.3.1-1a in TS 36.101, Table 7.3-1 in TS 38.101-1 and Table 7.3.1-1 in TS 38.101-2 shall be increased by the amount given in ΔRIB,c in Tables below. Unless otherwise stated, ΔRIB,c is set to zero.

#### 7.3A.3.1 ΔRIB,c for Inter-band CA between FR1 and FR2

Table 7.3A.3.1-1: ΔRIB,c due to NR CA (two bands)

|  |  |  |
| --- | --- | --- |
| Inter-band EN-DC configuration | NR Band | ΔRIB,c (dB) |
|  |  |  |
|  |  |

### 7.3A.4 Reference sensitivity exceptions due to UL harmonic interference for CA

Sensitivity degradation is allowed for a band in frequency range 2 if it is impacted by UL harmonic interference from the band in frequency range 1 of the same CA configuration. Reference sensitivity exceptions are specified in Table 7.3A.4-1 with uplink configuration specified in Table 7.3A.4-2.

Table 7.3A.4-1: Reference sensitivity exceptions due to UL harmonic for NR CA of FR1+FR2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| UL Band | DL Band | 50 MHz (dBm) | 100 MHz (dBm) | 200 MHz (dBm) | 400 MHz (dBm) |
| X | Y |  |  |  |  |

Table 7.3A.2-2: Uplink configuration for reference sensitivity exceptions due to UL harmonic interference for NR CA of FR1+FR2

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UL band | DL band | 5 MHz  (dBm) | 10 MHz  (dBm) | 15 MHz  (dBm) | 20 MHz  (dBm) | 25 MHz  (dBm) | 40 MHz  (dBm) | 50 MHz  (dBm) | 60 MHz  (dBm) | 80 MHz  (dBm) | 90 MHz  (dBm) | 100 MHz  (dBm) |
| X | Y |  |  |  |  |  |  |  |  |  |  |  |

## 7.3B Reference sensitivity level for DC

### 7.3B.1 General

<Editor’s note: Table number to be updated>

For EN-DC, E-UTRA and NR single carrier REFSENS requirements defined in [2], [3] and [4] apply to all downlink bands of EN-DC configurations listed in TablesTBD unless sensitivity degradation is allowed as defined in clause 7.3.2.1 and 7.3.2.2.

### 7.3B.2 Reference sensitivity for EN-DC

#### 7.3B.2.1 Intra-band contiguous EN-DC

For intra-band contiguous EN-DC configurations, the reference sensitivity power level REFSENS is the minimum mean power applied to each one of the UE antenna ports at which the throughput for the carrier(s) of the E-UTRA and NR CGs shall meet or exceed the requirements for the specified E-UTRA and NR reference measurement channels.

For each CG, the reference sensitivity is specified as a maximum allowed degradation MSD of the reference sensitivity level as specified for the applicable carrier bandwidths in accordance with [4] for the E-UTRA CG and [2] for the NR CG.

For DC configurations of DC bandwidth class B, the throughput on each of the CGs shall be ≥ 95% of the maximum throughput of the respective reference measurement channels as specified in TBD with parameters specified in Table 7.3B.2.1-1.

Table 7.3B.2.1-1: Reference sensitivity (MSD) for intra-band DC bandwidth class

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| MSD / DC bandwidth class B | | | | | | | |
| DC configuration | E-UTRA/NR band | FC (UL)  (MHz) | Channel bandwidth  (MHz) | UL  allocation (LCRB) | FC (DL)  (MHz) | MSD  (dB) | Duplex mode |
| DC\_(n)71B | 71 | 665.5 | 5 | 5 (RBend =24) | 619.5 | 0 | FDD |
| n71 | 675.5 | 15 | 15 (RBstart = 0) | 629.5 | 1.8 |
| DC\_(n)71B | 71 | 670.5 | 15 | 15 (RBend = 74) | 624.5 | 0 |
| n71 | 680.5 | 5 | 5 (RBstart = 0) | 634.5 | 1.6 |
| DC\_(n)71B | 71 | 668 | 10 | 10 (RBend = 49) | 622 | 0 |
| n71 | 678 | 10 | 10 (RBstart = 0) | 632 | 1.7 |
| DC\_(n)71B | 71 | 668 | 10 | 10 (RBend = 0) | 622 | 17.2 |
| n71 | 678 | 10 | 10 (RBstart = 51) | 632 | 29.4 |

#### 7.3B.2.2 Intra-band non-contiguous EN-DC

For DC\_3A\_n3A intra-band non-contiguous EN-DC combination, only single switched UL is supported in rel.15, no MSD is required.

#### 7.3B.2.3 Inter-band EN-DC within FR1

Reference sensitivity exceptions are specified for the condition when there is uplink transmission only in the aggressor band.

<Editor’s note: FFS how to clarify the issues of 1Tx may also exist for 2Tx mode, for example harmonic, etc.>

##### 7.3B.2.3.1 Reference sensitivity exceptions due to UL harmonic interference for EN-DC in NR FR1

Sensitivity degradation is allowed for a band if it is impacted by UL harmonic interference from another band part of the same DC configuration. Reference sensitivity exceptions are specified in Table 7.3B.2.3.1-1 with uplink configuration specified in Table 7.3B.2.3.1-2.

Table 7.3B.2.3.1-1: MSD due to UL harmonic for EN-DC in NR FR1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UL band | DL band | 5 MHz  (dB) | 10 MHz  (dB) | 15 MHz  (dB) | 20 MHz  (dB) | 25 MHz  (dB) | 30 MHz (dB) | 40 MHz  (dBm) | 50 MHz  (dBm) | 60 MHz  (dBm) | 80 MHz  (dBm) | 90 MHz  (dBm) | 100 MHz  (dBm) |
| 1, 3 | n771,2 | 27.1 | 23.9 | 22.1 | 20.9 |  |  | 17.9 |  |  |  |  |  |
| n773 | 1.9 | 1.1 | 0.8 | 0.3 |  |  |  |  |  |  |  |  |
| 2 | n781,2 | 27.1 | 23.9 | 22.1 | 20.9 |  |  | 17.9 |  |  |  |  |  |
| n783 | 1.9 | 1.1 | 0.8 | 0.3 |  |  |  |  |  |  |  |  |
| 3 | n781,2 | 27.1 | 23.9 | 22.1 | 20.9 |  |  | 17.9 |  |  |  |  |  |
| n783 | 1.9 | 1.1 | 0.8 | 0.3 |  |  |  |  |  |  |  |  |
| 8 | n776,7  n786,7 | NA | 10.8 | 9.1 | 8 | 5.1 | 4.2 | 3.5 | 2.3 | 1.4 |  |  |  |
| 8 | n794,5 |  |  |  |  |  |  | 6.8 | 6.2 | 5.6 | 4.9 |  | 4.4 |
| 18， 19 | n774,5 |  | 10.4 | 8.9 | 7.8 |  |  | 4.7 | 3.7 | 3 | 1.7 |  | 0.7 |
| 28 | n774,5 n784,5 |  | 10.4 | 8.9 | 7.8 |  |  | 4.7 | 3.7 | 3 | 1.7 | 1.2 | 0.7 |
| 20 | n776,7  n786,7 |  | 10.8 | 9.1 | 8 |  |  | 6 |  |  |  |  |  |
| 26 | n41 | NA | 10.3 | 8.4 | 7.4 |  |  | 5 | 4.3 | 3.9 | 3.1 | 2.7 |  |
| 26 | n776,7  n786,7 |  | 10.8 | 9.1 | 8 |  |  | 6 |  |  |  |  |  |
| 26 | n774,5 |  | 10.4 | 8.9 | 7.8 |  |  | 4.7 | 3.7 | 3 | 1.7 |  | 0.7 |
| n28 | 18,9,10 | 10.2 | 7.6 | 6.2 | 5.3 |  |  |  |  |  |  |  |  |
| n751,2 | 28.1 | 25.3 | 24.0 | 22.8 |  |  |  |  |  |  |  |  |
| n71 | 211 | 4.6 | 1.0 | 0.7 | 0.6 |  |  |  |  |  |  |  |  |
|  | 212 | 1.7 | 1.0 | 0.7 | 0.6 |  |  |  |  |  |  |  |  |
| 66 | n781,2 |  | 23.9 | 22.1 | 20.9 |  |  | 17.9 |  |  |  |  |  |
| n783 |  | 1.1 | 0.8 | 0.3 |  |  |  |  |  |  |  |  |
| NOTE 1: These requirements apply when there is at least one individual RE within the uplink transmission bandwidth of the aggressor (lower) band for which the 2nd transmitter harmonic is within the downlink transmission bandwidth of a victim (higher) band.  NOTE 2: The requirements should be verified for UL EARFCN or NR ARFCN of the aggressor (lower) band (superscript LB) such that in MHz and  with carrier frequency in the victim (higher) band in MHz and the channel bandwidth configured in the lower band.  NOTE 3: The requirements are only applicable to channel bandwidths with a carrier frequency at  MHz offset from  in the victim (higher band) with , whereandare the channel bandwidths configured in the aggressor (lower) and victim (higher) bands in MHz, respectively.  NOTE 4: These requirements apply when there is at least one individual RE within the uplink transmission bandwidth of the aggressor (lower) band for which the 5th transmitter harmonic is within the downlink transmission bandwidth of a victim (higher) band.  NOTE 5: The requirements should be verified for UL EARFCN of the aggressor (lower) band (superscript LB) such that in MHz and  with carrier frequency in the victim (higher) band in MHz and the channel bandwidth configured in the lower band.  NOTE 6: These requirements apply when there is at least one individual RE within the uplink transmission bandwidth of the aggressor (lower) band for which the 4th transmitter harmonic is within the downlink transmission bandwidth of a victim (higher) band.  NOTE 7: The requirements should be verified for UL EARFCN of the aggressor (lower) band (superscript LB) such that in MHz and  with carrier frequency in the victim (higher) band in MHz and the channel bandwidth configured in the lower band.  NOTE 8: These requirements apply when there is at least one individual RE within the uplink transmission bandwidth of a low band for which the 3rd transmitter harmonic is within the downlink transmission bandwidth of a high band.  NOTE 9 The requirements should be verified for UL EARFCN of a low band (superscript LB) such that in MHz and  with the carrier frequency of a high band in MHz and the channel bandwidth configured in the low band.  NOTE 10: Applicable for the operations with 2 or 4 antenna ports supported in the band with carrier aggregation configured.  NOTE 11: These requirements apply when the lower edge frequency of the 5 MHz uplink channel in Band 71 is located at or below 668 MHz and the downlink channel in Band 2 is located with its upper edge at 1990 MHz.  NOTE 12: These requirements apply when the lower edge frequency of the 10 MHz, 15 MHz, or 20 MHz uplink channel in Band 71 is located at or below 668 MHz and the downlink channel in Band 2 is located with its upper edge at 1990 MHz. | | | | | | | | | | | | | |

Table 7.3B.2.3.1-2: Uplink configuration for reference sensitivity exceptions due to UL harmonic interference for EN-DC in NR FR1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | E-UTRA or NR Band / Channel bandwidth of the high band | | | | | | | | | | | | |
| UL band | DL band | 5  MHz | 10 MHz | 15 MHz | 20 MHz | 25 MHz | 30 MHz | 40 MHz | 50 MHz | 60 MHz | 80 MHz | 90 MHz | 100 MHz |
| 1 | n77 | 12 | 25 | 36 | 50 |  |  | 100 |  |  |  |  |  |
| 2 | n78 | 12 | 26 | 39 | 531  1002 |  |  |  |  |  |  |  |  |
| 3 | n77 | 12 | 25 | 36 | 50 |  |  | 50 |  |  |  |  |  |
| 3 | n78 | 12 | 25 | 36 | 50 |  |  | 50 |  |  |  |  |  |
| 8 | n77  n78 |  | 16 | 25 | 25 |  |  | 25 | 25 | 25 | 25 | 25 | 25 |
| 8 | n79 |  |  |  |  |  |  | 25 | 25 | 25 | 25 |  | 25 |
| 18 | n77 | 8 | 16 | 25 | 251, 252 |  |  |  |  |  |  |  |  |
| 19 | n77 |  | 16 | 25 | 25 |  |  | 25 | 25 | 25 | 25 |  | 25 |
| 20 | n77 | 8 | 16 | 25 | 251, 252 |  |  |  |  |  |  |  |  |
| 20 | n78 |  | 12 | 18 | 20 |  |  | 20 |  |  |  |  |  |
| 26 | n77  n78 | 8 | 16 | 25 | 251, 252 |  |  |  |  |  |  |  |  |
| n28 | 1 | 8 | 16 | 25 | 25 |  |  |  |  |  |  |  |  |
| n28 | n75 | 12 | 25 | 36 | 50 |  |  |  |  |  |  |  |  |
| 28 | n77  n78 |  | 10 | -15 | 20 |  |  | 25 | 25 | 25 | 25 | 25 | 25 |
| 66 | n78 |  | 26 | 39 | 53 |  |  | 100 |  |  |  |  |  |
| n71 | 2 | 254  85 | 254  85 | 204  85 | 204  85 |  |  |  |  |  |  |  |  |
| NOTE 1: The configuration is used for measurement of MSD for NR channel bandwidth of 20MHz.  NOTE 2: The configuration is used for measurement of MSD for NR channel bandwidth of 40MHz.  NOTE 3: The RB allocation is at the lower edge of the lowest channel of UL band.  NOTE 4: These requirements apply when the lower edge frequency of the 5 MHz uplink channel in Band 71 is located at or below 668 MHz and the downlink channel in Band 2 is located with its upper edge at 1990 MHz.  NOTE 5: These requirements apply when the lower edge frequency of the 10 MHz, 15 MHz, or 20 MHz uplink channel in Band 71 is located at or below 668 MHz and the downlink channel in Band 2 is located with its upper edge at 1990 MHz. | | | | | | | | | | | | | |

##### 7.3B.2.3.2 MSD due to receiver harmonic mixing for EN-DC in NR FR1

Sensitivity degradation is allowed for a band if it is impacted by receiver harmonic mixing due to another band part of the same DC configuration. Reference sensitivity exceptions are specified in Table 7.3B.2.3.2-1 with uplink configuration specified in Table 7.3B.2.3.2-2.

Table 7.3B.2.3.2-1: Reference sensitivity exceptions due to receiver harmonic mixing for EN-DC in NR FR1

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UL band | DL band | 5  MHz  (dBm) | 10 MHz  (dBm) | 15 MHz  (dBm) | 20 MHz  (dBm) | 25 MHz  (dBm) | 40 MHz  (dBm) | 50 MHz  (dBm) | 60 MHz  (dBm) | 80 MHz  (dBm) | 90 MHz  (dBm | 100 MHz  (dBm) |
| 2 | n714 | 26.8 | 23.6 | 21.2 | 15.6 |  |  |  |  |  |  |  |
| 26 | n414 | 24.3 | 24.3 | 22.5 | N/A |  |  |  |  |  |  |  |
| 41 | n777 | N/A | 8.3 | 8.0 | 6.9 | N/A | 3.9 | 3 | 2.3 | 1.2 | 0.4 |  |
| 41 | n787 | N/A | 8.3 | 8.0 | 6.9 | N/A | 3.9 | 3 | 2.3 | 1.2 | 0.4 |  |
| n71 | 25 | 4.6 | 1 | 0.7 | 0.6 |  |  |  |  |  |  |  |
| 26 | 1.7 | 1 | 0.7 | 0.6 |  |  |  |  |  |  |  |
| n77 | 418 | 10.4 | 10.4 | 10.4 | 10.4 | N/A | N/A | N/A | N/A | N/A | N/A |  |
| n77 | 282 | 28 | 25 | 23.2 | 22 |  |  |  |  |  |  |  |
| n78 | 418 | 10.4 | 10.4 | 10.4 | 10.4 | N/A | N/A | N/A | N/A | N/A | N/A |  |
| n79 | 192 | 29.5 | 26.5 | 24.7 |  |  |  |  |  |  |  |  |
| n79 | 213 | 39.3 | 36.3 | 34.5 |  |  |  |  |  |  |  |  |
| n79 | 262 | 27 | 24 | 22.2 | N/A | N/A | N/A | N/A | N/A | N/A |  | N/A |
| NOTE 1: These requirements apply when there is at least one individual RE within the uplink transmission bandwidth of the aggressor (higher) band for which the mixing product due to harmonic of victim (lower) band LO with leakage of aggressor (higher) band is within the downlink transmission bandwidth of a victim (lower) band.  NOTE 2: The requirements should be verified for DL EARFCN of the victim (lower) band (superscript LB) such that in MHz and  with carrier frequency in the victim (lower) band in MHz and the channel bandwidth configured in the lower band.  NOTE 3: The requirements should be verified for DL EARFCN of the victim (lower) band (superscript LB) such that in MHz and  with carrier frequency in the victim (lower) band in MHz and the channel bandwidth configured in the lower band.  NOTE 4: The requirements should be verified for UL EARFCN of the aggressor (higher) band (superscript HB) such that  in MHz and  with  the carrier frequency in the victim (lower) band and  the channel bandwidth configured in the higher band.  NOTE 5: These requirements apply when the lower edge frequency of the 5 MHz uplink channel in Band n71 is located at or below 668 MHz and the downlink channel in Band 2 is located with its upper edge at 1990 MHz.  NOTE 6: These requirements apply when the lower edge frequency of the 10 MHz, 15 MHz, or 20 MHz uplink channel in Band n71 is located at or below 668 MHz and the downlink channel in Band 2 is located with its upper edge at 1990 MHz.  NOTE 7: The requirements should be verified for UL EARFCN of the aggressor (lower) band (superscript LB) such that in MHz and  with carrier frequency in the victim (higher) band in MHz and the channel bandwidth configured in the lower band.  NOTE 8: The requirements should be verified for UL EARFCN of the aggressor (higher) band (superscript HB) such that in MHz and  with carrier frequency in the victim (lower) band in MHz and  the channel bandwidth configured in the higher band. | | | | | | | | | | | | |

Table 7.3B.2.3.2-2: Uplink configuration for reference sensitivity exceptions due to receiver harmonic mixing for EN-DC in NR FR1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UL band | DL band | SCS  (kHz) | 5 MHz | 10 MHz | 15 MHz | 20 MHz | 25 MHz | 40 MHz | 50 MHz | 60 MHz | 80 MHz | 90 MHz | 100 MHz |
| 2 | n71 | 15 | 25 | 50 | 50 | 50 |  |  |  |  |  |  |  |
| n41 | 26 | 15 | 25 | 50 | 75 |  |  |  |  |  |  |  |  |
| 41 | n77 | 15 | 25 | 25 | 25 | 25 | N/A | N/A | N/A | N/A | N/A | N/A |  |
| 41 | n78 | 15 | 25 | 25 | 25 | 25 | N/A | N/A | N/A | N/A | N/A | N/A |  |
| n77 | 28 | 15 | 25 | 50 | 75 | 100 |  |  |  |  |  |  |  |
| n77 | 41 | 30 | N/A | 50 | 50 | 50 | N/A | 50 | 50 | 50 | 50 | 50 |  |
| n78 | 41 | 30 | N/A | 50 | 50 | 50 | N/A | 50 | 50 | 50 | 50 | 50 |  |
| n79 | 19 | 15 | 25 | 50 | 75 |  |  |  |  |  |  |  |  |
| n79 | 21 | 15 | 25 | 50 | 75 |  |  |  |  |  |  |  |  |
| n79 | 26 | 15 | 25 | 50 | 75 |  |  |  |  |  |  |  |  |
| NOTE 1: These requirements apply when there is at least one individual RE within the downlink transmission bandwidth of the victim (lower) band for which the 3rd harmonic is within the uplink transmission bandwidth or the uplink adjacent channel’s transmission bandwidth of an aggressor (higher) band.  NOTE 2: The requirements should be verified for UL EARFCN of the aggressor (higher) band (superscript HB) such that  in MHz and  with  the carrier frequency in the victim (lower) band and  the channel bandwidth configured in the higher band. | | | | | | | | | | | | | |

##### 7.3B.2.3.3 Reference sensitivity exceptions due to close proximity of bands for EN-DC in NR FR1

Sensitivity degradation is allowed for a band if it is impacted by close proximity of an UL of another band part of the same DC configuration. Reference sensitivity exceptions are specified in Table 7.3B.2.3.3-1 with uplink configuration specified in Table 7.3B.2.3.3-2.

Table 7.3B.2.3.3-1: Reference sensitivity exceptions due to close proximity of bands for EN-DC in NR FR1

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UL band | DL band | 5 MHz  (dBm) | 10 MHz  (dBm) | 15 MHz  (dBm) | 20 MHz  (dBm) | 25 MHz  (dBm) | 40 MHz  (dBm) | 50 MHz  (dBm) | 60 MHz  (dBm) | 80 MHz  (dBm) | 90 MHz  (dBm) | 100 MHz  (dBm) |
| X | Y |  |  |  |  |  |  |  |  |  |  |  |

Table 7.3B.2.3-2: Uplink configuration for reference sensitivity exceptions due to close proximity of bands for EN-DC in NR FR1

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UL band | DL band | 5 MHz  (dBm) | 10 MHz  (dBm) | 15 MHz  (dBm) | 20 MHz  (dBm) | 25 MHz  (dBm) | 40 MHz  (dBm) | 50 MHz  (dBm) | 60 MHz  (dBm) | 80 MHz  (dBm) | 90 MHz  (dBm) | 100 MHz  (dBm) |
| X | Y |  |  |  |  |  |  |  |  |  |  |  |

##### 7.3B.2.3.4 Reference sensitivity exceptions due to cross band isolation for EN-DC in NR FR1

Sensitivity degradation is allowed for a band if it is impacted by UL of another band part of the same DC configuration due to cross band isolation issues. Reference sensitivity exceptions are specified in Table 7.3B.2.3.4-1 with uplink configuration specified in Table 7.3B.2.3.4-2.

Table 7.3B.2.3.4-1: Reference sensitivity exceptions due to cross band isolation for EN-DC in NR FR1

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UL band | DL band | 5 MHz  (dBm) | 10 MHz  (dBm) | 15 MHz  (dBm) | 20 MHz  (dBm) | 25 MHz  (dBm) | 40 MHz  (dBm) | 50 MHz  (dBm) | 60 MHz  (dBm) | 80 MHz  (dBm) | 90 MHz  (dBm) | 100 MHz  (dBm) |
| n77 | 411 | -93.5 | -90.5 | -88.7 | -87.5 |  |  |  |  |  |  |  |
| n78 | 411 | -93.5 | -90.5 | -88.7 | -87.5 |  |  |  |  |  |  |  |
| NOTE 1: Applicable only when harmonic mixing MSD for this combination is not applied. | | | | | | | | | | | | |

Table 7.3B.2.3.4-2: Uplink configuration for reference sensitivity exceptions due to cross band isolation for EN-DC in NR FR1

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UL band | DL band | 5 MHz  (dBm) | 10 MHz  (dBm) | 15 MHz  (dBm) | 20 MHz  (dBm) | 25 MHz  (dBm) | 40 MHz  (dBm) | 50 MHz  (dBm) | 60 MHz  (dBm) | 80 MHz  (dBm) | 90 MHz  (dBm) | 100 MHz  (dBm) |
| n77 | 41 | 30 | 273 | 273 | 273 | 273 | N/A | N/A | N/A | N/A | N/A | N/A |
| n78 | 41 | 30 | 273 | 273 | 273 | 273 | N/A | N/A | N/A | N/A | N/A | N/A |

##### 7.3B.2.3.5 Reference sensitivity exceptions for intermodulation interference due to dual uplink operation for EN-DC in NR FR1

For EN-DC configurations in NR FR1 the UE may indicate capability of not supporting simultaneous dual uplink operation due to possible intermodulation interference overlapping in frequency with its own downlink transmissions if

- the intermodulation order is 2;

- the intermodulation order is 3 when the operating bands of the configuration are either confined below 1 GHz or confined within the frequency range 1695 MHz – 2690 MHz.

In case for the EN-DC in NR FR1 configurations the intermodulation products caused by dual uplink operation do not interfere with the own downlink transmission as defined in Annex-A the UE is mandated to operate in dual uplink mode.

For EN-DC in NR FR1 with uplink and downlink assigned to E-UTRA and NR FR1 bands given in Table 7.3B.2.3.5-1 the reference sensitivity is defined only for the specific uplink and downlink test points specified in Table 7.3B.2.3.5-1. For these test points the reference sensitivity levels specified in clause 7.3.1 in [4] and 7.3.2.1 of [2] for the corresponding channel bandwidths or in clause 7.3.1 of [4] are relaxed by the amount of the parameter MSD given in Table 7.3B.2.3.5-1.

The throughput on each of the CGs shall be ≥ 95% of the maximum throughput of the respective reference measurement channels as specified in … with parameters specified in Table 7.3B.2.3.5-1 with dual UL transmissions overlapping in time unless otherwise stated.

For EN-DC configurations in Table 7.3B.2.3.5-1 with UL/DL channel assignments such that Single UL is allowed, the MSD requirement is verified with non-simultaneous uplink transmissions on the two CGs for UEs only indicating support of Single UL.

###### 7.3B.2.3.5.1 Reference sensitivity exceptions for intermodulation interference due to dual uplink operation for EN-DC in NR FR1 involving two bands

Table 7.3B.2.3.5.1-1: Reference sensitivity exceptions due to dual uplink operation for EN-DC in NR FR1 (two bands)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| NR or E-UTRA Band / Channel bandwidth / NRB / MSD | | | | | | | | | |
| EN-DC  Configuration | EUTRA or NR band | UL Fc  (MHz) | UL/DL BW  (MHz) | UL  LCRB | DL Fc (MHz) | MSD  (dB) | Duplex mode | IMD order | Single UL allowed |
| DC\_1A\_n77A | 1 | 1950 | 5 | 25 | 2140 | 29.8 | FDD | IMD23 |  |
| 32.54 |  |
| n77 | 4090 | 10 | 25 | 4090 | N/A | TDD | N/A |  |
| DC\_1A\_n77A | 1 | 1950 | 5 | 25 | 2140 | 8.0 | FDD | IMD43 |  |
| 10.74 |  |
| n77 | 3710 | 10 | 25 | 3710 | N/A | TDD | N/A |  |
| DC\_1A\_n78A, DC\_1A\_SUL\_n78A-n84A | 1 | 1950 | 5 | 25 | 2140 | 8.0 | FDD | IMD43 |  |
| 10.74 |  |
| n78 | 3710 | 10 | 25 | 3710 | N/A | TDD |  |  |
| DC\_2A\_n66A | 2 | 1855 | 5 | 25 | 1935 | 20 | FDD | IMD3 |  |
| n66 | 1775 | 5 | 25 | 2175 | N/A | TDD | N/A |  |
| DC\_2A\_n66A | 2 | 1883.3 | 5 | 25 | 1963.3 | N/A | FDD | N/A |  |
| n66 | 1750 | 5 | 25 | 2150 | 4 | TDD | IMD5 |  |
| DC\_2A\_n78A | 2 | 1855 | 5 | 25 | 1940 | 26 | FDD | IMD23 |  |
| 28.74 |  |
| n78 | 3795 | 10 | 25 | 3795 | N/A | TDD | N/A |  |
| DC\_2A\_n78A | 2 | 1885 | 5 | 25 | 1955 | 8.0 | FDD | IMD43 |  |
| 10.74 |  |
| n78 | 3700 | 10 | 25 | 3700 | N/A | TDD | N/A |  |
| DC\_3A\_n7A | 3 | 1730 | 5 | 25 | 1825 | N/A | FDD | N/A |  |
| n7 | 2535 | 10 | 52 | 2655 | 10.25 | FDD | IMD4 |  |
| DC\_3A\_n77A  DC\_3A\_n78A | 3 | 1740 | 5 | 25 | 1835 | 26 | FDD | IMD23 |  |
| 28.74 |  |
| n77, n78 | 3575 | 10 | 25 | 3575 | N/A | TDD | N/A |  |
| DC\_3A\_n77A  DC\_3A\_n78A | 3 | 1765 | 5 | 25 | 1860 | 8.0 | FDD | IMD43 |  |
| 10.74 |  |
| n77, n78 | 3435 | 10 | 25 | 3435 | N/A | TDD | N/A |  |
| DC\_3A\_n78A | 3 | 1712.5 | 5 | 25 | 1807.5 | TBD5 | FDD | IMD2 | Yes |
| n78 | 3515 | 10 | 50 | 3515 | N/A | TDD | N/A |  |
| 3 | 1762.5 | 5 | 25 | 1857.5 | N/A | FDD | N/A | No |
| n78 | 3465 | 10 | 50 | 3465 | N/A | TDD | N/A |  |
| DC\_3A-SUL\_n78A-n80A, DC\_66A-SUL\_n78A-n86A | 3, 66 | 1740 | 5 | 25 | 1835 | 26 | FDD | IMD23 | Yes |
| 28.74 | Yes |
| n78 | 3575 | 10 | 25 | 3575 | N/A | TDD | N/A | Yes |
|  |  |  |  |  |  |  |  |  |
| DC\_3A\_SUL\_n78A-n80A, DC\_66A-SUL\_n78A-n86A | 3, 66 | 1765 | 5 | 25 | 1860 | 8.0 | FDD | IMD43 | No |
| 10.74 | No |
| n78 | 3435 | 10 | 25 | 3435 | N/A | TDD | N/A | No |
| DC\_3C\_n78A | 3 | 1740 | 5 | 25 | 1835 | 26 | FDD | IMD24 |  |
| 28.75 |  |
| n78 | 3575 | 10 | 25 | 3575 | N/A | TDD | N/A |  |
| n78 | 3710 | 10 | 25 | 3710 | N/A | TDD | N/A |  |
| DC\_3C\_n78A | 3 | 1765 | 5 | 25 | 1860 | 8.0 | FDD | IMD44 |  |
| 10.75 |  |
| n78 | 3435 | 10 | 25 | 3435 | N/A | TDD | N/A |  |
| DC\_5A\_n66A | 5 | 838 | 5 | 25 | 883 | 30 | FDD | IMD23 |  |
| n66 | 1721 | 5 | 25 | 2121 | N/A | N/A |  |
| DC\_5A\_n78A | 5 | 844 | 5 | 25 | 889 | 8.3 | FDD | IMD4 |  |
| n78 | 3421 | 10 | 52 | 3421 | N/A | TDD | N/A |  |
| DC\_8A\_n77A  DC\_8A\_n78A DC\_8A-SUL\_n78A-n81A | 8 | 897.5 | 5 | 25 | 942.5 | 8.3 | FDD | IMD4 |  |
| n77, n78 | 3635 | 10 | 52 | 3635 | N/A | TDD | H4 |  |
| DC\_8A\_n79A DC\_8A-SUL\_n79A-n81A | 8 | 897.5 | 5 | 25 | 942.5 | 4.8 | FDD | IMD5 |  |
| n79 | 4532.5 | 40 | 216 | 4532.5 | N/A | TDD | N/A |  |
| DC\_20A\_n8A | 20 | 849.5 | 5 | 25 | 808.5 | 21 | FDD | IMD3 | Yes |
| n8 | 892.5 | 5 | 25 | 937.5 | 21 | FDD | IMD3 |
| DC\_20A\_n77A | 20 | 850 | 5 | 25 | 810 | 11 | FDD | IMD4 |  |
| n77 | 3360 | 10 | 50 | 3360 | N/A | TDD | N/A |
| 20 | 840 | 5 | 25 | 800 | 6.5 | FDD | IMD5 |
| n77 | 4160 | 10 | 50 | 4150 | N/A | TDD | N/A |
| DC\_20A\_n78A, DC\_20A-SUL\_n78A-n82A | 20 | 850 | 5 | 25 | 810 | 21.7 | FDD | IMD44 |  |
| n78 | 3360 | 10 | 50 | 3360 | N/A | TDD | N/A |  |
| DC\_21A\_n79A | 21 | 1457.5 | 5 | 25 | 1505.5 | 18.4 | FDD | IMD3 |  |
| n79 | 4420.5 | 40 | 216 | 4420.5 | N/A | TDD | N/A |  |
| DC\_26A\_n41A | 26 | 839 | 5 | 25 | 884 | 15.6 | FDD | IMD3 |  |
| n41 | 2562 | 10 | 52 | 2562 | N/A | TDD | N/A |  |
| DC\_28A\_n51A | 28 | 725.5 | 20 | 25 | 765.5 | 5 | FDD | IMD 4, 5 | Yes |
| n51 | 1429.5 | 5 | 25 | 1429.5 | 5 | TDD | IMD 4, 5 |
| DC\_26A\_n77A  DC\_26A\_n78A | 26 | 836.5 | 5 | 25 | 881.5 | 11.1 | FDD | IMD4 |  |
| n77, n78 | 3390 | 10 | 50 | 3390 | N/A | TDD | N/A |  |
| CA\_28A\_n77A,  CA\_28A\_n78A, DC\_28A-SUL\_n78A-n83A | 28 | 705.5 | 5 | 25 | 760.5 | 5.5 | FDD | IMD5 |  |
| n77, n78 | 3582.5 | 10 | 25 | 3582.5 | N/A | TDD | N/A |  |
| DC\_66A\_n5A | n5 | 838 | 5 | 25 | 883 | 30 | FDD | IMD23 |  |
| 66 | 1721 | 5 | 25 | 2121 | N/A |  | N/A |  |
| DC\_66A\_n71A | 66 | 1750 | 5 | 25 | 2150 | 5 | FDD | IMD4 |  |
| n71 | 675 | 5 | 25 | 629 | N/A |  | N/A |  |
| DC\_66A\_n78A | 66 | 1740 | 5 | 25 | 1835 | 26 | FDD | IMD23 |  |
| 28.74 |  |
| n78 | 3575 | 10 | 25 | 3575 | N/A | TDD | N/A |  |
| 66 | 1765 | 5 | 25 | 1860 | 8.0 | FDD | IMD43 |  |
| 10.74 |  |
| n78 | 3435 | 10 | 25 | 3435 | N/A | TDD | N/A |  |
| NOTE 1: Both of the transmitters shall be set min(+20 dBm, PCMAX\_L,c) as defined in subclause 6.2.5A. In case Single UL is allowed and the UE only indicates support of “Single UL” the output power of the active UL shall be set at PCMAX\_L,c or set to the maximum output power according to the UE power scaling capability.  NOTE 2: RBSTART = 0  NOTE 3: This band is subject to IMD5 also which MSD is not specified.  NOTE 4: Applicable only if operation with 4 antenna ports is supported in the band with carrier aggregation configured.  NOTE 5: For UEs only indicating support of Single UL, this requirement is verified with non-simultaneous uplink transmissions on the E-UTRA and NR CGs | | | | | | | | | |

###### 7.3B.2.3.5.2 Reference sensitivity exceptions for intermodulation interference due to dual uplink operation for EN-DC in NR FR1 involving three bands

Table 7.3B.2.3.5.2-1: Reference sensitivity exceptions due to dual uplink operation for EN-DC in NR FR1 (three bands)

| NR or E-UTRA Band / Channel bandwidth / NRB / MSD | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **EN-DC Configuration** | **EUTRA/NR band** | **UL Fc  (MHz)** | **UL/DL BW  (MHz)** | **UL**  **LCRB** | **DL Fc (MHz)** | **MSD  (dB)** | **Duplex mode** | **IMD order** | Single UL allowed |
| DC\_1A-3A\_n28A | 1 | 1975 | 5 | 25 | 2165 | N/A | FDD | N/A |  |
| n28 | 710.5 | 5 | 25 | 765.5 | N/A | FDD | N/A |  |
| 3 | 1723.5 | 5 | 25 | 1818.5 | 4.0 | FDD | IMD5 |  |
| DC\_1A-3A\_n28A | 3 | 1780 | 5 | 25 | 1875 | N/A | FDD | N/A |  |
| n28 | 710.5 | 5 | 25 | 765.5 | N/A | FDD | N/A |  |
| 1 | 1949 | 5 | 25 | 2139 | 11.0 | FDD | IMD4 |  |
| DC\_1A-7A\_n28A | 1 | 1935 | 5 | 25 | 2125 | N/A | FDD | N/A |  |
| n28 | 718 | 5 | 25 | 773 | N/A | FDD | N/A |  |
| 7 | 2533 | 10 | 52 | 2653 | 30.0 | FDD | IMD2 |  |
| DC\_1A-3A\_n77A | 1 | 1950 | 5 | 25 | 2140 | N/A | FDD | N/A |  |
| 3 | 1712.5 | 5 | 25 | 1807.5 | 31.5 | IMD2 |  |
| n77 | 3757.5 | 10 | 52 | 3757.5 | N/A | TDD | N/A |  |
| 1 | 1950 | 5 | 25 | 2140 | N/A | FDD | N/A |  |
| 3 | 1775 | 5 | 25 | 1870 | 8.5 | IMD4 |  |
| n77 | 3980 | 10 | 52 | 3980 | N/A | TDD | N/A |  |
| 1 | 1950 | 5 | 25 | 2140 | 31.0 | FDD | IMD2 |  |
| 3 | 1775 | 5 | 25 | 1870 | N/A | N/A |  |
| n77 | 3915 | 10 | 52 | 3915 | N/A | TDD | N/A |  |
| DC\_1A-3A\_n78A  DC\_1A-3C\_n78A | 1 | 1930 | 5 | 25 | 2120 | 8.3 | FDD | IMD4  |fB78-3\*fB1| |  |
| 3 | 1775 | 5 | 25 | 1870 | N/A |  | N/A |  |
| n78 | 3670 | 10 | 52 | 3670 | N/A | TDD | N/A |  |
| 1 | 1950 | 5 | 25 | 2140 | N/A | FDD | N/A |  |
| 3 | 1712.5 | 5 | 25 | 1807.5 | 31.2 | IMD2  |fB78-fB1| |  |
| n78 | 3757.5 | 10 | 52 | 3757.5 | N/A | TDD | N/A |  |
| 1 | 1935 | 5 | 25 | 2125 | 2.8 | FDD | IMD5  |2\*fB78-3\*fB3| |  |
| 3 | 1775 | 5 | 25 | 1870 | N/A | N/A |  |
| n78 | 3725 | 10 | 52 | 3725 | N/A | TDD | N/A |  |
| DC\_1A-5A\_n78A | 1 | 1930 | 5 | 25 | 2120 | 8.3 | FDD | IMD4  |fB78-3\*fB1| |  |
| 5 | 844 | 5 | 25 | 889 | N/A | FDD | N/A |  |
| n78 | 3670 | 10 | 52 | 3670 | N/A | TDD | N/A |  |
| 1 | 1950 | 5 | 25 | 2140 | N/A | FDD | N/A |  |
| 5 | 844 | 5 | 25 | 889 | 8.3 | FDD | IMD4  |fB78-3\*fB5| |  |
| n78 | 3421 | 10 | 52 | 3421 | N/A | TDD | N/A |  |
| 1 | 1932 | 5 | 25 | 2122 | 18.1 | FDD | IMD3  |fB78-2\*fB5| |  |
| 5 | 829 | 5 | 25 | 874 | N/A | FDD | N/A |  |
| n78 | 3780 | 10 | 52 | 3780 | N/A | TDD | N/A |  |
| 1 | 1975 | 5 | 25 | 2165 | N/A | FDD | N/A |  |
| 5 | 840 | 5 | 25 | 885 | 3.1 | FDD | IMD5  |2\*fB78-3\*fB1| |  |
| n78 | 3405 | 10 | 52 | 3405 | N/A | TDD | N/A |  |
| DC\_1A-7A\_n78A | 1 | 1930 | 5 | 25 | 2120 | 8.3 | FDD | IMD4  |fB78-3\*fB1| |  |
| 7 | 2550 | 5 | 25 | 2670 | N/A | FDD | N/A |  |
| n78 | 3670 | 10 | 52 | 3670 | N/A | TDD | N/A |  |
| 1 | 1977.5 | 5 | 25 | 2167.5 | N/A | FDD | N/A |  |
| 7 | 2507.5 | 5 | 25 | 2627.5 | 9.1 | FDD | IMD4  |fB78-3\*fB1| |  |
| n78 | 3305 | 10 | 52 | 3305 | N/A | TDD | N/A |  |
| 1 | 1950 | 5 | 25 | 2140 | 8.7 | FDD | IMD4  |2\*fB78-2\*fB7| |  |
| 7 | 2510 | 10 | 50 | 2630 | N/A | FDD | N/A |  |
| n78 | 3310 | 10 | 52 | 3310 | N/A | TDD | N/A |  |
| DC\_1A-3A\_n79A | 1 | 1950 | 5 | 25 | 2140 | 3.6 | FDD | IMD5 |  |
| 3 | 1750 | 5 | 25 | 1845 | N/A | N/A |  |
| n79 | 4860 | 40 | 216 | 4860 | N/A | TDD | N/A |  |
| DC\_1A-18A\_n77A | 1 | 1930 | 5 | 25 | 2120 | 16.4 | FDD | IMD3 |  |
| 18 | 825 | 5 | 25 | 870 | N/A |  | N/A |  |
| n77 | 3770 | 10 | 52 | 3770 | N/A | TDD | N/A |  |
| DC\_1A-18A\_n78A | 1 | 1930 | 5 | 25 | 2120 | 16.4 | FDD | IMD3 |  |
| 18 | 819 | 5 | 25 | 864 | N/A |  | N/A |  |
| n78 | 3758 | 10 | 52 | 3758 | N/A | TDD | N/A |  |
| DC\_1A-18A\_n79A | 1 | 1935 | 5 | 25 | 2125 | N/A | FDD | N/A |  |
| 18 | 822.5 | 5 | 25 | 867.5 | 18.3 | FDD | IMD3 |  |
| n79 | 4782.5 | 40 | 216 | 4782.5 | N/A | TDD | N/A |  |
| 1 | 1930 | 5 | 25 | 2120 | N/A | FDD | N/A |  |
| 18 | 820 | 5 | 25 | 865 | 8.9 | FDD | IMD4 |  |
| n79 | 4925 | 40 | 216 | 4925 | N/A | TDD | N/A |  |
| 1 | 1935 | 5 | 25 | 2125 | 8.1 | FDD | IMD4 |  |
| 18 | 822.5 | 5 | 25 | 867.5 | N/A | FDD | N/A |  |
| n79 | 4782.5 | 40 | 216 | 4782.5 | N/A | TDD | N/A |  |
| DC\_1A-19A\_n77A  DC\_1A-19A\_n78A | 1 | 1940 | 5 | 25 | 2130 | 17.8 | FDD | IMD3 |  |
| 19 | 832.5 | 5 | 25 | 877.5 | N/A | N/A |  |
| n77, n78 | 3795 | 10 | 52 | 3795 | N/A | TDD | N/A |  |
| DC\_1A-19A\_n79A | 1 | 1950 | 5 | 25 | 2140 | N/A | FDD | N/A |  |
| 19 | 837.5 | 5 | 25 | 882.5 | 18.3 | IMD3 |  |
| n79 | 4782.5 | 40 | 216 | 4782.5 | N/A | TDD | N/A |  |
| 1 | 1950 | 5 | 25 | 2140 | 8.1 | FDD | IMD4 |  |
| 19 | 837.5 | 5 | 25 | 882.5 | N/A | N/A |  |
| n79 | 4652.5 | 40 | 216 | 4652.5 | N/A | TDD | N/A |  |
| DC\_1A-20A\_n78A | 1 | 1930 | 5 | 25 | 2120 | 20.3 | FDD | IMD3 |  |
| 20 | 835 | 5 | 25 | 794 | N/A | FDD | N/A |  |
| n78 | 3790 | 10 | 52 | 3790 | N/A | TDD | N/A |  |
| DC\_1A-20A\_n78A | 1 | 1950 | 5 | 25 | 2140 | N/A | FDD | N/A |  |
| 20 | 851 | 5 | 25 | 810 | 3.0 | FDD | IMD5 |  |
| n78 | 3330 | 10 | 52 | 3330 | N/A | TDD | N/A |  |
| DC\_1A-21A\_n77A  DC\_1A-21A\_n78A | 1 | 1964.6 | 5 | 25 | 2154.6 | 30.6 | FDD | IMD2 |  |
| 21 | 1450.4 | 5 | 25 | 1498.4 | N/A | N/A |  |
| n77, n78 | 3605 | 10 | 52 | 3605 | N/A | TDD | N/A |  |
| 1 | 1950 | 5 | 25 | 2140 | N/A | FDD | N/A |  |
| 21 | 1452 | 5 | 25 | 1500 | 2.9 | IMD5 |  |
| n77, n78 | 3675 | 10 | 52 | 3675 | N/A | TDD | N/A |  |
| DC\_2A-66A-(n)71B | 66 | 1750 | 5 | 25 | 2150 | 5.0 | FDD | IMD4 |  |
| n71 | 675 | 5 | 25 | 629 | N/A |  | N/A |  |
| DC\_1A-28A\_n77A | 1 | 1960 | 5 | 25 | 2150 | 15.8 | FDD | IMD3 |  |
| 28 | 740 | 5 | 25 | 795 | N/A |  | N/A |  |
| n77 | 3630 | 10 | 52 | 3630 | N/A | TDD | N/A |  |
| DC\_1A-28A\_n77A | 1 | 1960 | 5 | 25 | 2150 | N/A | FDD | N/A |  |
| 28 | 725 | 5 | 25 | 780 | 4.3 |  | IMD5 |  |
| n77 | 3330 | 10 | 52 | 3330 | N/A | TDD | N/A |  |
| DC\_1A-28A\_n78A | 1 | 1960 | 5 | 25 | 2150 | 15.7 | FDD | IMD3 |  |
| 28 | 740 | 5 | 25 | 795 | N/A |  | N/A |  |
| n78 | 3630 | 10 | 52 | 3630 | N/A | TDD | N/A |  |
| DC\_1A-28A\_n78A | 1 | 1970 | 5 | 25 | 2160 | N/A | FDD | N/A |  |
| 28 | 739 | 5 | 25 | 794 | 4.2 |  | IMD5 |  |
| n78 | 3352 | 10 | 52 | 3352 | N/A | TDD | N/A |  |
| DC\_1A\_n28A-n78A | 1 | 1950 | 5 | 25 | 2140 | N/A | FDD | N/A |  |
| n28 | 733 | 5 | 25 | 788 | N/A |  | N/A |  |
| n78 | 3416 | 10 | 52 | 3416 | 15.7 | TDD | IMD3 |  |
| 1 | 1950 | 5 | 25 | 2140 | N/A | FDD | N/A |  |
| n78 | 3320 | 10 | 52 | 3320 | N/A | TDD | N/A |  |
| n28 | 735 | 5 | 25 | 790 | 3.3 | FDD | IMD5 |  |
| DC\_1A-28A\_n79A | 1 | 1930 | 5 | 25 | 2120 | N/A | FDD | N/A |  |
| 28 | 733 | 5 | 25 | 788 | 15.2 | FDD | IMD3 |  |
| n79 | 4648 | 40 | 216 | 4648 | N/A | TDD | N/A |  |
| 1 | 1925 | 5 | 25 | 2115 | N/A | FDD | N/A |  |
| 28 | 740 | 5 | 25 | 795 | 10.0 | FDD | IMD4 |  |
| n79 | 4980 | 40 | 216 | 4980 | N/A | TDD | N/A |  |
| 1 | 1977.5 | 5 | 25 | 2167.5 | 1.2 | FDD | IMD4 |  |
| 28 | 745.5 | 5 | 25 | 800.5 | N/A | FDD | N/A |  |
| n79 | 4420 | 40 | 216 | 4420 | N/A | TDD | N/A |  |
| 1 | 1935 | 5 | 25 | 2125 | 4.5 | FDD | IMD5 |  |
| 28 | 718 | 5 | 25 | 773 | N/A | FDD | N/A |  |
| n79 | 4807 | 40 | 216 | 4807 | N/A | TDD | N/A |  |
| DC\_1A-41A\_n77A | 1 | 1970 | 5 | 25 | 2160 | N/A | FDD | N/A |  |
| n77 | 3400 | 10 | 52 | 3400 |  | TDD |  |
| 41 | 2510 | 5 | 25 | 2510 | 11.0 | TDD | IMD4 |  |
| 1 | 1930 | 5 | 25 | 2120 | N/A | FDD | N/A |  |
| n77 | 4150 | 10 | 52 | 4150 |  | TDD |  |
| 41 | 2510 | 5 | 25 | 2510 | 3.6 | TDD | IMD5 |  |
| DC\_1A-41A\_n78A | 1 | 1975 | 5 | 25 | 2165 | N/A | FDD | N/A |  |
| 41 |  | 5 | 25 | 2515 | 12 | TDD | IMD4 |  |
| n78 | 3410 | 10 | 52 | 3410 | N/A | TDD | N/A |  |
| DC\_1A-41A\_n79A | 1 | 1970 | 5 | 25 | 2160 | N/A | FDD | N/A |  |
| n79 | 4500 | 40 | 216 | 4500 |  | TDD |  |
| 41 | 2530 | 5 | 25 | 2530 | 29.4 | TDD | IMD2 |  |
| 1 | 1922.5 | 5 | 25 | 2112.5 | N/A | FDD | N/A |  |
| n79 | 4980 | 40 | 216 | 4980 |  | TDD |  |  |
| 41 | 2687.5 | 5 | 25 | 2687.5 | 0.0 | TDD | IMD5 |  |
| DC\_1A-42A\_n79A | 1 | 1977.5 | 5 | 25 | 2167.5 | N/A | FDD | N/A |  |
| n79 | 4420 | 40 | 216 | 4420 |  | TDD |  |  |
| 42 | 3490 | 5 | 25 | 3490 | 4.8 | TDD | IMD5 |  |
| 42 | 3402.5 | 5 | 25 | 3402.5 | N/A | TDD | N/A |  |
| n79 | 4640 | 40 | 216 | 4640 |  | TDD |  |  |
| 1 | 1975 | 5 | 25 | 2165 | 15.5 | FDD | IMD3 |  |
| 42 | 3450 | 5 | 25 | 3450 | N/A | TDD | N/A |  |
| n79 | 4520 | 40 | 216 | 4520 |  | TDD |  |  |
| 1 | 1950 | 5 | 25 | 2140 | 9.3 | FDD | IMD4 |  |
| DC\_1A\_n78A-n79A | 1 | 1950 | 5 | 25 | 2140 | N/A | FDD | N/A |  |
| n78 | 3410 | 10 | 52 | 3410 | N/A | TDD | N/A |  |
| n79 | 4870 | 40 | 216 | 4870 | 15.9 | TDD | IMD3 |  |
| 1 | 1950 | 5 | 25 | 2140 | N/A | FDD | N/A |  |
| n79 | 4670 | 40 | 216 | 4670 | N/A | TDD | N/A |  |
| n78 | 3490 | 10 | 52 | 3490 | 4.6 | TDD | IMD5 |  |
| DC\_2A-66A\_n71A | 66 | 1750 | 5 | 25 | 2150 | 5.0 | FDD | IMD4 |  |
| n71 | 675 | 5 | 25 | 629 | N/A |  | N/A |  |
| DC\_3A-5A\_n78A | 3 | 1730 | 5 | 25 | 1825 | N/A | FDD | N/A |  |
| 5 | 844 | 5 | 25 | 889 | 8.3 | FDD | IMD4  |fB78-3\*fB5|4 |  |
| n78 | 3421 | 10 | 52 | 3421 | N/A | TDD | N/A |  |
| 3 | 1740 | 5 | 25 | 1835 | 26.0 | FDD | IMD2  |fB78-fB3| |  |
|  |  |  |  |  | 28.75 |  |  |  |
| 5 | 840 | 5 | 25 | 885 | N/A | FDD | N/A |  |
| n78 | 3575 | 10 | 25 | 3575 | N/A | TDD | N/A |  |
| n78 | 3710 | 10 | 25 | 3710 | N/A | TDD | N/A |  |
| 3 | 1770 | 5 | 25 | 1865 | 8.0 | FDD | IMD4  |fB78-3\*fB3|4 |  |
|  |  |  |  |  | 10.75 |  |  |  |
| DC\_3A-7A\_n28A | 3 | 1712.5 | 5 | 25 | 1807.5 | N/A | FDD | N/A |  |
| n28 | 743 | 5 | 25 | 798 | N/A | FDD | N/A |  |
| 7 | 2562 | 10 | 52 | 2682 | 16.9 | FDD | IMD3 |  |
| 7 | 2543 | 10 | 52 | 2663 | N/A | FDD | N/A |  |
| n28 | 710.5 | 5 | 25 | 765.5 | N/A | FDD | N/A |  |
| 3 | 1737.5 | 5 | 25 | 1832.5 | 26.0 | FDD | IMD2 |  |
| DC\_3C-7C\_n78A | 3 | 1725 | 5 | 25 | 1820 | 17.6 | FDD | IMD3  |fB78-2\*fB7| |  |
| 7 | 2565 | 5 | 25 | 2685 | N/A | FDD | N/A |  |
| n78 | 3310 | 10 | 52 | 3310 | N/A | TDD | N/A |  |
| 3 | 1725 | 5 | 25 | 1820 | 8.6 | FDD | IMD4  |2\*fB78-2\*fB7| |  |
| 7 | 2565 | 5 | 25 | 2685 | N/A | FDD | N/A |  |
| n78 | 3475 | 10 | 52 | 3475 | N/A | TDD | N/A |  |
| DC\_3A-20A\_n28A | 20 | 852 | 5 | 25 | 811 | N/A | FDD | N/A |  |
| n28 | 738 | 5 | 25 | 793 | N/A | FDD | N/A |  |
| 3 | 1723 | 5 | 25 | 1818 | 9.4 | FDD | IMD4 |  |
| DC\_3A-28A\_n77A | 3 | 1712.5 | 5 | 25 | 1807.5 | N/A | FDD | N/A |  |
| 28 | 715 | 5 | 25 | 770 | 15.3 | FDD | IMD3 |  |
| n77 | 4195 | 10 | 52 | 4195 | N/A | TDD | N/A |  |
| 3 | 1755 | 5 | 25 | 1850 | 17.0 | FDD | IMD3 |  |
| 28 | 735 | 5 | 25 | 790 | N/A | FDD | N/A |  |
| n77 | 3320 | 10 | 52 | 3320 | N/A | TDD | N/A |  |
| DC\_3A-28A\_n78A | 3 | 1750 | 5 | 25 | 1850 | 26.0 | FDD | IMD2 |  |
| 28 | 760 | 5 | 25 | 760 | N/A |  | N/A |  |
| n78 | 3600 | 10 | 25 | 3600 | N/A | TDD | N/A |  |
| 3 | 1775 | 5 | 25 | 1870 | 17.3 | FDD | IMD3 |  |
| 28 | 740 | 5 | 25 | 760 | N/A |  | N/A |  |
| n78 | 3350 | 10 | 25 | 3350 | N/A | TDD | N/A |  |
| 3 | 1775 | 5 | 25 | 1845 | 8.0 | FDD | IMD4 |  |
| 28 | 740 | 5 | 25 | 760 | N/A |  | N/A |  |
| n78 | 3480 | 10 | 25 | 3480 | N/A | TDD | N/A |  |
| 3 | 1775 | 5 | 25 | 1875 | 8.0 | FDD | IMD5 |  |
| 28 | 740 | 5 | 25 | 760.5 | N/A |  | N/A |  |
| n78 | 3600 | 10 | 25 | 3600 | N/A | TDD | N/A |  |
| 3 | 1775 | 5 | 25 | 1870 | N/A | FDD | N/A |  |
| 28 | 705 | 5 | 25 | 780 | 8.3 |  | IMD5 |  |
| n78 | 3600 | 10 | 25 | 3600 | N/A | TDD | N/A |  |
| DC\_3A-28A\_n79A | 3 | 1770 | 5 | 25 | 1865 | N/A | FDD | N/A |  |
| 28 | 725 | 5 | 25 | 780 | 10.3 | FDD | IMD4 |  |
| n79 | 4530 | 40 | 216 | 4530 | N/A | TDD | N/A |  |
| 3 | 1775 | 5 | 25 | 1870 | 5.7 | FDD | IMD5 |  |
| 28 | 725 | 5 | 25 | 780 | N/A | FDD | N/A |  |
| n79 | 4770 | 40 | 216 | 4770 | N/A | TDD | N/A |  |
| DC\_3A\_n28A-n78A | 3 | 1750 | 5 | 25 | 1845 | N/A | FDD | N/A |  |
| n28 | 743 | 5 | 25 | 798 | N/A |  | N/A |  |
| n78 | 3764 | 10 | 52 | 3764 | 4.5 | TDD | IMD5 |  |
| DC\_3A\_n78A-n79A | 3 | 1770 | 5 | 25 | 1865 | N/A | FDD | N/A |  |
| n78 | 3340 | 10 | 52 | 3340 | N/A | TDD | N/A |  |
| n79 | 4910 | 40 | 216 | 4910 | 16.3 | TDD | IMD3 |  |
| 3 | 1770 | 5 | 25 | 1865 | N/A | FDD | N/A |  |
| n79 | 4510 | 40 | 216 | 4510 | N/A | TDD | N/A |  |
| n78 | 3710 | 10 | 52 | 3710 | 4.2 | TDD | IMD5 |  |
| DC\_3A-7A\_n78A  DC\_3C-7A\_n78A | 3 | 1725 | 5 | 25 | 1820 | 17.6 | FDD | IMD3  |fB78-2\*fB7| |  |
| 7 | 2565 | 5 | 25 | 2685 | N/A | FDD | N/A |  |
| n78 | 3310 | 10 | 52 | 3310 | N/A | TDD | N/A |  |
| DC\_3A-7A\_n78A  DC\_3C-7A\_n78A | 3 | 1725 | 5 | 25 | 1820 | 8.6 | FDD | IMD4  |2\*fB78-2\*fB7| |  |
| 7 | 2565 | 5 | 25 | 2685 | N/A | FDD | N/A |  |
| n78 | 3475 | 10 | 52 | 3475 | N/A | TDD | N/A |  |
| DC\_3A-19A\_n79A | 5 | 840 | 5 | 25 | 885 | N/A | FDD  TDD | N/A |  |
| n78 | 3445 | 10 | 52 | 3445 | N/A | N/A |  |
| n79 | 4435 | 40 | 216 | 4435 | N/A | TDD | N/A |  |
| 3 | 1782.5 | 5 | 25 | 1877.5 | 0.2 | FDD | IMD4 |  |
| 19 | 842.5 | 5 | 25 | 887.5 | N/A | N/A |  |
| n79 | 4420 | 40 | 216 | 4420 | N/A | TDD | N/A |  |
| DC\_3A-20A\_n78A  DC\_3C-20A\_n78A | 3 | 1725 | 5 | 25 | 1820 | 17.3 | FDD | IMD3  |fB78-2\*fB20| |  |
| 20 | 845 | 5 | 25 | 804 | N/A | FDD | N/A |  |
| n78 | 3510 | 10 | 52 | 3510 | N/A | TDD | N/A |  |
| DC\_3A-21A\_n77A  DC\_3A-21A\_n78A | 3 | 1767.5 | 5 | 25 | 1862.5 | N/A | FDD | N/A |  |
| 21 | 1459.5 | 5 | 25 | 1507.5 | 8.8 | IMD4 |  |
| n77, n78 | 3795 | 10 | 52 | 3795 | N/A | TDD | N/A |  |
| DC\_3A-21A\_n77A | 3 | 1771.6 | 5 | 25 | 1866.6 | 3.4 | FDD | IMD5 |  |
| 21 | 1450.4 | 5 | 25 | 1498.4 | N/A | N/A |  |
| n77 | 3935 | 10 | 52 | 3935 | N/A | TDD | N/A |  |
| DC\_3A-21A\_n79A | 3 | 1774.2 | 5 | 25 | 1869.2 | 17.8 | FDD | IMD3 |  |
| 21 | 1450.4 | 5 | 25 | 1498.4 | N/A | N/A |  |
| n79 | 4770 | 40 | 216 | 4770 | N/A | TDD | N/A |  |
| DC\_5A-7A\_n78A | 5 | 844 | 5 | 25 | 889 | 8.3 | FDD | IMD4  |fB78-3\*fB5| |  |
| 7 | 2550 | 5 | 25 | 2670 | N/A | FDD | N/A |  |
| n78 | 3421 | 10 | 52 | 3421 | N/A | TDD | N/A |  |
| 5 | 844 | 5 | 25 | 889 | N/A | FDD | N/A |  |
| 7 | 2525 | 5 | 25 | 2645 | 30.1 | FDD | N/A |  |
| n78 | 3489 | 10 | 52 | 3489 | N/A | TDD | N/A |  |
| 5 | 834 | 5 | 25 | 879 | 30.2 | FDD | IMD2  |fB78-fB7| |  |
| 7 | 2550 | 5 | 25 | 2670 | N/A | FDD | N/A |  |
| n78 | 3429 | 10 | 52 | 3429 | N/A | TDD | N/A |  |
| 5 | 830 | 5 | 25 | 875 | 3.3 | FDD | IMD5  |2\*fB78-3fB7| |  |
| 7 | 2525 | 5 | 25 | 2645 | N/A | FDD | N/A |  |
| n78 | 3350 | 10 | 52 | 3350 | N/A | TDD | N/A |  |
| DC\_5A\_41A\_n78A | 5 | 860 | 5 | 25 | 885 | 30.2 | FDD | IMD2 |  |
| 41 | 2615 | 5 | 25 | 2615 | N/A | TDD | N/A |  |
| n78 | 3500 | 10 | 52 | 3500 | N/A | TDD | N/A |  |
| 5 | 856.5 | 5 | 25 | 881.5 | 3.1 | FDD | IMD5 |  |
| 41 | 2620.5 | 5 | 25 | 2620.5 | N/A | TDD | N/A |  |
| n78 | 3490 | 10 | 52 | 3490 | N/A | TDD | N/A |  |
| DC\_7A-20A\_n28A | 20 | 852 | 5 | 25 | 811 | N/A | FDD | N/A |  |
| n28 | 738 | 5 | 25 | 793 | N/A | FDD | N/A |  |
| 7 | 2550 | 10 | 52 | 2670 | 5.9 | FDD | IMD5 |  |
| DC\_7A-20A\_n78A | 7 | 2560 | 5 | 25 | 2680 | N/A | FDD | N/A |  |
| 20 | 851 | 5 | 25 | 810 | 30.5 | FDD | IMD2  |fB78-fB7| |  |
| n78 | 3370 | 10 | 52 | 3370 | N/A | TDD | N/A |  |
| DC\_7A-20A\_n78A | 7 | 2560 | 5 | 25 | 2680 | N/A | FDD | N/A |  |
| 20 | 851 | 5 | 25 | 810 | 3.0 | FDD | IMD5  |2\*fB78-3\*fB7| |  |
| n78 | 3435 | 10 | 52 | 3435 | N/A | TDD | N/A |  |
| DC\_7A-20A\_n78A | 7 | 2555 | 5 | 25 | 2675 | 30.8 | FDD | IMD2  |fB78-fB20| |  |
| 20 | 845 | 5 | 25 | 804 | N/A | FDD | N/A |  |
| n78 | 3520 | 10 | 52 | 3520 | N/A | TDD | N/A |  |
| DC\_7A-28A\_n78A | 7 | 2570 | 5 | 25 | 2670 | N/A | FDD | N/A |  |
| 28 | 720 | 5 | 25 | 780 | 8.3 |  | IMD2 |  |
| n78 | 3350 | 10 | 52 | 3421 | N/A | TDD | N/A |  |
| 7 | 2570 | 5 | 25 | 2670 | N/A | FDD | N/A |  |
| 28 | 720 | 5 | 25 | 790 | 3.0 |  | IMD5 |  |
| n78 | 3460 | 10 | 52 | 3421 | N/A | TDD | N/A |  |
| 7 | 2570 | 5 | 25 | 2650 | 30.5 | FDD | IMD2 |  |
| 28 | 740 | 5 | 25 | 768 | N/A |  | N/A |  |
| n78 | 3390 | 10 | 52 | 3421 | N/A | TDD | N/A |  |
| DC\_7A\_n28A-n78A | 7 | 2565 | 5 | 25 | 2685 | N/A | FDD | N/A |  |
| n28 | 745 | 5 | 25 | 800 | N/A |  | N/A |  |
| n78 | 3310 | 10 | 52 | 3310 | 29.7 | TDD | IMD2 |  |
| 7 | 2565 | 5 | 25 | 2685 | N/A | FDD | N/A |  |
| n78 | 3365 | 10 | 52 | 3365 | N/A | TDD | N/A |  |
| n28 | 745 | 5 | 25 | 800 | 28.8 | FDD | IMD2 |  |
| DC\_7A-46A\_n78A6 | 7 | N/A | N/A | N/A | N/A | N/A | FDD | N/A |  |
| 46 | N/A | N/A | N/A | N/A | N/A | TDD | IMD2, IMD5 |  |
| n78 | N/A | N/A | N/A | N/A | N/A | TDD | N/A |  |
| DC\_18A-28A\_n77A | 18 | 820 | 5 | 25 | 865 | N/A | FDD | N/A |  |
| 28 | 723 | 5 | 25 | 778 | 4.4 |  | IMD5 |  |
| n77 | 4058 | 10 | 52 | 4058 | N/A | TDD | N/A |  |
| DC\_18A-28A\_n77A | 18 | 820 | 5 | 25 | 865 | 3.9 | FDD | IMD5 |  |
| 28 | 723 | 5 | 25 | 778 | N/A |  | N/A |  |
| n77 | 3757 | 10 | 52 | 3757 | N/A | TDD | N/A |  |
| DC\_18A-28A\_n78A | 18 | 819 | 5 | 25 | 864 | 3.8 | FDD | IMD5 |  |
| 28 | 723 | 5 | 25 | 778 | N/A |  | N/A |  |
| n78 | 3756 | 10 | 52 | 3756 | N/A | TDD | N/A |  |
| DC\_19A-21A\_n77A  DC\_19A-21A\_n78A | 19 | 837.5 | 5 | 25 | 882.5 | 18.7 | FDD | IMD3 |  |
| 21 | 1450.4 | 5 | 25 | 1498.4 | N/A | N/A |  |
| n77, n78 | 3783.3 | 10 | 52 | 3783.3 | N/A | TDD | N/A |  |
| DC\_19A-21A\_n77A | 19 | 837.5 | 5 | 25 | 882.5 | N/A | FDD | N/A |  |
| 21 | 1454.5 | 5 | 25 | 1502.5 | 9.0 | IMD4 |  |
| n77 | 4015 | 10 | 52 | 4015 | N/A | TDD | N/A |  |
| DC\_19A-21A\_n79A | 19 | 837.5 | 5 | 25 | 882.2 | N/A | FDD | N/A |  |
| 21 | 1452 | 5 | 25 | 1500 | 3.8 | IMD5 |  |
| n79 | 4850 | 40 | 216 | 4850 | N/A | TDD | N/A |  |
| DC\_21A-28A\_n77A | 21 | 1452 | 5 | 25 | 1500 | N/A | FDD | N/A |  |
| 28 | 730.5 | 5 | 25 | 785.5 | 16.9 | FDD | IMD3 |  |
| n77 | 3689.5 | 10 | 52 | 3689.5 | N/A | TDD | N/A |  |
| 21 | 1450.5 | 5 | 25 | 1498.5 | 9.9 | FDD | IMD4 |  |
| 28 | 730.5 | 5 | 25 | 785.5 | N/A | FDD | N/A |  |
| n77 | 3690 | 10 | 52 | 3690 | N/A | TDD | N/A |  |
| DC\_28A-42A\_n79A | 21 | 1450 | 5 | 25 | 1498 | 5.2 | FDD | IMD5 |  |
| 28 | 730.5 | 5 | 25 | 785.5 | N/A | TDD | N/A |  |
| n79 | 4420 | 40 | 216 | 4420 | N/A | TDD | N/A |  |
| DC\_66A\_(n)71B | 66 | 1750 | 5 | 25 | 2150 | 5 | FDD | IMD4 |  |
| n71 | 678 | 10 | 10 (RBstart =0) | 632 | N/A |  | N/A |  |
| DC\_19A\_n78A-n79A | 19 | 835 | 5 | 25 | 880 | N/A | FDD | N/A |  |
| n78 | 3680 | 10 | 52 | 3680 | N/A | TDD | N/A |  |
| n79 | 4515 | 40 | 216 | 4515 | 29.3 | TDD | IMD2 |  |
| 19 | 835 | 5 | 25 | 880 | N/A | FDD | N/A |  |
| n79 | 4550 | 40 | 216 | 4550 | N/A | TDD | N/A |  |
| n78 | 3715 | 10 | 52 | 3715 | 28.8 | TDD | IMD2 |  |
| DC\_20A\_n28A-n78A | 20 | 857 | 5 | 25 | 816 | N/A | FDD | N/A |  |
| n28 | 743 | 5 | 25 | 798 | N/A | FDD | N/A |  |
| n78 | 3314 | 10 | 52 | 3314 | 8.7 | TDD | IMD4 |  |
| 20 | 837 | 5 | 25 | 796 | N/A | FDD | N/A |  |
| n78 | 3310 | 10 | 52 | 3310 | N/A | TDD | N/A |  |
| n28 | 744 | 5 | 25 | 799 | 9.4 | FDD | IMD4 |  |
| DC\_21A\_n78A-n79A | 21 | 1453 | 5 | 25 | 1501 | N/A | FDD | N/A |  |
| n78 | 3420 | 10 | 52 | 3420 | N/A | TDD | N/A |  |
| n79 | 4873 | 40 | 216 | 4873 | 30.1 | TDD | IMD2 |  |
| 21 | 1453 | 5 | 25 | 1501 | N/A | FDD | N/A |  |
| n79 | 4940 | 40 | 216 | 4940 | N/A | TDD | N/A |  |
| n78 | 3487 | 10 | 52 | 3487 | 29.8 | TDD | IMD2 |  |
| NOTE 1: Both of the transmitters shall be set min (+20 dBm, PCMAX\_L,c) as defined in subclause 6.2.5A. In case Single UL is allowed and the UE only indicates support of “Single UL” the output power of the active UL shall be set at PCMAX\_L,c or set to the maximum output power according to the UE power scaling capability.  NOTE 2: RBSTART = 0  NOTE 3: For UEs only indicating support of Single UL, this requirement is verified with non-simultaneous uplink transmissions on the E-UTRA and NR CGs.  NOTE 4: This band is subject to IMD5 also which MSD is not specified.  NOTE 5: Applicable only if operation with 4 antenna ports is supported in the band with carrier aggregation configured.  NOTE 6: No requirements apply when there is at least one individual RE within the intermodulation generated by the dual uplink is within the downlink transmission bandwidth of the Band 46. The reference sensitivity should only be verified when this is not the case (the requirements for Band 46 specified in the CA\_7A-46A in clause 7.3.1 of 36.101 apply). | | | | | | | | | |

###### 7.3B.2.3.5.3 MSD exceptions due to Tx leakage issue

Table 7.3B.2.3.5.3-1: MSD exceptions due to Tx leakage issue (three bands)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| MSD due to Tx leakage issue exception for the DL band | | | | | | | |
| EUTRA and NR DC Configuration | E-UTRA and NR band | UL Fc  (MHz) | UL/DL BW (MHz) | UL  CLRB | DL FC  (MHz) | MSD  (dB) | Duplex mode |
| DC\_2A-66A-(n)71B | 71 | 665.5 | 5 | 5 (RBend =24) | 619.5 | 0 | FDD |
| n71 | 675.5 | 15 | 15 (RBstart = 0) | 629.5 | 1.8 |
| 71 | 670.5 | 15 | 15 (RBend = 74) | 624.5 | 0 |
| n71 | 680.5 | 5 | 5 (RBstart = 0) | 634.5 | 1.6 |
| 71 | 668 | 10 | 10 (RBend = 49) | 622 | 0 |
| n71 | 678 | 10 | 10 (RBstart = 0) | 632 | 1.7 |
| 71 | 668 | 10 | 10 (RBstart = 0) | 622 | 17.2 |
| n71 | 678 | 10 | 10 (RBend = 51) | 632 | 29.4 |

#### 7.3B.2.4 Inter-band EN-DC including FR2

##### 7.3B.2.4.1 Reference sensitivity exceptions due to UL harmonic interference for EN-DC in NR FR2

Reference sensitivity exceptions are specified for the condition when there is uplink transmission only in the aggressor band.

Sensitivity degradation is allowed for a band in frequency range 2 if it is impacted by UL harmonic interference from the band in frequency range 1 of the same DC configuration. Reference sensitivity exceptions are specified in Table 7.3B.2.4.1-1 with uplink configuration specified in Table 7.3B.2.4.1-2.

Table 7.3B.2.4.1-1: Reference sensitivity exceptions due to UL harmonic for EN-DC in NR FR2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| UL Band | DL Band | 50 MHz (dBm) | 100 MHz (dBm) | 200 MHz (dBm) | 400 MHz (dBm) |
| X | Y |  |  |  |  |

Table 7.3B.2.4.1-2: Uplink configuration for reference sensitivity exceptions due to UL harmonic interference

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UL band | DL band | 5 MHz  (dBm) | 10 MHz  (dBm) | 15 MHz  (dBm) | 20 MHz  (dBm) | 25 MHz  (dBm) | 40 MHz  (dBm) | 50 MHz  (dBm) | 60 MHz  (dBm) | 80 MHz  (dBm) | 90 MHz  (dBm) | 100 MHz  (dBm) |
| X | Y |  |  |  |  |  |  |  |  |  |  |  |

#### 7.3B.2.5 Inter-band EN-DC including both FR1 and FR2

##### 7.3B.2.5.1 Reference sensitivity exceptions due to UL harmonic interference for EN-DC including both FR1 and FR2

For inter-band EN-DC of LTE and NR in both FR1 and FR2, the UE is allowed to apply each sensitivity degradation for EN-DC in FR1 specified in clause 7.3B.2.3 TS 38.101-3 and for EN-DC including FR2 specified in clause 7.3B.2.3 of TS 38.101-3 independently.

### 7.3B.3 ΔRIB,c, ΔRIBNC for EN-DC

<Editor’s note: Table number to be updated>

For the UE which supports inter-band EN-DC configuration, the minimum requirement for reference sensitivity in Table 7.3.1-1 and Table 7.3.1-1a in [4], Table 7.3-1 in [2] and Table 7.3.1-1 in [3] shall be increased by the amount given in ΔRIB,c,ΔRIBNC in Tables below where unless otherwise stated, the same ΔRIB,c, ΔRIBNC are applicable to NR band(s) part for DC configurations which have the same NR operating band combination. Unless otherwise stated, ΔRIB,c or ΔRIBNC is set to zero.

#### 7.3B.3.1 Intra-band contiguous EN-DC

#### 7.3B.3.2 Intra-band non-contiguous EN-DC

Table 7.3B.3.2-1: Intra-band non-contiguous EN-DC with one uplink configuration for reference sensitivity

| DC configuration | Aggregated channel bandwidth (LTE+NR) | Wgap / (MHz) | UL LTE allocation | ΔRIBNC (dB) | Duplex mode |
| --- | --- | --- | --- | --- | --- |
| DC\_3A\_n3A | 5MHz+5MHz | 45.0 < Wgap ≤ 65.0 | 121 | 4.7 | FDD |
| 0.0 < Wgap ≤ 45.0 | 251 | 0 |
| 5MHz+10MHz | 40.0 < Wgap ≤ 60.0 | 121 | 3.8 |
| 0.0 < Wgap ≤ 40.0 | 251 | 0 |
| 5MHz+15MHz | 35.0 < Wgap ≤ 55.0 | 121 | 3.6 |
| 0.0 < Wgap ≤ 35.0 | 251 | 0 |
| 5MHz+20MHz | 30.0 < Wgap ≤ 50.0 | 121 | 3.4 |
| 0.0 < Wgap ≤ 30.0 | 251 | 0 |
| 5MHz+25MHz | 25.0 < Wgap ≤ 45.0 | 121 | 3.2 |
| 0.0 < Wgap ≤ 25.0 | 251 | 0 |
| 5MHz+30MHz | 20.0 < Wgap ≤ 40.0 | 121 | 3.0 |
| 0.0 < Wgap ≤ 20.0 | 251 | 0 |
| 10MHz+5MHz | 30.0 < Wgap ≤ 60.0 | 125 | 5.1 |
| 0.0 < Wgap ≤ 30.0 | 321 | 0 |
| 10MHz+10MHz | 25.0 < Wgap ≤ 55.0 | 125 | 4.3 |
| 0.0 < Wgap ≤ 25.0 | 321 | 0 |
| 10MHz+15MHz | 20.0 < Wgap ≤ 50.0 | 125 | 3.8 |
| 0.0 < Wgap ≤ 20.0 | 321 | 0 |
| 10MHz+20MHz | 15.0 < Wgap ≤ 45.0 | 125 | 3.5 |
| 0.0 < Wgap ≤ 15.0 | 321 | 0 |
| 10MHz+25MHz | 10.0 < Wgap ≤ 40.0 | 125 | 3.2 |
| 0.0 < Wgap ≤ 10.0 | 321 | 0 |
| 10MHz+30MHz | 5.0 < Wgap ≤ 35.0 | 125 | 2.8 |
| 0.0 < Wgap ≤ 5.0 | 321 | 0 |
| 15MHz+5MHz | 25.0 < Wgap ≤ 55.0 | 126 | 6.0 |
| 0.0 < Wgap ≤ 25.0 | 321 | 0 |
| 15MHz+10MHz | 20.0 < Wgap ≤ 50.0 | 126 | 4.7 |
| 0.0 < Wgap ≤ 20.0 | 321 | 0 |
| 15MHz+15MHz | 15.0 < Wgap ≤ 45.0 | 126 | 4.2 |
| 0.0 < Wgap ≤ 15.0 | 321 | 0 |
| 15MHz+20MHz | 10.0 < Wgap ≤ 40.0 | 126 | 3.8 |
| 0.0 < Wgap ≤ 10.0 | 321 | 0 |
| 15MHz+25MHz | 5.0 < Wgap ≤ 35.0 | 126 | 3.5 |
| 0.0 < Wgap ≤ 5.0 | 321 | 0 |
| 15MHz+30MHz | 0.0 < Wgap ≤ 30.0 | 126 | 3.3 |
| 20MHz+5MHz | 15.0 < Wgap ≤ 50.0 | 167 | 6.5 |
| 0.0 < Wgap ≤ 15.0 | 321 | 0 |
| 20MHz+10MHz | 10.0 < Wgap ≤ 45.0 | 167 | 5.1 |
| 0.0 < Wgap ≤ 10.0 | 321 | 0 |
| 20MHz+15MHz | 5.0 < Wgap ≤ 40.0 | 167 | 4.5 |
| 0.0 < Wgap ≤ 5.0 | 321 | 0 |
| 20MHz+20MHz | 0.0 < Wgap ≤ 35.0 | 167 | 4.1 |
| 20MHz+25MHz | 0.0 < Wgap ≤ 30.0 | 167 | 3.8 |
| 20MHz+30MHz | 0.0 < Wgap ≤ 25.0 | 167 | 3.6 |
| NOTE 1: 1 refers to the UL resource blocks shall be located as close as possible to the downlink operating band but confined within the transmission.  NOTE 2: Wgap is the sub-block gap between the two sub-blocks.  NOTE 3: The carrier center frequency of PCC in the UL operating band is configured closer to the DL operating band.  NOTE 4: All combinations of channel bandwidths defined in Table 5.3B.1.3-1.  NOTE 5: 5 refers to the UL resource blocks shall be located at RBstart=25.  NOTE 6: 6 refers to the UL resource blocks shall be located at RBstart=35.  NOTE 7: 7 refers to the UL resource blocks shall be located at RBstart=50. | | | | | |

#### 7.3B.3.3 Inter-band EN-DC within FR1

##### 7.3B.3.3.1 ΔRIB,c for EN-DC in two bands

Table 7.3B.3.3.1-1: ΔRIB,c due to EN-DC(two bands)

|  |  |  |
| --- | --- | --- |
| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔRIB,c (dB) |
| DC\_1\_n28 | n28 | 0.2 |
| DC\_1\_n51 | n51 | 0.1 |
| DC\_1\_n77 | 1 | 0.2 |
| n77 | 0.5 |
| DC\_1\_n78 | n78 | 0.5 |
| DC\_2\_n66 | 2 | 0.3 |
| n66 | 0.3 |
| DC\_2\_n78 | 2 | 0.2 |
| n78 | 0.5 |
| DC\_3\_n51 | 3 | 0.2 |
| n51 | 0.2 |
| DC\_3\_n77 | 3 | 0.2 |
| n77 | 0.5 |
| DC\_3\_n78 | 3 | 0.2 |
| n78 | 0.5 |
| DC\_5\_n78 | 5 | 0.2 |
| n78 | 0.5 |
| DC\_7\_n51 | n51 | 0.2 |
| DC\_7\_n77 | n78 | 0.5 |
| DC\_7\_n78 | n78 | 0.5 |
| DC\_8\_n77 | 3 | 0.2 |
| n77 | 0.5 |
| DC\_8\_n78 | 3 | 0.2 |
| n78 | 0.5 |
| DC\_11\_n77 | n77 | 0.5 |
| DC\_11\_n78 | n78 | 0.5 |
| DC\_12A\_n5A | 12 | 0.3 |
| n5 | 0.5 |
| DC\_12A\_n66A | 12 | 0.5 |
| DC\_18\_n77 | n77 | 0.5 |
| DC\_19\_n77 | n77 | 0.5 |
| DC\_19\_n78 | n78 | 0.5 |
| DC\_20\_n51 | n51 | 0.2 |
| DC\_20\_n77 | n77 | 0.5 |
| DC\_20\_n78 | n78 | 0.5 |
| DC\_21\_n77 | n77 | 0.5 |
| DC\_21\_n78 | n78 | 0.5 |
| DC\_25\_n41 | n41 | 0f |
| 0.52 |
| DC\_26A\_n77A | n77 | 0.5 |
| DC\_26\_n78 | n78 | 0.5 |
| DC\_28A\_n51 | n51 | 0.2 |
| DC\_28\_n77 | 28 | 0.2 |
| n77 | 0.5 |
| DC\_28\_n78 | 28 | 0.2 |
| n78 | 0.5 |
| DC\_30\_n66 | 30 | 0.5 |
| n66 | 0.4 |
| DC\_38\_n78 | 38 | 0.4 |
| n78 | 0.5 |
| DC\_39\_n78 | n78 | 0.5 |
| DC\_39\_n79 | n79 | 0.5 |
| DC\_40\_n77 | 40 | 0.4 |
| n77 | 0.5 |
| DC\_41\_n77 | n77 | 0.5 |
| DC\_41\_n78 | n78 | 0.5 |
| DC\_41\_n79 | n79 | 0.5 |
| DC\_42\_n51 | n51 | 0.2 |
| DC\_66A\_n78A | 66 | 0.2 |
| n78 | 0.5 |
| NOTE 1: The requirement is applied for UE transmitting on the frequency range of 2545-2690MHz.  NOTE 2: The requirement is applied for UE transmitting on the frequency range of 2496-2545MHz. | | |

##### 7.3B.3.3.2 ΔRIB,c for EN-DC three bands

Table 7.3B.3.3.2-1: ΔRIB,c due to EN-DC (three bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔRIB,c (dB) |
| --- | --- | --- |
| DC\_1-3\_n28 | n28 | 0.2 |
| DC\_1-3\_n77 | 1 | 0.2 |
| 3 | 0.2 |
| n77 | 0.5 |
| DC\_1-3\_n78 | 1 | 0.2 |
| 3 | 0.2 |
| n78 | 0.5 |
| DC\_1-5\_n78 | 1 | 0.2 |
| 5 | 0.2 |
| n78 | 0.5 |
| DC\_1-7\_n28 | n28 | 0.2 |
| DC\_1-7\_n78  DC\_1-7-7\_n78 | 1 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_1-8\_n78 | 8 | 0.2 |
| n78 | 0.5 |
| DC\_1-18\_n77 | n77 | 0.5 |
| DC\_1-18\_n78 | n78 | 0.5 |
| DC\_1-19\_n77 | n77 | 0.5 |
| DC\_1-19\_n78 | n78 | 0.5 |
| DC\_1-19\_n79 | 1 | 0.3 |
| 19 | 0.3 |
| DC\_1-20\_n28 | 1 | 0.0 |
| 20 | 0.2 |
| n28 | 0.2 |
| DC\_1-20\_n78 | n78 | 0.5 |
| DC\_1-21\_n77 | n77 | 0.5 |
| DC\_1-21\_n78 | 1 | 0.2 |
| n78 | 0.5 |
| DC\_1-28\_n77 | 28 | 0.2 |
| n77 | 0.5 |
| DC\_1-28\_n78 | 28 | 0.2 |
| n78 | 0.5 |
| DC\_1\_n28-n78 | 1 | 0 |
| n28 | 0.2 |
| n78 | 0.5 |
| DC\_1\_n28-n79 | 1 | 0.3 |
| 28 | 0.3 |
| DC\_1-42\_n77 | 1 | 0.2 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_1-41\_n77 | n77 | 0.5 |
| DC\_1-41\_n78 | n78 | 0.5 |
| DC\_1-42\_n78 | 1 | 0.2 |
| 42 | 0.5 |
| n78 | 0.5 |
| DC\_1-42\_n79 | 42 | 0.5 |
| DC\_1\_n77-n79 | 1 | 0.2 |
| n77 | 0.5 |
| n79 | 0.0 |
| DC\_1\_n78-n79 | 1 | 0.0 |
| n78 | 0.5 |
| n79 | 0.0 |
| DC\_1-SUL\_n78-n84 | n78 | 0.5 |
| DC\_2\_5\_n66 | 2 | 0.3 |
| n66 | 0.3 |
| DC\_2\_30\_n66 | 2 | 0.4 |
| 30 | 0.5 |
| n66 | 0.4 |
| DC\_2-66\_n71B | 2 | 0.3 |
| 66 | 0.3 |
| DC\_3\_n3-n77 | 3 | 0.2 |
| n3 | 0.2 |
| n77 | 0.5 |
| DC\_3\_n3-n78 | 3 | 0.2 |
| n3 | 0.2 |
| n78 | 0.5 |
| DC\_3-5\_n78 | 3 | 0.2 |
| 5 | 0.2 |
| n78 | 0.5 |
| DC\_3-7\_n78, DC\_3-7-7\_n78 | 3 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_3-8\_n78 | 3 | 0.2 |
| 8 | 0.2 |
| n78 | 0.5 |
| DC\_3-19\_n77 | 3 | 0.2 |
| n77 | 0.5 |
| DC\_3-19\_n78 | 3 | 0.2 |
| n78 | 0.5 |
| DC\_3-20\_n28 | 20 | 0.1 |
| n28 | 0.1 |
| DC\_3-19\_n79 |  |  |
|  |  |
|  |  |
| DC\_3-20\_n78 | 3 | 0.2 |
| n78 | 0.5 |
| DC\_3-21\_n77 | 3 | 0.3 |
| 21 | 0.5 |
| n77 | 0.5 |
| DC\_3-21\_n78 | 3 | 0.3 |
| 21 | 0.5 |
| n78 | 0.5 |
| DC\_3-21\_n79 | 3 | 0.3 |
| 21 | 0.5 |
| DC\_3-28\_n78 | 3 | 0.2 |
| n78 | 0.5 |
| DC\_3\_n28-n78 | 3 | 0.2 |
| n28 | 0 |
| n78 | 0.5 |
| DC\_3-38\_n78 | 3 | 0.2 |
| 38 | 0.4 |
| n78 | 0.5 |
| DC\_3-41\_n78 | 3 | 0.2 |
| 41 | 01 |
| 0.52 |
| n78 | 0.5 |
| DC\_3-42\_n77 | 3 | 0.2 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_3-42\_n78 | 3 | 0.2 |
| 42 | 0.5 |
| n78 | 0.5 |
| DC\_3-42\_n79 | 3 | 0.2 |
| 42 | 0.5 |
| DC\_3\_n77-n79 | 3 | 0.2 |
| n77 | 0.5 |
| n79 | 0.0 |
| DC\_3\_n78-n79 | 3 | 0.2 |
| n78 | 0.5 |
| n79 | 0.0 |
| DC\_3-SUL\_n78-n80 | 3 | 0.2 |
| n78 | 0.5 |
| n80 | 0.2 |
| DC\_3-SUL\_n78-n82 | 3 | 0.2 |
| n78 | 0.5 |
| DC\_5-7\_n78 | 5 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_5\_30\_n66 | 30 | 0.5 |
| n66 | 0.4 |
| DC\_7-7\_n78 | 7 | 0.0 |
| n78 | 0.5 |
| DC\_7-20\_n28 | 20 | 0.2 |
| n28 | 0.2 |
| DC\_7-20\_n78 | n78 | 0.5 |
| DC\_7-28\_n78 | n78 | 0.5 |
| DC\_7\_n28-n78 | n78 | 0.5 |
| DC\_7-46\_n78 | n78 | 0.5 |
| DC\_8A-SUL\_n78-n81 | 8 | 0.2 |
| n78 | 0.2 |
| n81 | 0.2 |
| DC\_18-28\_n77 | n77 | 0.5 |
| DC\_18-28\_n78 | n78 | 0.5 |
| DC\_19-21\_n77 | n77 | 0.5 |
| DC\_19-21\_n78 | n78 | 0.5 |
| DC\_19-42\_n77 | 42 | 0.5 |
| n77 | 0.5 |
| DC\_19-42\_n78 | 42 | 0.5 |
| n78 | 0.5 |
| DC\_19-42\_n79 | 42 | 0.5 |
| DC\_19\_n77-n79 | 19 | 0.0 |
| n77 | 0.5 |
| n79 | 0.0 |
| DC\_19\_n78-n79 | 19 | 0.0 |
| n78 | 0.5 |
| n79 | 0.0 |
| DC\_20\_n8-n75 | 20 | 0.0 |
| n8 | 0.0 |
| n75 | 0.0 |
| DC\_20\_n28-n75 | 20 | 0.0 |
| n28 | 0.2 |
| n75 | 0.0 |
| DC\_20\_n28-n78 | 20 | 0.2 |
| n28 | 0.2 |
| n78 | 0.5 |
| DC\_20\_n75-n78 | 20 | 0.0 |
| n75 | 0.0 |
| n78 | 0.5 |
| DC\_20\_n76-n78 | 20 | 0.0 |
| n76 | 0.0 |
| n78 | 0.5 |
| DC\_20-SUL\_n78-n82 | n78 | 0.5 |
| DC\_20-SUL\_n78-n83 | 20 | 0.2 |
| n78 | 0.5 |
| n83 | 0.2 |
| DC\_21-42\_n77 | 42 | 0.5 |
| n77 | 0.5 |
| DC\_21-42\_n78 | 42 | 0.5 |
| n78 | 0.5 |
| DC\_21-42\_n79 | 42 | 0.5 |
| DC\_21\_n77-n79 | 21 | 0.0 |
| n77 | 0.5 |
| n79 | 0.0 |
| DC\_21\_n78-n79 | 21 | 0.0 |
| n78 | 0.5 |
| n79 | 0.0 |
| DC\_28-SUL\_n78-n83 | 28 | 0.2 |
| n78 | 0.5 |
| n83 | 0.2 |
| DC\_28-42\_n77 | 28 | 0.2 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_28-42\_n78 | 28 | 0.2 |
| 42 | 0.5 |
| n78 | 0.5 |
| DC\_28-42\_n79 | 28 | 0.2 |
| 42 | 0.5 |
| DC\_41-42\_n77 | 42 | 0.5 |
| n77 | 0.5 |
| DC\_41-42\_n78 | 42 | 0.5 |
| n78 | 0.5 |
| DC\_41-42\_n79 | 42 | 0.5 |
| DC\_41\_n77 | n77 | 0.5 |
| DC\_41\_n78 | n78 | 0.5 |
| DC\_41\_n79 | n79 | 0.5 |
| DC\_66-SUL\_n78-n86 | 66 | 0.2 |
| n78 | 0.5 |
| n86 | 0.2 |
| NOTE 1: The requirement is applied for UE transmitting on the frequency range of 2545-2690MHz.  NOTE 2: The requirement is applied for UE transmitting on the frequency range of 2496-2545MHz. | | |

##### 7.3B.3.3.3 ΔRIB,c for EN-DC four bands

Table 7.3B.3.3.3-1: ΔRIB,c due to EN-DC (four bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔRIB,c (dB) |
| --- | --- | --- |
| DC\_1-3-5\_n78 | 1 | 0.2 |
| 3 | 0.2 |
| n78 | 0.5 |
| DC\_1-3-7\_n28 | n28 | 0.2 |
| DC\_1-3-7\_n78  DC\_1-3-7-7\_n78 | 1 | 0.3 |
| 3 | 0.3 |
| 7 | 0.3 |
| n78 | 0.5 |
| DC\_1-3-8\_n78 | 1 | 0.2 |
| 3 | 0.2 |
| 8 | 0.2 |
| n78 | 0.5 |
| DC\_1-3-28\_n77 | 1 | 0.2 |
| 3 | 0.2 |
| 28 | 0.2 |
| n77 | 0.5 |
| DC\_1-3-28\_n78  DC\_1-3\_n28-n78 | 1 | 0.2 |
| 3 | 0.2 |
| 28 or n28 | 0.2 |
| n78 | 0.5 |
| DC\_1-3-28\_n79 | 1 | 0.2 |
| 3 | 0.2 |
| 28 | 0.2 |
| DC\_1-3-19\_n78 | 1 | 0.2 |
| 3 | 0.2 |
| n78 | 0.5 |
| DC\_1-3-20\_n28 | 20 | 0.2 |
| n28 | 0.2 |
| DC\_1-3-20\_n78 | 1 | 0.2 |
| 3 | 0.2 |
| n78 | 0.5 |
| DC\_1-3-21\_n77 | 1 | 0.2 |
| 3 | 0.3 |
| 21 | 0.5 |
| n77 | 0.5 |
| DC\_1-3-21\_n78 | 1 | 0.2 |
| 3 | 0.3 |
| 21 | 0.5 |
| n78 | 0.5 |
| DC\_1-3-21\_n79 | 3 | 0.3 |
| 21 | 0.5 |
| DC\_1-3-42\_n77 | 1 | 0.2 |
| 3 | 0.2 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_1-3-42\_n78 | 1 | 0.2 |
| 3 | 0.2 |
| 42 | 0.5 |
| n78 | 0.5 |
| DC\_1-3-42\_n79 | 1 | 0.2 |
| 3 | 0.2 |
| 42 | 0.5 |
| DC\_1-5-7\_n78  DC\_1-5-7-7\_n78 | 1 | 0.2 |
| 5 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_1-7-20\_n28 | 20 | 0.2 |
| n28 | 0.2 |
| DC\_1-7-20\_n78 | 1 | 0.2 |
| 7 | 0.2 |
| 20 | 0.2 |
| n78 | 0.5 |
| DC\_1-7\_n28-n78 | 1 | 0.2 |
| 7 | 0.2 |
| n28 | 0.2 |
| n78 | 0.5 |
| DC\_1-18-28\_n77 | n77 | 0.5 |
| DC\_1-18-28\_n78 | n78 | 0.5 |
| DC\_1-19-42\_n77 | 1 | 0.2 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_1-19-42\_n78 | 42 | 0.5 |
| n78 | 0.5 |
| DC\_1-19-42\_n79 | 42 | 0.5 |
| DC\_1-20\_n28-n78 | 1 | 0.0 |
| 20 | 0.2 |
| n28 | 0.2 |
| n78 | 0.5 |
| DC\_1-21-42\_n77 | 1 | 0.2 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_1-21-42\_n78 | 42 | 0.5 |
| n78 | 0.5 |
| DC\_1-21-42\_n79 | 42 | 0.5 |
| DC\_1-28-42\_n77 | 1 | 0.2 |
| 28 | 0.2 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_1-28-42\_n78 | 28 | 0.2 |
| 42 | 0.5 |
| n78 | 0.5 |
| DC\_1-28-42\_n79 | 28 | 0.2 |
| 42 | 0.5 |
| DC\_1-41-42\_n77 | 42 | 0.5 |
| n77 | 0.5 |
| DC\_1-41-42\_n78 | 42 | 0.5 |
| n78 | 0.5 |
| DC\_1-41-42\_n79 | 42 | 0.5 |
| DC\_1-41-42\_n79 | 42 | 0.5 |
| DC\_2-66-(n)71B | 2 | 0.3 |
| 66 | 0.3 |
| DC\_3-5-7\_n78, DC\_3-5-7-7\_n78 | 3 | 0.2 |
| 5 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_3-7-7\_n78 | 3 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_3-7-20\_n28 | 20 | 0.2 |
| n28 | 0.1 |
| DC\_3-7-20\_n78 | 3 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_3-7-28\_n78  DC\_3-7\_n28-n78 | 3 | 0.2 |
| 7 | 0.2 |
| 28 or n28 | 0.2 |
| n78 | 0.5 |
| DC\_3-19-21\_n77 | 3 | 0.3 |
| 21 | 0.5 |
| n77 | 0.5 |
| DC\_3-19-21\_n78 | 3 | 0.3 |
| 21 | 0.5 |
| n78 | 0.5 |
| DC\_3-19-21\_n79 | 3 | 0.3 |
| 21 | 0.5 |
| DC\_3-19-42\_n77 | 3 | 0.2 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_3-19-42\_n78 | 0.2 | 0.2 |
| 0.5 | 0.5 |
| 0.5 | 0.5 |
| DC\_3-19-42\_n79 | 3 | 0.2 |
| 42 | 0.5 |
| DC\_3-20\_n28-n78 | 3 | 0.2 |
| 20 | 0.2 |
| n28 | 0.2 |
| n78 | 0.5 |
| DC\_3-21-42\_n77 | 3 | 0.3 |
| 21 | 0.5 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_3-21-42\_n78 | 3 | 0.3 |
| 21 | 0.5 |
| 42 | 0.5 |
| n78 | 0.5 |
| DC\_3-21-42\_n79 | 3 | 0.3 |
| 21 | 0.5 |
| 42 | 0.5 |
| DC\_3-28-42\_n77 | 3 | 0.2 |
| 28 | 0.2 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_3-28-42\_n78 | 3 | 0.2 |
| 28 | 0.2 |
| 42 | 0.5 |
| n78 | 0.5 |
| DC\_3-28-42\_n79 | 3 | 0.2 |
| 28 | 0.2 |
| 42 | 0.5 |
| DC\_5-7-7\_n78 | 5 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_7-20\_n28-n78 | 7 | 0.0 |
| 20 | 0.2 |
| n28 | 0.2 |
| n78 | 0.5 |
| DC\_19-21-42\_n77 | 42 | 0.5 |
| n77 | 0.5 |
| DC\_19-21-42\_n78 | 42 | 0.5 |
| n78 | 0.5 |
| DC\_19-21-42\_n79 | 42 | 0.5 |
| DC\_21-28-42\_n77 | 28 | 0.2 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_21-28-42\_n78 | 28 | 0.2 |
| 42 | 0.5 |
| n78 | 0.5 |
| DC\_21-28-42\_n79 | 28 | 0.2 |
| 42 | 0.5 |

##### 7.3B.3.3.4 ΔRIB,c for EN-DC five bands

Table 7.3B.3.3.4-1: ΔRIB,c due to EN-DC (five bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔRIB,c (dB) |
| --- | --- | --- |
| DC\_1-3-5-7\_n78,  DC\_1-3-5-7-7\_n78 | 1 | 0.2 |
| 3 | 0.2 |
| 5 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_1-3-7-20\_n28 | 20 | 0.2 |
| n28 | 0.2 |
| DC\_1-3-7-20\_n78 | 1 | 0.2 |
| 3 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_1-3-7\_n28-n78 | 1 | 0.2 |
| 3 | 0.2 |
| 7 | 0.2 |
| n28 | 0.2 |
| n78 | 0.5 |
| DC\_1-3-19-21\_n77 | 1 | 0.2 |
| 3 | 0.3 |
| 21 | 0.5 |
| n77 | 0.5 |
| DC\_1-3-19-21\_n78 | 1 | 0.2 |
| 3 | 0.3 |
| 21 | 0.5 |
| n78 | 0.5 |
| DC\_1-3-19-21\_n79 | 3 | 0.3 |
| 21 | 0.5 |
| DC\_1-3-19-42\_n77 | 1 | 0.2 |
| 3 | 0.2 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_1-3-19-42\_n78 | 1 | 0.2 |
| 3 | 0.2 |
| 42 | 0.5 |
| n78 | 0.5 |
| DC\_1-3-19-42\_n79 | 1 | 0.2 |
| 3 | 0.2 |
| 42 | 0.5 |
| DC\_1-3-28-42\_n77 | 1 | 0.2 |
| 3 | 0.2 |
| 28 | 0.2 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_1-3-28-42\_n78 | 1 | 0.2 |
| 3 | 0.2 |
| 28 | 0.2 |
| 42 | 0.5 |
| n78 | 0.5 |
| DC\_1-3-28-42\_n79 | 1 | 0.2 |
| 3 | 0.2 |
| 28 | 0.2 |
| 42 | 0.5 |
| DC\_1-3-20\_n28-n78 | 1 | 0.2 |
| 3 | 0.2 |
| 20 | 0.2 |
| n28 | 0.2 |
| n78 | 0.5 |
| DC\_1-3-21-42\_n77 | 1 | 0.2 |
| 3 | 0.3 |
| 21 | 0.5 |
| 42 | 0.5 |
| n77 | 0.2 |
| DC\_1-3-21-42\_n78 | 1 | 0.2 |
| 3 | 0.3 |
| 21 | 0.5 |
| 42 | 0.5 |
| n78 | 0.2 |
| DC\_1-3-21-42\_n79 | 1 | 0.2 |
| 3 | 0.3 |
| 21 | 0.5 |
| 42 | 0.5 |
| DC\_1-7-20\_n28-n78 | 1 | 0.2 |
| 7 | 0.2 |
| 20 | 0.2 |
| n28 | 0.2 |
| n78 | 0.5 |
| DC\_1-19-21-42\_n77 | 1 | 0.2 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_1-19-21-42\_n78 | 42 | 0.5 |
| n78 | 0.5 |
| DC\_1-19-21-42\_n79 | 42 | 0.5 |
| DC\_1-21-28-42\_n77 | 1 | 0.2 |
| 28 | 0.2 |
| 42 | 0.5 |
| n77 | 0.5 |
| DC\_1-21-28-42\_n78 | 28 | 0.2 |
| 42 | 0.5 |
| n78 | 0.5 |
| DC\_1-21-28-42\_n79 | 28 | 0.2 |
| 42 | 0.5 |
| DC\_3-7-20\_n28-n78 | 3 | 0.2 |
| 7 | 0.2 |
| 20 | 0.2 |
| n28 | 0.2 |

##### 7.3B.3.3.5 ΔRIB,c for EN-DC six bands

Table 7.3B.3.3.5-1: ΔRIB,c due to EN-DC (six bands)

|  |  |  |
| --- | --- | --- |
| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔRIB,c (dB) |
| DC\_1-3-7-20\_n28-n78 | 1 | 0.2 |
| 3 | 0.2 |
| 7 | 0.2 |
| 20 | 0.2 |
| n28 | 0.2 |
| n78 | 0.5 |

#### 7.3B.3.4 Inter-band EN-DC including FR2

##### 7.3B.3.4.1 ΔRIB,c for EN-DC in two bands

Table 7.3B.3.4.1-1: ΔRIB,c due to EN-DC(two bands)

|  |  |  |
| --- | --- | --- |
| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔRIB,c (dB) |
|  |  |  |
|  |  |

##### 7.3B.3.4.2 ΔRIB,c for EN-DC three bands

Table 7.3B.3.4.2-1: ΔRIB,c due to EN-DC (three bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔRIB,c (dB) |
| --- | --- | --- |
| DC\_1-18\_n257 | 1 | 0.3 |
| 18 | 0.3 |
| DC\_1-28\_n257 | 28 | 0.2 |
| DC\_1-41\_n257 | 1 | 0.5 |
| 41 | 0.5 |
| DC\_1-42\_n257 | 1 | 0 |
| 42 | 0.5 |
| DC\_1-77\_n257 | 1 | 0.2 |
| n77 | 0.5 |
| DC\_1-78\_n257 | 1 | 0 |
| n78 | 0.5 |
| DC\_1-79\_n257 | 1 | 0.0 |
| n79 | 0.0 |
| DC\_2-66\_n257 | 2 | 0.3 |
| 66 | 0.3 |
| DC\_3-21\_n257 | 3 | 0.3 |
| 21 | 0.5 |
| DC\_3-28\_n257 | n257 | 0.5 |
| DC\_3-41\_n257 | 41 | 01/0.52 |
| DC\_3-42\_n257 | 3 | 0.2 |
| 42 | 0.5 |
| DC\_3-77\_n257 | 3 | 0.2 |
| n77 | 0.5 |
| DC\_3-78\_n257 | 3 | 0.2 |
| n78 | 0.5 |
| DC\_3-79\_n257 | 3 | 0.0 |
| n79 | 0.0 |
| DC\_5\_n78-n257 | 5 | 0.2 |
| n78 | 0.5 |
| DC\_7\_n78-n257 | 7 | 0 |
| n78 | 0.5 |
| DC\_13-66\_n260 | 13 | 0.3 |
| 66 | 0.3 |
| DC\_19-42\_n257 | 42 | 0.5 |
| DC\_19-77\_n257 | 19 | 0.0 |
| n77 | 0.5 |
| DC\_19-78\_n257 | 19 | 0.0 |
| n78 | 0.5 |
| DC\_19-79\_n257 | 19 | 0.0 |
| n79 | 0.0 |
| DC\_21-42\_n257 | 42 | 0.5 |
| DC\_21-77\_n257 | 21 | 0.0 |
| n77 | 0.5 |
| DC\_21-78\_n257 | 21 | 0.0 |
| n78 | 0.5 |
| DC\_21-79\_n257 | 21 | 0.0 |
| n79 | 0.0 |
| DC\_28-42\_n257 | 28 | 0.2 |
| 42 | 0.5 |
| DC\_41-42\_n257 | 42 | 0.5 |
| NOTE 1: The requirement is applied for UE transmitting on the frequency range of 2545-2690MHz.  NOTE 2: The requirement is applied for UE transmitting on the frequency range of 2496-2545MHz. | | |

##### 7.3B.3.4.3 ΔRIB,c for EN-DC four bands

Table 7.3B.3.4.3-1: ΔRIB,c due to EN-DC (four bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔRIB,c (dB) |
| --- | --- | --- |
| DC\_1-3-21\_n257 |  |  |
| 3 | 0.3 |
| 21 | 0.5 |
| DC\_1-3-28\_n257 | 1 | 0.2 |
| 3 | 0.2 |
| 28 | 0.2 |
| DC\_1-3-42\_n257 | 1 | 0.2 |
| 3 | 0.2 |
| 42 | 0.5 |
| DC\_1-3\_n78-n257 | 1 | 0.2 |
| 3 | 0.2 |
| n78 | 0.5 |
| DC\_1-5\_n78-n257 | 1 | 0.2 |
| 5 | 0.2 |
| n78 | 0.5 |
| DC\_1-7\_n78-n257 | 1 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_1-19-42\_n257 | 42 | 0.5 |
| DC\_1-21-28\_n257 | 28 | 0.2 |
| DC\_1-21-42\_n257 | 42 | 0.5 |
| DC\_1-28-42\_n257 | 28 | 0.2 |
| DC\_1-41-42\_n257 | 42 | 0.5 |
| DC\_3-5\_n78-n257 | 3 | 0.2 |
| 5 | 0.2 |
| n78 | 0.5 |
| DC\_3-7\_n78-n257 | 3 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_19-21-42\_n257 | 42 | 0.5 |
| DC\_3-19-21\_n257 | 3 | 0.3 |
| 21 | 0.5 |
| DC\_3-19-42\_n257 | 3 | 0.2 |
| 42 | 0.5 |
| DC\_3-21-42\_n257 | 3 | 0.3 |
| 21 | 0.5 |
| 42 | 0.5 |
| DC\_3-28-42\_n257 | 3 | 0.2 |
| 28 | 0.2 |
| 42 | 0.5 |
| DC\_5-7\_n78-n257 | 5 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_7-7\_n78-n257 | n78 | 0.5 |
| DC\_21-28-42\_n257 | 28 | 0.2 |
| 42 | 0.5 |

##### 7.3B.3.4.4 ΔRIB,c for EN-DC five bands

Table 7.3B.3.4.4-1: ΔRIB,c due to EN-DC (five bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔRIB,c (dB) |
| --- | --- | --- |
| DC\_1-3-5\_n78-n257 | 1 | 0.2 |
| 3 | 0.2 |
| 5 | 0.2 |
| n78 | 0.5 |
| DC\_1-3-7\_n78-n257 | 1 | 0.3 |
| 3 | 0.3 |
| 7 | 0.3 |
| n78 | 0.5 |
| DC\_1-3-19-21\_n257 | 3 | 0.3 |
| 21 | 0.5 |
| DC\_1-3-19-42\_n257 | 1 | 0.2 |
| 3 | 0.2 |
| 42 | 0.5 |
| DC\_1-3-21-42\_n257 | 1 | 0.2 |
| 3 | 0.3 |
| 21 | 0.5 |
| 42 | 0.5 |
| DC\_1-3-28-42\_n257 | 1 | 0.2 |
| 3 | 0.2 |
| 28 | 0.2 |
| 42 | 0.5 |
| DC\_1A-3A-28A-42C\_n257A | 1 | 0.2 |
| 3 | 0.2 |
| 28 | 0.2 |
| 42 | 0.5 |
| DC\_1-5-7\_n78-n257 | 1 | 0.2 |
| 5 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_1-7-7\_n78-n257 | 1 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_1-19-21-42\_n257 | 42 | 0.5 |
| DC\_1-21-28-42\_n257 | 28 | 0.2 |
| 42 | 0.5 |
| DC\_3-5-7\_n78-n257 | 3 | 0.2 |
| 5 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_3-7-7\_n78-n257 | 3 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_5-7-7\_n78-n257 | 5 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |

##### 7.3B.3.4.5 ΔRIB,c for EN-DC six bands

Table 7.3B.3.4.5-1: ΔRIB,c due to EN-DC (six bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔRIB,c (dB) |
| --- | --- | --- |
| DC\_1-3-5-7\_n78-n257 | 1 | 0.2 |
| 3 | 0.2 |
| 5 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_1-3-7-7\_n78-n257 | 1 | 0.3 |
| 3 | 0.3 |
| 7 | 0.3 |
| n78 | 0.5 |
| DC\_1-5-7-7\_n78-n257 | 1 | 0.2 |
| 5 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |
| DC\_3-5-7-7\_n78-n257 | 3 | 0.2 |
| 5 | 0.2 |
| 7 | 0.2 |
| n78 | 0.5 |

#### 7.3B.3.5 Inter-band EN-DC including both FR1 and FR2

##### 7.3B.3.5.2 ΔRIB,c for EN-DC three bands

Table 7.3B.3.5.2-1: ΔRIB,c due to EN-DC (three bands)

|  |  |  |
| --- | --- | --- |
| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔRIB,c (dB) |
| DC\_1\_n77-n257 | 1 | 0.2 |
| n77 | 0.5 |
| DC\_1\_n78-n257 | n78 | 0.5 |
| DC\_3\_n77-n257 | 3 | 0.2 |
| n77 | 0.5 |
| DC\_3\_n78-n257 | 3 | 0.2 |
| n78 | 0.5 |
| DC\_19\_n77-n257 | n77 | 0.5 |
| DC\_19\_n78-n257 | n78 | 0.5 |

Annex A (normative):  
Dual uplink interferer

UE is mandated to support operation in dual uplink mode also in EN-DC configuration for FR1 listed in Table 7.3.2.1.5-1 and indicated by column single uplink allowed if the intermodulation products caused by the dual uplink operation do not interfere own downlink transmission.

Formula for determining if the EN-DC in NR FR1 configuration with dual uplink operation interferes own downlink reception.

Interference bandwidth: IBW = |a| \* CBW1 + |b| \* CBW2

- |a| + |b| = 2 (or 3)

- CBW1 and CBW2 are the transmission bandwidth configurations of the UL channels

Center frequency of IBW: fIBW = |a \* f1 + b \* f2|

- f1 and f2 are center frequency of the transmission bandwidth configurations of each UL channel

The range of IMD 2 (or 3): [fIBW – IBW/2, fIBW + IBW/2]

NOTE 1: UE shall be able to apply operations which are configured by RRC reconfiguration and corresponding HARQ timing on the transmission bandwidth.

NOTE 2: For identified difficult band combination, during two adjacent RRC reconfiguration, the changing of transmission bandwidth should not introduce IM2 and IM3, which will result in UE changing from 2Tx to 1Tx. Otherwise, UE behavior is not specified.

For DC\_3A\_n3A intra-band non-contiguous EN-DC combination, only single switched UL is supported in rel.15.

Annex B (informative):  
Change history

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Change history** | | | | | | | |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 2017-08 | RAN4#84 |  |  |  |  | Initial Skeleton | 0.0.1 |
| 2017-11 | RAN4#84Bis | R4-1711980 |  |  |  | Number TPs from editors | 0.1.0 |
| 2017-12 | RAN4#85 | R4-1713807 |  |  |  | Approved TPs in RAN4#85  R4-1714444, CA BW classes, TP, Ericsson  R4-1714170, How to list DC configurations into TS 38.101-3, Nokia  R4-1714530, TP on introducing operating bands for NR-LTE DC including SUL band combinations in 38.101-3 , Qualcomm  R4-1714098, TP to TS 38.101-3: UE RF requirements for non-standalone SUL, Huawei  R4-1713206, TP on general parts for 38.101-3 NR interwork, Ericsson  R4-1714443, TP to TS 38.101-3: On dual uplink operation for EN-DC in NR FR1 and single uplink, Nokia  R4-1714450, TP to 38.101-3: maximum output power and unwanted emissions for EN-DC, Ericsson  R4-1714346, TP to 38.101-3: REFSENS for intra-band EN-DC, Ericsson  R4-1714345, TP for TS 36.101-3: clause 7 receiver requirements, Huawei  Band list according to R4-1714542, List of bands and band combinations to be introduced into RAN4 NR core requirements by December 2017, RAN4 Chairmen | 0.2.0 |
| 2017-12 | RAN4#85 | R4-1714571 |  |  |  | Further corrections after email review | 0.3.0 |
| 2017-12 | RAN#78 | RP-172477 |  |  |  | v1.0.0 submitted for plenary approval. Contents same as 0.3.0 | 1.0.0 |
| 2017-12 | RAN#78 |  |  |  |  | Approved by plenary – Rel-15 spec under change control | 15.0.0 |
| 2018-03 | RAN#79 | RP-180264 | 0005 |  | F | Implementation of endorsed CRs to 38.101-3  Endorsed draft CR  F: R4-1801267, Draft CR on UE RF requirements for SUL in TS 38.101-3, Huawei  B: R4-1801111, Draft CR for completed LTE 1CC + NR 1band for TS 38.101-3, NTT DOCOMO, INC.  B: R4-1800716, Draft CR for introduction of completed band combinations from 37.863-03-01 into 38.101-3, Ericsson  B: R4-1800063, Draft CR for completed EN-DC of LTE 4CC + NR 1band for TS 38.101-3, Nokia  B: R4-1800717, Draft CR for introduction of completed band combinations from 37.865-01-01 into 38.101-3, Ericsson  F: R4-1800049, Modification for TS38.101-3, CATT  F: R4-1800287, 38.101-3 DC\_(n)71B draft CR for section 6.2.4.1 - A-MPR for intra-band EN-DC - NS value, T-Mobile USA Inc.  F: R4-1800288, 38.101-3 DC\_(n)71B draft CR for section 7.3.3 Reference sensitivity for DC\_(n)71B - MSD values, T-Mobile USA Inc.  F: R4-1801139 Draft CR to 38.101-3: MSD for inter-band EN-DC, Ericsson | 15.1.0 |
| 2018-06 | RAN#80 | RP-181374 | 0013 | 1 | F | CR to TS 38.101-3: Implementation of endorsed draft CRs from RAN4 #87  **Missing figures (Figure 6.3B.1.1-1, Figure 6.3B.1.1-2, Figure 6.3B.1.1-3 and Figure 6.3B.1.1-4) from the endorsed draftCR (R4-1807235) were added during the CR implementation.** | 15.2.0 |