3GPP TS 36.307 V10.24.0 (2018-06)

Technical Specification

3rd Generation Partnership Project;

Technical Specification Group Radio Access Network;

Evolved Universal Terrestrial Radio Access (E-UTRA);   
Requirements on User Equipments (UEs)

Supporting a release-independent frequency band

(Release 10)

 

The present document has been developed within the 3rd Generation Partnership Project (3GPP TM) and may be further elaborated for the purposes of 3GPP.  
The present document has not been subject to any approval process by the 3GPPOrganizational Partners and shall not be implemented.

This Specification is provided for future development work within 3GPPonly. The Organizational Partners accept no liability for any use of this Specification.  
Specifications and reports for implementation of the 3GPP TM system should be obtained via the 3GPP Organizational Partners' Publications Offices.

***3GPP***

Postal address

3GPP support office address

650 Route des Lucioles - Sophia Antipolis

Valbonne - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Internet

http://www.3gpp.org

***Copyright Notification***

No part may be reproduced except as authorized by written permission.  
The copyright and the foregoing restriction extend to reproduction in all media.

© 2018, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).

All rights reserved.

UMTS™ is a Trade Mark of ETSI registered for the benefit of its members

3GPP™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners  
LTE™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners

GSM® and the GSM logo are registered and owned by the GSM Association

Contents

Foreword 4

1 Scope 5

2 References 5

3 Definitions and abbreviations 5

3.1 Definitions 5

3.2 Abbreviations 6

3.3 Symbols 6

3A Release independent features 6

3A.0 General 6

3A.1 Additional E-UTRA operating bands 6

3A.2 Additional E-UTRA CA configurations 7

3A.3 Additional operating bands and/or CA configurations for specific features 8

3A.4 Other release independent features 8

4 - 292 Void 9

Annex A (informative): Frequency arrangement for overlapping operating bands 10

Annex B (normative): Common Requirements 11

B.1 Purpose of annex 11

B.2 Common RRM requirements 11

B.2.1 Common RRM requirements for a release independent band 11

B.2.2 Void 11

B.2.3 Void 12

B.3 Common UE performance requirements 12

B.3.1 Void 12

B.3.2 Void 12

B.3.3 Void 12

B.4 Common UE RF requirements 12

B.4.1 Common UE RF requirements for a release independent band 12

B.4.2 Void 12

B.4.3 Void 12

Annex C (informative): Change history 13

# Foreword

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

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

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

# 1 Scope

The present document specifies requirements for Rel-10 UEs supporting release independent features like:

- additional E-UTRA operating frequency bands on top of Rel-10 of TS 36.101 [2] and TS 36.133 [3];

- additional E-UTRA CA configurations (intra-band/inter-band) on top of Rel-10 of TS 36.101 [2] and TS 36.133 [3];

- additional operating bands and/or CA configurations for specific features;

- other release independent features (like 4Rx antenna port).

# 2 References

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

 References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

 For a specific reference, subsequent revisions do not apply.

 For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 36.101: "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) Radio Transmission and Reception".

NOTE: The considered release is given in the text of the present document that uses [2].

[3] 3GPP TS 36.133: "Evolved Universal Terrestrial Radio Access (E-UTRA); Requirements for Support of Radio Resource Management".

NOTE: The considered release is given in the text of the present document that uses [3].

[4] 3GPP TS 36.306: "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) radio access capabilities".

NOTE: The considered release is given in the text of the present document that uses [4].

[5] Void.

# 3 Definitions 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].

**release independent**: applicable to some frozen releases, starting from a certain release Rel-M

NOTE 1: Normally, a feature is introduced only in the latest open release Rel-N and future releases are based on the previous one so that future releases inherit the requirements of this feature. Introducing a feature "in a release independent way from Rel-M onwards" (M<N) means it was decided by TSG RAN that this feature would be also beneficial in previous, already frozen releases starting with Rel-M until Rel-(N-1). In order to avoid touching TS 36.101 [2] or TS 36.133 [3] of these frozen releases, the corresponding requirements are captured in TS 36.307 via pointers to [2] or [3] of the release in which the feature was introduced.

NOTE 2: Release independent does not mean applicable to all releases.

## 3.2 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].

4Rx 4 UE receiver antenna ports

CA Carrier Aggregation

CSI Channel State Indicator

FDD Frequency Division Duplex

RRC Radio Resource Control

RRM Radio Resource Management

TDD Time Division Duplex

UE User Equipment

## 3.3 Symbols

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

N Release in which a feature is introduced into TS 36.101 [2] or TS 36.133 [3]

M Release from which onwards (including release M) a feature is release independent

# 3A Release independent features

## 3A.0 General

TSG-RAN has agreed for certain features (see the following clauses) to introduce them in a "release independent way".

This means for each feature:

- it is "introduced" in a release N, i.e. TS 36.101 [2] and TS 36.133 [3] of release N define certain UE requirements for this feature; the feature is indicated in the tables of the following clauses;

- it is "release independent" starting from a release M (M<N); M for the given feature is provided in the tables of the following clauses;

- UEs supporting this feature have to fulfill additional requirements in release M or higher which are specified in one or more Annexes of TS 36.307 of release N; the applicable Annexes for a given feature are provided in the tables of the following clauses.

The applicable UE Categories are specified in TS 36.306 [4] according to the release to which the UE conforms.

## 3A.1 Additional E-UTRA operating bands

Requirements for a Rel-10 UE for additional E-UTRA operating bands compared to TS 36.101 Rel-10 [2] are introduced via this clause.

Table 3A.1-1: E-UTRA operating bands and UE power class

|  |  |  |  |
| --- | --- | --- | --- |
| Feature | Duplex-mode | Release  independent from | Requirements to be fulfilled  (see TS 36.307 of the release in which the band was introduced) |
| Operating bands, band number <= 64, Power Class 3 | FDD, TDD | Rel-8 | Table B.2.1-1, Table B.4.1-1 |
| Operating bands, band number > 64, Power Class 3 | FDD, TDD | Rel-9 | Table B.2.1-1, Table B.4.1-1 |
| Operating bands, NS-value > 32 | FDD, TDD | Rel-10 | Table B.2.1-1, Table B.4.1-1 |
| Asymmetric operating bands, Power Class 3 | FDD | Rel-10 | Table B.2.1-1, Table B.4.1-1 |
| Operating bands, band number <= 64, Power Class 1 | FDD | Rel-10 | Table B.2.1-1, Table B.4.1-1 |
| Operating bands, Power Class 2 | TDD | Rel-10 | Table B.2.1-1, Table B.4.1-1 |

For example, Band 19 was introduced in the Release 9 specifications. In order to implement a UE conforming to Release 8 but supporting Band 19, it is necessary for the UE to additionally conform to some parts of the Release 9 specifications (see corresponding Annexes of TS 36.307 Rel-9 which will point to the requirements in the Rel-9 of TS 36.101 [2] or TS 36.133 [3] to be fulfilled), such as the radio frequency and radio resource management requirements for the Band 19.

## 3A.2 Additional E-UTRA CA configurations

Requirements for a Rel-10 UE for additional E-UTRA CA configurations compared to TS 36.101 Rel-10 [2] are introduced via this clause.

Table 3A.2-1: Intra-band contiguous CA configurations

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Feature | DL/UL | CA BW Class | Duplex-mode | Release  independent from | requirements to be fulfilled  (see 36.307 of the REL in which the CA configuration was introduced) |
| Intra-band contiguous CA configurations, power class 3 | DL | B | FDD | Rel-10 | Table B.2.2-1, Table B.3.2-1, Table B.4.2-1 |
| C | FDD, TDD | Rel-10 | Table B.2.2-1, Table B.3.2-1, Table B.4.2-1 |
| D | TDD | Rel-10 | Table B.2.2-1, Table B.3.2-1, Table B.4.2-1 |
| UL | B | FDD | Rel-10 | Table B.2.2-1, Table B.3.2-1, Table B.4.2-1 |
| C, D | FDD, TDD | Rel-10 | Table B.2.2-1, Table B.3.2-1, Table B.4.2-1 |
| Intra-band contiguous CA configurations, power class 2 | UL | C | TDD | Rel-10 | Table B.2.2-1, Table B.3.2-1, Table B.4.2-1 |
| NOTE1: The duplex mode "FDD, TDD" refers to a CA configuration composed by only FDD bands or only TDD bands, respectively. | | | | | |

Table 3A.2-2: Inter-band CA configurations

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| CA feature | DL/UL | number of bands | number of CCs | CA BW Classes | Duplex-mode | Release  independent from | requirements to be fulfilled  (see 36.307 of the REL in which the CA configuration was introduced) |
| Inter-band CA configurations | DL | 2 | 2-4 | A, B, C | FDD, TDD | Rel-10 | Table B.2.4-1, Table B.3.2-1, Table B.4.3-1 or Table B.4.4-1 |
| 3 | 3 | A | FDD, TDD | Rel-10 | Table B.2.4-1, Table B.3.2-1, Table B.4.3-1 or Table B.4.4-1 |
| NOTE1: The duplex mode "FDD, TDD" refers to a CA configuration composed by only FDD bands or only TDD bands, respectively. | | | | | | | |

For example, CA configuration CA\_1A-19A was introduced in the Release 11 specifications. In order to implement a UE conforming to Release 10 but supporting the CA configuration CA\_1A-19A, it is necessary for the UE to additionally conform to some parts of the Release 11 specifications (see corresponding Annexes of TS 36.307 Rel-11 which will point to the requirements in the Rel-11 of TS 36.101 [2] or TS 36.133 [3] to be fulfilled),, such as the radio frequency and radio resource management requirements for the CA configuration CA\_1A-19A.

## 3A.3 Additional operating bands and/or CA configurations for specific features

For a specific feature introduced in an earlier release, it may be decided in a later release to apply this specific feature in a release independent way for additional operating bands and/or CA configurations. For a Rel-10 UE corresponding requirements are then introduced via this clause.Table 3A.3-1: Operating bands for specific features

|  |  |  |  |
| --- | --- | --- | --- |
| Feature | Release  independent from | Requirements to be fulfilled  (see 36.307 of the REL when the feature was introduced) | Further information |
|  |  |  |  |

Table 3A.3-2: CA configurations for specific features

|  |  |  |  |
| --- | --- | --- | --- |
| Feature | Release  independent from | Requirements to be fulfilled  (see 36.307 of the REL when the feature was introduced) | Further information |
|  |  |  |  |

## 3A.4 Other release independent features

This clause covers requirements for a Rel-10 UE coming from all other release independent features that are not covered under clause 3A.1, 3A.2 and 3A.3, e.g. generic baseband requirements or requirements that are not band/CA configuration specific.

Table 3A.4-1: Additional requirements of other release independent features

|  |  |  |  |
| --- | --- | --- | --- |
| Feature | Release  independent from | Requirements to be fulfilled  (see 36.307 of the REL when the feature was introduced) | Further information |
| RF and performance requirements for 4Rx UEs | Rel-10 | Table C.1-1, Table C.2-1 for single carrier and Table C.1-2, Table C.2-2 for CA | REL-13 WI LTE\_4Rx\_AP\_DL introduced:  - single carrier RF requirements for bands 1, 2, 3, 7, 20, 39, 41, 42: see Table C.1-1  - CA RF requirements for CA\_3A-42A and other 1UL CA configurations (see TS 36.101 REL-13 [2] Table 7.3.1A-0a NOTE 20): see Table C.1-2  - single carrier performance requirements for demodulation and CSI: see Table C.2-1  REL-14 WI LTE\_4Rx\_AP\_DL\_bands introduced:  - single carrier RF requirements for band 35, 40: see Table C.1-1  - CA RF requirements for some further 1UL CA configurations (see TS 36.101 REL-14 [2]): see Table C.1-2  REL-14 WI LTE\_4Rx\_AP\_DL\_CA introduced:  - CA RF requirements for some 2DL/2UL CA configurations (see TS 36.101 REL-14 [2]): see Table C.1-2  - CA performance requirements for demodulation/SDR and CSI: see Table C2-2  REL-15 WI LTE\_4Rx\_AP\_DL\_bands\_R15 introduced:  - single carrier RF requirements for band 4, 34, 43, 66: see Table C.1-1  - CA RF requirements for some further 1UL CA configurations (see TS 36.101 REL-15 [2]): see Table C.1-2 |

# 4 - 292 Void

Annex A (informative):  
Frequency arrangement for overlapping operating bands

The following information is provided in order to assist a UE derive the DL EARFCN and UL EARFCN in a multi-band environment, in which multiple overlapping operating bands may be indicated in the fields *freqBandIndicator* and *multiBandInfoList* of SIB1.

The overlapping bands, independent of release, which may be indicated in a cell are shown in Table A-1 for applicable E-UTRA bands. The DL EARFCN and UL EARFCN are derived according to TS 36.101Rel-10 [2].

Table A-1: Overlapping bands (multi-band environments) for each E-UTRA band

|  |  |  |
| --- | --- | --- |
| E-UTRA Operating Band | Overlapping E-UTRA operating bands | Duplex Mode |
| 2 | 25 | FDD |
| 3 | 9 | FDD |
| 4 | 10 | FDD |
| 5 | 18, 19, 26 | FDD |
| 9 | 3 | FDD |
| 10 | 4 | FDD |
| 12 | 17 | FDD |
| 17 | 12 | FDD |
| 18 | 5, 26, 27 | FDD |
| 19 | 5, 26 | FDD |
| 25 | 2 | FDD |
| 26 | 5, 18, 19, 27 | FDD |
| 27 | 18, 26 | FDD |
| 33 | 39 | TDD |
| 38 | 41 | TDD |
| 39 | 33 | TDD |
| 41 | 38 | TDD |

Annex B (normative):  
Common Requirements

# B.1 Purpose of annex

The purpose of Annex B is to group the requirements that are common for several bands or CA configurations in this specification and use the common tables as references.

# B.2 Common RRM requirements

## B.2.1 Common RRM requirements for a release independent band

The requirements and test cases listed in Table B.2.1-1 are specified in TS 36.133 Rel-10 [3].

Table B.2.1-1: Common RRM requirements for a release independent band

|  |  |
| --- | --- |
| Section / Clause | Description |
| 4 Note 1 | E-UTRAN RRC\_IDLE state mobility |
| 5 | E-UTRAN RRC\_CONNECTED state mobility |
| 6 Note 2 | RRC Connection Mobility Control |
| 7 Note 3 | Timing and signalling characteristics |
| 8 Note 4 | UE Measurements Procedures in RRC\_CONNECTED State |
| 9 Note 5 | Measurements performance requirements for UE |
| A.4 Note 1 | E-UTRAN RRC\_IDLE state |
| A.5 | E-UTRAN RRC CONNECTED Mode Mobility |
| A.6 Note 2 | RRC Connection Control |
| A.7 Note 3 | Timing and Signalling Characteristics |
| A.8 Note 4 | UE Measurements Procedures |
| A.9 Note 5 | Measurement Performance Requirements |
| NOTE 1: All requirements and the corresponding test cases shall apply, except:  - for supporting the corresponding band in Rel-9 and below: clause 4.3 (Minimization of Drive Tests).  NOTE 2: All requirements and the corresponding test cases shall apply, except:  - for supporting the corresponding band in Rel-8: clauses 6.3 (RRC Connection Release with Redirection), 6.4 (CSG Proximity Indication for E-UTRAN and UTRAN).  NOTE 3: All requirements and corresponding test cases shall apply, except those defined in sections 7.4 and 7.5.  NOTE 4: All requirements and corresponding test cases shall apply, except:  - for supporting the corresponding band in Rel-8: clauses 8.1.2.5 (E-UTRAN OTDOA Intra-Frequency RSTD Measurements), 8.1.2.6 (E-UTRAN Inter-Frequency OTDOA Measurements), 8.1.2.7 (E-UTRAN E-CID Measurements).  NOTE 5: All requirements and corresponding test cases shall apply, except:  - for supporting the corresponding band in Rel-8: clauses 9.1.9 (UE Rx–Tx time difference), 9.1.10 (Reference Signal Time Difference).  NOTE 6: All requirements and test cases in this table shall apply, except those defined for: carrier aggregation; measurements under time-domain measurement resource restriction, in addition to the exceptions listed above. | |

## B.2.2 Void

## B.2.3 Void

# B.3 Common UE performance requirements

## B.3.1 Void

## B.3.2 Void

## B.3.3 Void

# B.4 Common UE RF requirements

## B.4.1 Common UE RF requirements for a release independent band

The requirements and test cases listed in Table B.4.1-1 are specified in TS 36.101 Rel-10 [2].

Table B.4.1-1: Common UE RF requirements for a release independent band

|  |  |
| --- | --- |
| Section / Clause | Description |
| 5.5 | Operating bands |
| 5.6 | Channel bandwidth |
| 5.7 | Channel arrangement |
| 6.2 | Transmit power |
| 6.3 | Output power dynamics |
| 6.5 | Transmit signal quality |
| 6.6 | Output RF spectrum emissions |
| 6.7 | Transmit intermodulation |
| 7.3 | Reference sensitivity power level |
| 7.4 | Maximum input level |
| 7.5 | Adjacent Channel Selectivity (ACS) |
| 7.6 | Blocking characteristics |
| 7.7 | Spurious response |
| 7.8 | Intermodulation characteristics |
| 7.9 | RX spurious emissions |

## B.4.2 Void

## B.4.3 Void

Annex C (informative):  
Change history

Table C.1: Change History

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 11-2009 | RP#46 | RP-091141 |  |  |  | TS36.307 V0.1.0 approved by RAN (Originally in R4-095022) | 0.1.0 |
| 02-2010 | R4#54 | R4-100419 |  |  |  | For release 9 version, replace sections 4 to 6 as ‘Void’ and add a new void section as section 7. | 0.2.0 |
| 03-2010 | RP#47 | RP-100162 |  |  |  | TS36.307 v1.0.0 for approval | 1.0.0 |
| 03-2010 | RP#47 | RP-100162 |  |  |  | Approved by RAN | 9.0.0 |
| 09-2010 | RP-49 | RP-100927 | 2 |  |  | CR LTE\_TDD\_2600\_US spectrum band definition additions to TS 36.307 V900 | 9.1.0 |
|  |  |  |  |  |  | Correction of section numbering | 9.1.1 |
| 12-2010 | RP-50 | RP-101356 | 008 |  |  | Band 42 and 43 parameters for UMTS/LTE 3500 (TDD) for TS 36.307 | 9.2.0 |
| 12-2010 | RP-50 | RP-101361 | 005 |  |  | Introduction of L-band in TS 36.307 | 9.2.0 |
| 12-2010 | RP-50 | RP-101344 | 016 |  |  | CR creating the rel-10 of the 36.307 specification | 9.3.0 |
| 12-2010 | RP-50 | RP-101356 | 012 |  |  | Band 42 and 43 parameters for UMTS/LTE 3500 (TDD) for TS 36.307 | 9.3.0 |
| 12-2010 | RP-50 |  |  |  |  | Raised to Rel-10 with no technical change | 10.0.0 |
| 01-2011 |  |  |  |  |  | Correction to history table | 10.0.1 |
| 06-2011 | RP-52 | RP-110804 | 015 |  |  | Add Expanded 1900 MHz Band (Band 25) in 36.307 | 10.1.0 |
| 06-2011 | RP-52 | RP-110812 | 022 |  |  | Add 2GHz S-Band (Band 23) in 36.307 (Rel 10) | 10.1.0 |
| 09-2011 | RP-53 | RP-111255 | 025 |  |  | Add Band 22 for LTE/UMTS 3500 (FDD) to TS 36.307 | 10.2.0 |
| 03-2012 | RP-55 | RP-120305 | 028 |  |  | Introduction of Band 26/XXVI to TS 36.307 | 10.3.0 |
| 2012-06 | RP-56 | RP-120778 | 036r1 |  |  | Correction of references | 10.4.0 |
| 2012-06 | RP-56 | RP-120789 | 042 |  |  | Introduction of CA\_1A-19A to TS 36.307 | 10.4.0 |
| 2012-06 | RP-56 | RP-120785 | 044r1 |  |  | Backdating CA\_41C to Rel-10 | 10.4.0 |
| 2012-06 | RP-56 | RP-120793 | 048 |  |  | Introduction of APAC700(FDD) into TS 36.307 Rel.10 | 10.4.0 |
| 2012-06 | RP-56 | RP-120793 | 052 |  |  | Introduction of APAC700(TDD) into TS 36.307 Rel.10 | 10.4.0 |
| 2012-06 | RP-56 | RP-120791 | 056 |  |  | Introduction of e850\_LB (Band 27) to TS 36.307 | 10.4.0 |
| 2012-09 | RP-57 | RP-121335 | 058 |  |  | Introduction of CA\_1A-21A to TS 36.307 | 10.5.0 |
| 2012-09 | RP-57 | RP-121337 | 060r1 |  |  | TS 36.307 CR for CA\_38 | 10.5.0 |
| 2012-09 | RP-57 | RP-121327 | 061 |  |  | Introduction of CA\_B7\_B20 in 36.307 | 10.5.0 |
| 2012-09 | RP-57 | RP-121334 | 062r1 |  |  | Add requirements for inter-band CA of B\_1-18 in TS36.307 | 10.5.0 |
| 2012-09 | RP-57 | RP-121329 | 063 |  |  | Introduction of CA band combination Band3 + Band5 to TS 36.307 | 10.5.0 |
| 2012-09 | RP-57 | RP-121338 | 064r1 |  |  | 36.307 CR for LTE\_CA\_B7 | 10.5.0 |
| 2012-09 | RP-57 | RP-121331 | 065 |  |  | Introduction of CA\_3A-20A to TS 36.307 | 10.5.0 |
| 2012-09 | RP-57 | RP-121333 | 066 |  |  | Introduction of CA\_8\_20 RF requirements into TS36.307 | 10.5.0 |
| 2012-09 | RP-57 | RP-121295 | 069r1 |  |  | Relation between EARFCN for overlapping bands with multiple FBI indication | 10.5.0 |
| 2012-09 | RP-57 | RP-121324 | 071 |  |  | Introduction of CA\_B3\_B7 in 36.307 | 10.5.0 |
| 2012-12 | RP-58 | RP-121884 | 080 |  |  | Introduction of CA\_3A-8A to TS 36.307 | 10.6.0 |
| 2012-12 | RP-58 | RP-121890 | 085 |  |  | Introduction of CA\_4A-5A into 36.307 | 10.6.0 |
| 2012-12 | RP-58 | RP-121889 | 087 |  |  | Introduction of CA band combination Band4 + Band13 to TS 36.307 (Rel-10) | 10.6.0 |
| 2012-12 | RP-58 | RP-121894 | 089 |  |  | Introduction of CA\_B5\_B12 in 36.307 | 10.6.0 |
| 2012-12 | RP-58 | RP-121896 | 090 |  |  | Introduction of Band 5 + Band 17 inter-band CA configuration into 36.307 | 10.6.0 |
| 2012-12 | RP-58 | RP-121887 | 094 |  |  | Introduction of CA\_4-12 into TS 36.307 (Rel-10) | 10.6.0 |
| 2012-12 | RP-58 | RP-121882 | 096 |  |  | [Rel-10] Introduction of inter-band CA\_11-18 into TS36.307 | 10.6.0 |
| 2012-12 | RP-58 | RP-121861 | 098 |  |  | Release-independent implementation of carrier aggregation configuration CA\_4-7 | 10.6.0 |
| 2012-12 | RP-58 | RP-121901 | 100 |  |  | Introduction of Band 29 | 10.6.0 |
| 2012-12 | RP-58 | RP-121719 | 0103 |  |  | Introduction of CA band combination Band2 + Band17 to TS 36.307 (Rel-10) | 10.6.0 |
| 2012-12 | RP-58 | RP-121721 | 0105 |  |  | Introduction of CA band combination Band4 + Band17 to TS 36.307 (Rel-10) | 10.6.0 |
| 2013-06 | RP-60 | RP-130771 | 106r1 |  |  | Introduction of CA 1+8 into TS36.307(Rel-10) | 10.7.0 |
| 2013-06 | RP-60 | RP-130782 | 109r1 |  |  | Introduction of LTE Advanced inter-band Carrier Aggregation of Band 3 and Band 28 to TS 36.307 Rel-10 | 10.7.0 |
| 2013-06 | RP-60 | RP-130785 | 112 |  |  | Introduction of LTE Advanced inter-band Carrier Aggregation of Band 23 and Band 29 to TS 36.307 (Rel-10) | 10.7.0 |
| 2013-06 | RP-60 | RP-130779 | 115 |  |  | Introduction of LTE Advanced inter-band Carrier Aggregation of Band 3 and Band 26 to TS 36.307 (Rel-10) | 10.7.0 |
| 2013-06 | RP-60 | RP-130777 | 118 |  |  | Introduction of CA\_3A-19A to TS 36.307 | 10.7.0 |
| 2013-06 | RP-60 | RP-130783 | 121 |  |  | Introduction of CA\_19A-21A to TS 36.307 | 10.7.0 |
| 2013-06 | RP-60 | RP-130775 | 129 |  |  | Introduction of CA\_2A-13A to TS 36.307 | 10.7.0 |
| 2013-06 | RP-60 | RP-130791 | 134r1 |  |  | Introduction of Band 30 | 10.7.0 |
| 2013-06 | RP-60 | RP-130790 | 141 |  |  | Introduction of LTE 450 into TS 36.307 R10 | 10.7.0 |
| 2013-06 | RP-60 | RP-130765 | 145 |  |  | Corrections to release independent specifications | 10.7.0 |
| 09-2013 | RP-61 | RP-131300 | 151 |  |  | 36.307 CR for LTE\_CA\_C\_B3 (Rel-10) | 10.8.0 |
| 09-2013 | RP-61 | RP-131303 | 154r1 |  |  | Band 31 release independence for UE demodulation performance | 10.8.0 |
| 09-2013 | RP-61 | RP-131285 | 156 |  |  | [Rel-10] Modify requirements for CA\_1A-18A in TS36.307 | 10.8.0 |
| 09-2013 | RP-61 | RP-131296 | 157 |  |  | [Rel-10] Add requirements for CA\_1A-26A into TS36.307 | 10.8.0 |
| 09-2013 | RP-61 | RP-131297 | 161 |  |  | Introduction of CA\_2A-4A into 36.307 REL-10 | 10.8.0 |
| 09-2013 | RP-61 | RP-131298 | 165 |  |  | Introduction of inter-band CA Band 2+5 | 10.8.0 |
| 12-2013 | RP-62 | RP-131946 | 176 |  |  | Introduction of CA band combination Band2 + Band12 to TS 36.307 | 10.9.0 |
| 12-2013 | RP-62 | RP-131954 | 179 |  |  | Introduction of CA band combination Band12 + Band25 to TS 36.307 | 10.9.0 |
| 12-2013 | RP-62 | RP-131927 | 188r1 |  |  | Correction to release independent specification | 10.9.0 |
| 12-2013 | RP-62 | RP-131957 | 190 |  |  | Introduction of CA\_23B to TS 36.307 | 10.9.0 |
| 12-2013 | RP-62 | RP-131950 | 198 |  |  | Introduction of CA band combination Band5 + Band25 to TS 36.307 | 10.9.0 |
| 12-2013 | RP-62 | RP-131948 | 202r1 |  |  | Introduction of CA band combination B5 + B7 to TS 36.307 | 10.9.0 |
| 12-2013 | RP-62 | RP-131952 | 205 |  |  | Introduction of CA band combination B7 + B28 to TS 36.307 | 10.9.0 |
| 12-2013 | RP-62 | RP-131925 | 214r1 |  |  | UE performance requirements in release independent specification for CA | 10.9.0 |
| 12-2013 | RP-62 | RP-131924 | 222 |  |  | Introducing 'General' clause with note referring to note in clause 4.4 in TS36.101, editorial corrections and modifications to Forward and Scope clauses | 10.9.0 |
| 12-2013 | RP-62 | RP-131959 | 224 |  |  | Introduction of LTE\_CA\_C\_B27 to 36.307 (Rel-10) | 10.9.0 |
| 03-2014 | RP-63 | RP-140386 | 225r1 |  |  | Introduction of CA band combination Band 3 and Band 27 to TS 36.307 | 10.10.0 |
| 03-2014 | RP-63 | RP-140368 | 230r1 |  |  | CR on UE performance requirements in release independent specification | 10.10.0 |
| 03-2014 | RP-63 | RP-140368 | 243r1 |  |  | Correction to release independent specification | 10.10.0 |
| 03-2014 | RP-63 | RP-140371 | 233 |  |  | Release independence of Band 14 HPUE | 10.10.0 |
| 03-2014 | RP-63 | RP-140187 | 246 |  |  | Addition of bandwidth combination set for CA\_2A-29A and CA\_4A-29A | 10.10.0 |
| 03-2014 | RP-63 | RP-140387 | 195r1 |  |  | Introduction of CA\_39A-41A to TS 36.307 | 10.10.0 |
| 03-2014 | RP-63 | RP-140388 | 208r2 |  |  | Introduction of CA\_39C to TS 36.307 | 10.10.0 |
| 06-2014 | RP-64 | RP-140911 | 298 |  |  | Correction of Common RRM requirements for CA in release independent specification (Rel-10) | 10.11.0 |
| 06-2014 | RP-64 | RP-140911 | 257 |  |  | Introduction of CA band combination Band 1 and Band 5 to TS 36.307 | 10.11.0 |
| 06-2014 | RP-64 | RP-140911 | 270 |  |  | CR on UE performance requirements in release independent specification | 10.11.0 |
| 06-2014 | RP-64 | RP-140926 | 278 |  |  | Introduction of Band 20+32 CA | 10.11.0 |
| 06-2014 | RP-64 | RP-140931 | 263 |  |  | Introduction of CA 1+11 to 36.307 (Rel-10) | 10.11.0 |
| 06-2014 | RP-64 | RP-140932 | 344 |  |  | Additional bandwidth combination set for LTE Advanced inter-band Carrier Aggregation of Band 3 and Band 20, independent of LTE Release | 10.11.0 |
| 06-2014 | RP-64 | RP-140933 | 273 |  |  | Introduction of CA band combination Band 4 and Band 27 to TS 36.307 | 10.11.0 |
| 06-2014 | RP-64 | RP-140935 | 276 |  |  | Addition of bandwidth combination sets for CA\_3A-5A, CA\_4A-5A, and CA\_4A-12A into 36.307 | 10.11.0 |
| 06-2014 | RP-64 | RP-140942 | 338 |  |  | Introduction of CA band combination Band 1 and Band 20 to TS 36.307 | 10.11.0 |
| 06-2014 | RP-64 | RP-140942 | 251 |  |  | Introduction of CA band combination Band 1 and Band 20 to TS 36.307 | 10.11.0 |
| 06-2014 | RP-64 | RP-140943 | 345 |  |  | Introduction of CA band combination CA\_41D into TS 36.307 (Rel-10) | 10.11.0 |
| 06-2014 | RP-64 | RP-140946 | 343 |  |  | Introduction of CA\_42C to TS 36.307 | 10.11.0 |
| 06-2014 | RP-64 | RP-140952 | 0304 |  |  | Introduction of a new CA\_7C bandwidth combination set into 36.307 (Rel-10) | 10.11.0 |
| 09-2014 | RP-65 | RP-141112 | 0390r1 |  |  | [Rel-10] Introduction of inter-band CA\_18-28 into TS36.307 | 10.12.0 |
| 09-2014 | RP-65 | RP-141198 | 0364r1 |  |  | Introduction of CA\_B1\_B3\_B19 into TS 36.307 (Rel-10) | 10.12.0 |
| 09-2014 | RP-65 | RP-141203 | 0361r1 |  |  | Introduction of CA\_B1\_B3 into TS 36.307 (Rel-10) | 10.12.0 |
| 09-2014 | RP-65 | RP-141329 | 0427r1 |  |  | Introduction of CA\_1A-7A into 36.307 (REl-10) | 10.12.0 |
| 09-2014 | RP-65 | RP-141338 | 0374r2 |  |  | Introduction of CA\_B1\_B5\_B7 into TS 36.307 (Rel-10) | 10.12.0 |
| 09-2014 | RP-65 | RP-141465 | 0430 |  |  | Introduction of 3 DL CA for Band 1+7+20 | 10.12.0 |
| 09-2014 | RP-65 | RP-141527 | 413 |  |  | CR for 36.307 on CA UE performance requirement in Rel-10 | 10.12.0 |
| 09-2014 | RP-65 | RP-141541 | 411 |  |  | CR on UE performance requirement for Band 31 for 36.307 Rel-10 | 10.12.0 |
| 09-2014 | RP-65 | RP-141551 | 358 |  |  | Introduction of CA 8+11 to 36.307 (Rel-10) | 10.12.0 |
| 09-2014 | RP-65 | RP-141552 | 377 |  |  | Introduction of CA\_41A-42A to TS 36.307 | 10.12.0 |
| 09-2014 | RP-65 | RP-141554 | 416r1 |  |  | Introduction of requirements for 3DL inter-band carrier aggregation (FDD) and 2DL fallback | 10.12.0 |
| 09-2014 | RP-65 | RP-141554 | 419r1 |  |  | Introduction of requirements for 3DL inter-band carrier aggregation including Band 30 and 2DL fallback | 10.12.0 |
| 09-2014 | RP-65 | RP-141555 | 382r1 |  |  | Introduction of 3 Band Carrier Aggregation of Band 1,Band 3 and Band 5 to TS 36.307(Rel.10) | 10.12.0 |
| 09-2014 | RP-65 | RP-141556 | 355r1 |  |  | Introduction of 3 Band Carrier Aggregation (3DL/1UL) of Band 1, Band 3 and Band 8 to TS 36.307 | 10.12.0 |
| 09-2014 | RP-65 | RP-141558 | 400 |  |  | Introduction of CA band combination Band 1, Band 3 and Band 20 to TS 36.307 | 10.12.0 |
| 09-2014 | RP-65 | RP-141560 | 350 |  |  | Introduction of new CA\_40C bandwidth combination set into 36.307 | 10.12.0 |
| 12-2014 | RP-66 | RP-142142 | 438 |  |  | UE RF requirements in the release independent spec | 10.13.0 |
| 12-2014 | RP-66 | RP-142166 | 441 |  |  | Inclusion of 40D in 36.307 | 10.13.0 |
| 12-2014 | RP-66 | RP-142182 | 446 |  |  | [Rel-10] Introduction of inter-band CA\_1-28 into TS36.307 | 10.13.0 |
| 12-2014 | RP-66 | RP-142189 | 453 |  |  | CR for TR 36.307: LTE\_CA\_B5\_B13 | 10.13.0 |
| 12-2014 | RP-66 | RP-142190 | 456r2 |  |  | Introduction of additional band combinations for 3DL inter-band CA | 10.13.0 |
| 03-2015 | RP-67 | RP-150392 | 466 |  |  | CR for 36.307 on CA UE performance requirement in Rel-10 | 10.14.0 |
| 07-2015 | RP-68 | RP-151024 | 473r3 |  |  | Introduction of CA\_42D to TS 36.307(Rel-10) | 10.15.0 |
| 07-2015 | RP-68 | RP-150958 | 480 |  |  | Removal of CA\_2A-2A-13A, CA\_4A-4A-13A from rel-10 36.307 | 10.15.0 |
| 07-2015 | RP-68 | RP-150968 | 496r2 |  |  | Release independence CR for 2DL inter-band CA Rel-10 | 10.15.0 |
| 07-2015 | RP-68 | RP-150972 | 500r1 |  |  | Release independence CR for 3DL inter-band CA Rel-10 | 10.15.0 |
| 09-2015 | RP-69 | RP-151501 | 0517 |  |  | Introduction of the finished 4DL inter-band CAs fall back mode to TS 36.307  This CR was not implemented as the cover page said it is for 36.101 | 10.16.0 |
| 09-2015 | RP-69 | RP-151498 | 531r1 |  |  | Rel-13 2DL combinations | 10.16.0 |
| 09-2015 | RP-69 | RP-151499 | 535 |  |  | Rel-13 3DL combinations | 10.16.0 |
| 09-2015 | RP-69 | RP-151487 | 0542 |  |  | Correction of TS 36.307 for release independent | 10.16.0 |
| 12-2015 | RP-70 | RP-152157 | 0558r1 |  |  | Introducing B20 + B67 CA into TS 36.307 | 10.17.0 |
| 12-2015 | RP-70 | RP-152168 | 0565 |  |  | Introduction of intra-band CA\_8B to TS 36.307 | 10.17.0 |
| 12-2015 | RP-70 | RP-152171 | 0577 |  |  | Introduction of Band 65 | 10.17.0 |
| 12-2015 | RP-70 | RP-152162 | 0601 |  |  | Introduction of the finished 4DL inter-band CAs fall back mode to TS 36.307 | 10.17.0 |
| 12-2015 | RP-70 | RP-152173 | 0609 |  |  | Introduction of 1447-1467MHz Band into 36.307 | 10.17.0 |
| 12-2015 | RP-70 | RP-152161 | 0617 |  |  | Rel-13 3DL combinations | 10.17.0 |
| 12-2015 | RP-70 | RP-152172 | 0625 |  |  | Introduction of Band 66 | 10.17.0 |
| 12-2015 | RP-70 | RP-152167 | 0635 |  |  | Introduction of intra-band CA\_5B to TS 36.307 | 10.17.0 |
| 03/2016 | RP-71 | RP-160480 | 0652 |  | B | Rel-13 3DL combinations | 10.18.0 |
| 03/2016 | RP-71 | RP-160482 | 0648 |  | B | Introduction of 5DL/1UL CA combinations into TS 36.307 (Rel-10) | 10.18.0 |
| 03/2016 | RP-71 | RP-160483 | 0644 |  | B | Introduction of Band 68 | 10.18.0 |
| 06/2016 | RP-72 | RP-161139 | 0679 | 1 | F | CR TS 36.307 REL-10 | 10.19.0 |
| 09/2016 | RP-73 | RP-161628 | 0696 |  | A | Release 10 36.307 CAT A CR to make Band 41 power class 2 release independent  The CR was not implemented because it was not based on the latest version of the Spec | 10.20.0 |
| 09/2016 | RP-73 | RP-161632 | 0700 |  | F | Correction of REL-10 TS 36.307 references | 10.20.0 |
| 09/2016 | RP-73 | RP-161613 | 0704 |  | B | CR for correction of 4Rx features for release independent in Rel-10 in 36.307 | 10.20.0 |
| 12/2016 | RP-74 | RP-162406 | 0712 | 1 | F | Addition of power class 2 | 10.21.0 |
| 06/2017 | RP-76 | RP-171294 | 0745 | 1 | F | Cleanup of TS 36.307 | 10.22.0 |
| 2018-03 | RAN#79 | RP-180288 | 4366 |  | B | Addition of missing features for TS 36.307 REL-10 | 10.23.0 |
| 2018-06 | RAN#80 | RP-181106 | 4376 |  | B | TS 36.307 Rel-10 | 10.24.0 |
| 2018-06 | RAN#80 | RP-181097 | 4382 |  | B | TS 36.307 big CR for introduction new band support for 4Rx antenna ports R10 | 10.24.0 |