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**LTE;
Evolved Universal Terrestrial Radio Access (E-UTRA);
Requirements on User Equipments (UEs)
supporting a release-independent frequency band
(3GPP TS 36.307 version 13.15.0 Release 13)**



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1 Scope

The present document specifies requirements for Rel-13 UEs supporting release independent features like:

- additional E-UTRA operating frequency bands on top of Rel-13 of TS 36.101 [2] and TS 36.133 [3];
- additional E-UTRA CA configurations (intra-band/inter-band; also for LAA) on top of Rel-13 of TS 36.101 [2] and TS 36.133 [3];
- additional operating bands and/or CA configurations for specific features (like UE category 0, M1, NB1);
- other release independent features (like 4Rx antenna port, high speed scenario, 8Rx 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 |
| CRS | Cell-specific Reference Signal |
| CSI | Channel State Indicator |
| FDD | Frequency Division Duplex |
| LAA | License-Assisted Access |
| 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-13 UE for additional E-UTRA operating bands compared to TS 36.101 Rel-13 [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-13 UE for additional E-UTRA CA configurations compared to TS 36.101 Rel-13 [2] are introduced via this clause.

Table 3A.2-1: Intra-band contiguous CA configurations and UE CA power class

| 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 and the power class were 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 |
| | | E | TDD | Rel-11 | Table B.2.2-1, Table B.3.2-1, Table B.4.2-1 |
| | | F | TDD | Rel-12 | 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

| 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 |
| | | | 2-5 | D, E | FDD, TDD | Rel-11 | Table B.2.4-1, Table B.3.2-1, Table B.4.3-1 or Table B.4.4-1 |
| | | | 2-5 | A, B, C, D, E | FDD and TDD | Rel-12 | 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 |
| | | | 3-5 | B, C, D | FDD, TDD | Rel-11 | Table B.2.4-1, Table B.3.2-1, Table B.4.3-1 or Table B.4.4-1 |
| | | | 3 | A | FDD and TDD | Rel-12 | Table B.2.4-1, Table B.3.2-1, Table B.4.3-1 or Table B.4.4-1 |
| | | 4 | 4-5 | A, C | FDD, TDD | Rel-11 | Table B.2.4-1, Table B.3.2-1, Table B.4.3-1 or Table B.4.4-1 |
| | | | 4-5 | | FDD and TDD | Rel-12 | Table B.2.4-1, Table B.3.2-1, Table B.4.3-1 or Table B.4.4-1 |
| | | 5 | 5 | A | FDD, TDD | Rel-12 | Table B.2.4-1, Table B.3.2-1, Table B.4.3-1 or Table B.4.4-1 |
| | 5 | | FDD and TDD | | Rel-12 | Table B.2.4-1, Table B.3.2-1, Table B.4.3-1 or Table B.4.4-1 | |
| | UL | 2 | 2-4 | A, C | FDD, TDD | Rel-11 | Table B.2.4-1, Table B.3.2-1, Table B.4.3-1 or Table B.4.4-1 |
| | | | 2-3 | A, C | FDD and TDD | Rel-12 | 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. The duplex mode "FDD and TDD" refers to a CA configuration including both FDD and TDD bands. | | | | | | |
| NOTE2: CA configurations involving downlink only operation in Band 46 are release independent from Rel-13 onwards (LAA was introduced in Rel-13). The 10 MHz channel bandwidth for Band 46 was introduced in TS 36.101 Rel-14 [2] and can be implemented in a release independent way from Rel-13. | | | | | | | |

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.

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

| Feature | DL/UL | number of sub-blocks | 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) |
|---|-------|----------------------|---------------|---------------|-------------|--------------------------|---|
| Intra-band non-contiguous CA configurations | DL | 2 | 2-5 | A, C, D | FDD, TDD | Rel-11 | Table B.2.3-1, Table B.3.2-1, Table B.4.5-1 |
| | | 3 | 3-5 | A, C | FDD, TDD | Rel-11 | Table B.2.3-1, Table B.3.2-1, Table B.4.5-1 |
| | UL | 2 | 2 | A | FDD | Rel-11 | Table B.2.3-1, Table B.3.2-1, Table B.4.5-1 |
| NOTE 1: The duplex mode "FDD, TDD" refers to a CA configuration composed by only FDD bands or only TDD bands, respectively. | | | | | | | |

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-13 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 |
|-------------------------------------|--------------------------|--|---|
| Operating bands for UE category 0 | Rel-12 | Table B.2.9-1, Table B.3.5-1, Table B.4.10-1 | Rel-14 WI LC_MTC_LTE_cat0_B25_B26-Core introduced RF, RRM, demodulation and CSI requirements for bands 25 and 26, see Table B.2.9-1, Table B.3.5-1, Table B.4.10-1 |
| Operating bands for UE category M1 | Rel-13 | Table B.2.10-1, Table B.3.6-1, Table B.4.11-1 | Rel-14 WI LTE_MTCe2_L1_cat1_B25_B40-Core introduced RF, RRM, demodulation and CSI requirements for bands 25 and 40, see Table B.2.10-1, Table B.3.6-1, Table B.4.11-1. Rel-15 WI LTE_bands_R15_M1_NB1-Core introduced RF, RRM, demodulation and CSI requirements for bands 14 and 71, see Table B.2.10-1, Table B.3.6-1, Table B.4.11-1. Rel-17 WI LTE_bands_R17_M1_M2_NB1_NB2 introduced RF, RRM, demodulation for band 24 and band 48, see Table B.2.10-1, Table B.3.6-1, Table B.4.11-1. |
| Operating bands for UE category NB1 | Rel-13 | Table B.2.8-1, Table B.3.7-1, Table B.4.9-1 | Rel-14 WI NB_IOT_R14_bands introduced RF, RRM and demodulation requirements for bands 11, 21, 25, 31, 70, see Table B.2.8-1, Table B.3.7-1, Table B.4.9-1. Rel-15 WI LTE_bands_R15_M1_NB1-Core introduced RF, RRM and demodulation for bands 4, 14 and 71 see Table B.2.8-1, Table B.3.7-1, Table B.4.9-1. Rel-16 WI LTE_bands_R16_M1_NB1 introduced RF, RRM, demodulation for band 65, see Table B.2.8-1, Table B.3.7-1, Table B.4.9-1. Rel-17 WI LTE_bands_R17_M1_M2_NB1_NB2 introduced RF, RRM, demodulation for band 24, see Table B.2.8-1, Table B.3.7-1, Table B.4.9-1. |

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-13 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 |
| RF and performance requirements for 8Rx UEs | Rel-13 | Table E.1-1, Table E.2-1 for single carrier and Table E.1-2, Table E.2-2 for CA | REL-15 WI LTE_8Rx_AP_DL introduced: - single carrier RF requirements for band 41, 42,43: see Table E.1-1 - CA RF requirements for CA_41C, CA_42C and CA_41A-42A CA configurations (see TS 36.101 REL-15 [2]): see Table E.1-2 - single carrier performance requirements for demodulation and CSI: see Table E.2-1 - CA performance requirements for demodulation/SDR: see Table E.2-2 |
| RRM and demodulation requirements for high speed scenario | Rel-13 (NOTE 1) | Table D.1-1, Table D.2-1 | Rel-14 WI LTE_high_speed introduced band independent RRM and demodulation requirements. see Table D.1-1, Table D.2-1 |
| NOTE 1: Rel-13 UEs supporting the high speed scenario are assumed to read the Rel-14 high speed scenario information, which is broadcast to all UEs. | | | |

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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 36.101 Rel-13 [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, 66 | FDD |
| 5 | 18, 19, 26 | FDD |
| 9 | 3 | FDD |
| 10 | 4, 66 | 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 |
| 66 | 4, 10 | FDD |

Annex B (normative): Common Requirements for bands or CA

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-13 [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 |
| <p>NOTE 1: All requirements and the corresponding test cases shall apply, except:</p> <ul style="list-style-type: none"> - for supporting the corresponding band in Rel-9 and below: clause 4.3 (Minimization of Drive Tests). <p>NOTE 2: All requirements and the corresponding test cases shall apply, except:</p> <ul style="list-style-type: none"> - 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). <p>NOTE 3: All requirements and corresponding test cases shall apply, except those defined in sections 7.4 and 7.5.</p> <p>NOTE 4: All requirements and corresponding test cases shall apply, except:</p> <ul style="list-style-type: none"> - 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). <p>NOTE 5: All requirements and corresponding test cases shall apply, except:</p> <ul style="list-style-type: none"> - for supporting the corresponding band in Rel-8: clauses 9.1.9 (UE Rx-Tx time difference), 9.1.10 (Reference Signal Time Difference). - for supporting the corresponding band in Rel-11 or below: the RSRP absolute accuracy requirement under normal conditions in table 9.1.2.1-1, 9.1.2.3-1, 9.1.2.5-1 and 9.1.3.1-1 when $l_0 \leq -70\text{dBm}$ is $\pm 6\text{dB}$. - for supporting the corresponding band in Rel-11 or below: the interfrequency RSRP relative accuracy requirement under normal conditions in table 9.1.3.2-1 is $\pm 6\text{dB}$. <p>NOTE 6: In addition to the exceptions above, all requirements and test cases in this table shall apply, except those defined for:</p> <ul style="list-style-type: none"> - carrier aggregation; - for supporting the corresponding band in Rel-9 or below: measurements under time-domain measurement resource restriction without CRS assistance information; - for supporting the corresponding band in Rel-10 or below: measurements under time-domain measurement resource restriction with CRS assistance information; - for supporting the corresponding band in Rel-11 or below: requirements introduced in Rel-12. | |

B.2.2 Common RRM requirements for an intra-band contiguous CA configuration

The requirements and test cases listed in Table B.2.2-1 are specified in TS 36.133 Rel-13 [3].

Table B.2.2-1: Common RRM requirements for a release independent single-band CA configuration

| Section / Clause | Description |
|---|---|
| 7.1 | UE transmit timing |
| 7.7 | SCell Activation and Deactivation Delay for E-UTRA Carrier Aggregation |
| 7.8 | Interruptions with Carrier Aggregation |
| 8.2 | Capabilities for Support of Event Triggering and Reporting Criteria |
| 8.3 | Measurements for E-UTRA carrier aggregation |
| 8.4 | OTDOA RSTD Measurements for E-UTRAN carrier aggregation |
| 9.1.11 ^{Note 3} | Carrier aggregation measurement accuracy |
| 9.1.12 | Reference Signal Time Difference (RSTD) Measurement Accuracy Requirements for Carrier Aggregation |
| A.7 | Timing and Signalling Characteristics |
| A.8 | UE Measurements Procedures |
| A.9 ^{Note 3} | Measurement Performance Requirements |
| <p>NOTE 1: Only requirements and test cases defined for intra-band contiguous carrier aggregation shall apply.</p> <p>NOTE 2: In addition to the exceptions above, all requirements and test cases in this table shall apply, except:</p> <ul style="list-style-type: none"> - for supporting the corresponding band in Rel-11 or below: requirements introduced in Rel-12. <p>NOTE 3: - For supporting the corresponding band in Rel-11 or below: the RSRP absolute accuracy requirement under normal conditions in table 9.1.2.1-1, 9.1.2.3-1, 9.1.2.5-1 and 9.1.3.1-1 when $Io \leq -70$dBm is ± 6dB.</p> <ul style="list-style-type: none"> - For supporting the corresponding band in Rel-11 or below: the interfrequency RSRP relative accuracy requirement under normal conditions in table 9.1.3.2-1 is ± 6dB. | |

B.2.3 Common RRM requirements for an intra-band non-contiguous CA with single uplink configuration

The requirements and test cases listed in Table B.2.3-1 are specified in [3] TS 36.133 Rel-13.

Table B.2.3-1: Common RRM requirements for a release independent single-band CA configuration

| Section / Clause | Description |
|--|---|
| 7.1 | UE transmit timing |
| 7.7 | SCell Activation and Deactivation Delay for E-UTRA Carrier Aggregation |
| 7.8 | Interruptions with Carrier Aggregation |
| 8.2 | Capabilities for Support of Event Triggering and Reporting Criteria |
| 8.3 | Measurements for E-UTRA carrier aggregation |
| 8.4 | OTDOA RSTD Measurements for E-UTRAN carrier aggregation |
| 9.1.11 ^{Note 3} | Carrier aggregation measurement accuracy |
| 9.1.12 | Reference Signal Time Difference (RSTD) Measurement Accuracy Requirements for Carrier Aggregation |
| A.7 | Timing and Signalling Characteristics |
| A.8 | UE Measurements Procedures |
| A.9 ^{Note 3} | Measurement Performance Requirements |
| <p>NOTE 1: Only requirements and test cases defined for intra-band non-contiguous carrier aggregation with single uplink shall apply.</p> <p>NOTE 2: In addition to the exceptions above, all requirements and test cases in this table shall apply, except:</p> <ul style="list-style-type: none"> - for supporting the corresponding band in Rel-11 or below: requirements introduced in Rel-12. <p>NOTE 3: - For supporting the corresponding band in Rel-11 or below: the RSRP absolute accuracy requirement under normal conditions in table 9.1.2.1-1, 9.1.2.3-1, 9.1.2.5-1 and 9.1.3.1-1 when $Io \leq -70$dBm is ± 6dB.</p> <ul style="list-style-type: none"> - for supporting the corresponding band in Rel-11 or below: the interfrequency RSRP relative accuracy requirement under normal conditions in table 9.1.3.2-1 is ± 6dB. | |

B.2.4 Common RRM requirements for an inter-band CA with single uplink configuration

The requirements and test cases listed in Table B.2.4-1 are specified in TS 36.133 Rel-13 [3].

Table B.2.4-1: Common RRM requirements for a release independent band-combination CA configuration

| Section / Clause | Description |
|---|---|
| 7.1 | UE transmit timing |
| 7.7 | SCell Activation and Deactivation Delay for E-UTRA Carrier Aggregation |
| 7.8 | Interruptions with Carrier Aggregation |
| 8.2 | Capabilities for Support of Event Triggering and Reporting Criteria |
| 8.3 | Measurements for E-UTRA carrier aggregation |
| 8.4 | OTDOA RSTD Measurements for E-UTRAN carrier aggregation |
| 9.1.11 ^{Note 3} | Carrier aggregation measurement accuracy |
| 9.1.12 | Reference Signal Time Difference (RSTD) Measurement Accuracy Requirements for Carrier Aggregation |
| A.7 | Timing and Signalling Characteristics |
| A.8 | UE Measurements Procedures |
| A.9 ^{Note 3} | Measurement Performance Requirements |
| NOTE 1: Only requirements and test cases defined for inter-band with single uplink carrier aggregation shall apply. | |
| NOTE 2: In addition to the exceptions above, all requirements and test cases in this table shall apply, except: | |
| - for supporting the corresponding band in Rel-11 or below: requirements introduced in Rel-12. | |
| NOTE 3: - For supporting the corresponding band in Rel-11 or below: the RSRP absolute accuracy requirement under normal conditions in table 9.1.2.1-1, 9.1.2.3-1, 9.1.2.5-1 and 9.1.3.1-1 when $Io \leq -70$ dBm is ± 6 dB. | |
| - for supporting the corresponding band in Rel-11 or below: the interfrequency RSRP relative accuracy requirement under normal conditions in table 9.1.3.2-1 is ± 6 dB. | |

B.2.5 Common RRM requirements for an inter-band CA with dual uplink configuration

The requirements and test cases listed in Table B.2.5-1 are specified in TS 36.133 Rel-13 [3].

Table B.2.5-1: Common RRM requirements for a release independent band-combination CA configuration with dual uplink

| Section / Clause | Description |
|--|---|
| 7.1 | UE transmit timing |
| 7.7 | SCell Activation and Deactivation Delay for E-UTRA Carrier Aggregation |
| 7.8 | Interruptions with Carrier Aggregation |
| 7.17 | Maximum Transmission Timing Difference in Dual Connectivity |
| 8.2 | Capabilities for Support of Event Triggering and Reporting Criteria |
| 8.3 | Measurements for E-UTRA carrier aggregation |
| 8.4 | OTDOA RSTD Measurements for E-UTRAN carrier aggregation |
| 9.1.11 ^{Note 3} | Carrier aggregation measurement accuracy |
| 9.1.12 | Reference Signal Time Difference (RSTD) Measurement Accuracy Requirements for Carrier Aggregation |
| A.7 | Timing and Signalling Characteristics |
| A.8 | UE Measurements Procedures |
| A.9 ^{Note 3} | Measurement Performance Requirements |
| NOTE 1: Only requirements and test cases defined for inter-band with dual uplink carrier aggregation shall apply. | |
| NOTE 2: In addition to the exceptions above, all requirements and test cases in this table shall apply, except: | |
| - for supporting the corresponding band in Rel-11 or below: requirements introduced in Rel-12. | |
| NOTE 3: - For supporting the corresponding band in Rel-11 or below: the RSRP absolute accuracy requirement under normal conditions in table 9.1.2.1-1, 9.1.2.3-1, 9.1.2.5-1 and 9.1.3.1-1 when $l_0 \leq -70$ dBm is ± 6 dB. | |
| - for supporting the corresponding band in Rel-11 or below: the interfrequency RSRP relative accuracy requirement under normal conditions in table 9.1.3.2-1 is ± 6 dB. | |

B.2.6 Common RRM requirements for an intra-band non-contiguous CA with dual uplink configuration

The requirements and test cases listed in Table B.2.6-1 are specified in TS 36.133 Rel-13 [3].

Table B.2.6-1: Common RRM requirements for a release independent single-band CA configuration with dual uplink

| Section / Clause | Description |
|--|---|
| 7.1 | UE transmit timing |
| 7.7 | SCell Activation and Deactivation Delay for E-UTRA Carrier Aggregation |
| 7.8 | Interruptions with Carrier Aggregation |
| 7.17 | Maximum Transmission Timing Difference in Dual Connectivity |
| 8.2 | Capabilities for Support of Event Triggering and Reporting Criteria |
| 8.3 | Measurements for E-UTRA carrier aggregation |
| 8.4 | OTDOA RSTD Measurements for E-UTRAN carrier aggregation |
| 9.1.11 ^{Note 3} | Carrier aggregation measurement accuracy |
| 9.1.12 | Reference Signal Time Difference (RSTD) Measurement Accuracy Requirements for Carrier Aggregation |
| A.7 | Timing and Signalling Characteristics |
| A.8 | UE Measurements Procedures |
| A.9 ^{Note 3} | Measurement Performance Requirements |
| <p>NOTE 1: Only requirements and test cases defined for intra-band non-contiguous carrier aggregation with dual uplinks shall apply.</p> <p>NOTE 2: In addition to the exceptions above, all requirements and test cases in this table shall apply, except:</p> <ul style="list-style-type: none"> - for supporting the corresponding band in Rel-11 or below: requirements introduced in Rel-12. <p>NOTE 3: - For supporting the corresponding band in Rel-11 or below: the RSRP absolute accuracy requirement under normal conditions in table 9.1.2.1-1, 9.1.2.3-1, 9.1.2.5-1 and 9.1.3.1-1 when $l_0 \leq -70$dBm is ± 6dB.</p> <ul style="list-style-type: none"> - for supporting the corresponding band in Rel-11 or below: the interfrequency RSRP relative accuracy requirement under normal conditions in table 9.1.3.2-1 is ± 6dB. | |

B.2.7 Common RRM requirements for an inter-band CA with three uplink configuration

The requirements and test cases listed in Table B.2.7-1 are specified in [3] TS 36.133 Rel-13 .

Table B.2.7-1: Common RRM requirements for a release independent band-combination CA configuration with three uplink

| Section / Clause | Description |
|---|---|
| 7.1 | UE transmit timing |
| 7.7 | SCell Activation and Deactivation Delay for E-UTRA Carrier Aggregation |
| 7.8 | Interruptions with Carrier Aggregation |
| 7.17 | Maximum Transmission Timing Difference in Dual Connectivity |
| 8.2 | Capabilities for Support of Event Triggering and Reporting Criteria |
| 8.3 | Measurements for E-UTRA carrier aggregation |
| 8.4 | OTDOA RSTD Measurements for E-UTRAN carrier aggregation |
| 9.1.11 ^{Note 3} | Carrier aggregation measurement accuracy |
| 9.1.12 | Reference Signal Time Difference (RSTD) Measurement Accuracy Requirements for Carrier Aggregation |
| <p>NOTE 1: Only requirements defined for three uplink carrier aggregation shall apply. There are no test cases defined with a three uplink carrier aggregation configuration.</p> <p>NOTE 2: In addition to the exceptions above, all requirements and test cases in this table shall apply, except:</p> <ul style="list-style-type: none"> - for supporting the corresponding band in Rel-11 or below: requirements introduced in Rel-12. <p>NOTE 3: - For supporting the corresponding band in Rel-11 or below: the RSRP absolute accuracy requirement under normal conditions in table 9.1.2.1-1, 9.1.2.3-1, 9.1.2.5-1 and 9.1.3.1-1 when $l_0 \leq -70$dBm is ± 6dB.</p> <ul style="list-style-type: none"> - for supporting the corresponding band in Rel-11 or below: the interfrequency RSRP relative accuracy requirement under normal conditions in table 9.1.3.2-1 is ± 6dB. | |

B.2.8 Void

B.2.9 Void

B.2.10 Void

B.3 Common UE performance requirements

B.3.1 Void

B.3.2 Common UE performance requirements and tests for different CA configurations and combination sets

The requirements and test cases listed in Table B.3.2-1 are specified in TS 36.101 Rel-13 [2].

Table B.3.2-1: Common UE performance requirements and tests for release independent CA configurations and combination sets

| Section / Clause | Description |
|---|---|
| 8.2.1.1.1 | Single-antenna port performance (FDD) |
| 8.2.2.1.1 | Single-antenna port performance (TDD) |
| 8.2.3.1.1 | Single-antenna port performance (TDD-FDD CA) |
| 8.2.1.3.1 | Open-loop spatial multiplexing performance - Minimum Requirement 2 Tx Antenna Port (FDD) |
| 8.2.2.3.1 | Open-loop spatial multiplexing performance - Minimum Requirement 2 Tx Antenna Port (TDD) |
| 8.2.3.3.1 | Open-loop spatial multiplexing performance - Minimum Requirement 2 Tx Antenna Port (TDD-FDD CA) |
| 8.2.1.3.1A | Open-loop spatial multiplexing performance - Soft buffer management test (FDD) |
| 8.2.2.3.1A | Open-loop spatial multiplexing performance - Soft buffer management test (TDD) |
| 8.2.3.3.1A | Open-loop spatial multiplexing performance - Soft buffer management test (TDD-FDD CA) |
| 8.2.1.4.3 | Closed-loop spatial multiplexing performance - Minimum Requirement Multi-Layer Spatial Multiplexing 4 Tx Antenna Port (FDD) |
| 8.2.2.4.3 | Closed-loop spatial multiplexing performance - Minimum Requirement Multi-Layer Spatial Multiplexing 4 Tx Antenna Port (TDD) |
| 8.2.3.4.3 | Closed-loop spatial multiplexing performance - Minimum Requirement Multi-Layer Spatial Multiplexing 4 Tx Antenna Port (TDD-FDD CA) |
| 8.2.1.7 | Carrier aggregation with power imbalance (FDD) |
| 8.2.1.8 | Intra-band non-contiguous carrier aggregation with timing offset (FDD) |
| 8.2.2.7 | Carrier aggregation with power imbalance (TDD) |
| 8.7.1 | Sustained downlink data rate provided by lower layers (FDD) |
| 8.7.2 | Sustained downlink data rate provided by lower layers (TDD) |
| 8.7.5 | Sustained downlink data rate provided by lower layers (TDD-FDD CA) |
| 9.6.1.1 | Additional requirements for carrier aggregation - Periodic reporting on multiple cells (Cell Specific Reference symbols) (FDD) |
| 9.6.1.2 | Additional requirements for carrier aggregation - Periodic reporting on multiple cells (Cell Specific Reference symbols) (TDD) |
| 9.6.1.3 | Additional requirements for carrier aggregation - Periodic reporting on multiple cells (Cell Specific Reference symbols) (TDD-FDD CA) |
| NOTE 1: The applicability of requirements for different CA configurations and bandwidth combination sets is specified in Section 8.1.2.3 and 9.1.1.2. | |
| NOTE 2: The test coverage for different number of component carriers is defined in 8.1.2.4. | |

B.3.3 Void

B.3.4 Void

B.3.5 Void

B.3.6 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-13 [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 Common UE RF requirements for an intra-band contiguous CA configuration

The requirements and test cases listed in Table B.4.2-1 are specified in TS 36.101 Rel-13 [2].

Table B.4.2-1: Common UE RF requirements for a release independent intra-band contiguous CA configuration

| Section / Clause | Description |
|------------------|---|
| 5.5A | Operating bands for CA |
| 5.6A | Channel bandwidths per operating band for CA |
| 5.7.1A | Channel spacing for CA |
| 5.7.2A | Channel raster for CA |
| 5.7.4A | TX–RX frequency separation for CA |
| 6.2.2A | UE maximum output power for CA |
| 6.2.3A | UE maximum output power for modulation/channel bandwidth for CA |
| 6.2.4A | UE maximum output power with additional requirements for CA |
| 6.2.5A | Configured transmitted power for CA |
| 6.3.2A | UE Minimum output power for CA |
| 6.3.3A | UE Transmit OFF power for CA |
| 6.3.4A | ON/OFF time mask for CA |
| 6.3.5A | Power control for CA |
| 6.5.1A | Frequency error for CA |
| 6.5.2A | Transmit modulation quality for CA |
| 6.6.1A | Occupied bandwidth for CA |
| 6.6.2.1A | Spectrum emission mask for CA |
| 6.6.2.2A | Additional Spectrum Emission mask for CA |
| 6.6.2.3.2A | UTRA ACLR for CA |
| 6.6.2.3.3A | E-UTRA ACLR for CA |
| 6.6.3.1A | Minimum requirements for CA |
| 6.6.3.2A | Spurious emission band UE co-existence for CA |
| 6.6.3.3A | Additional spurious emissions for CA |
| 6.7.1A | Minimum requirement for CA |
| 7.3.1A | Reference sensitivity for CA |
| 7.4.1A | Maximum input level for CA |
| 7.5.1A | Adjacent Channel Selectivity (ACS) for CA |
| 7.6.1.1A | In-band blocking for CA |
| 7.6.2.1A | Out-of-band blocking for CA |
| 7.6.3.1A | Narrow band blocking for CA |
| 7.7.1A | Spurious response for CA |
| 7.8.1A | Wideband intermodulation for CA |
| 7.10.1A | Receiver response for CA |

B.4.3 Common UE RF requirements for an single uplink inter-band CA configuration

The requirements and test cases listed in Table B.4.3-1 are specified in TS 36.101 Rel-13 [2].

Table B.4.3-1: Common UE RF requirements for a release independent inter-band CA configuration

| Section / Clause | Description |
|------------------|---|
| 5.5A | Operating bands for CA |
| 5.6A.1 | Channel bandwidths per operating band for CA |
| 5.7.2A | Channel raster for CA |
| 6.2.2A | UE maximum output power for CA |
| 6.2.3A | UE maximum output power for modulation/channel bandwidth for CA |
| 6.2.5 | Configured transmitted power |
| 7.3.1A | Reference sensitivity for CA |
| 7.4.1A | Maximum input level for CA |
| 7.5.1A | Adjacent Channel Selectivity (ACS) for CA |
| 7.6.1.1A | In-band blocking for CA |
| 7.6.2.1A | Out-of-band blocking for CA |
| 7.6.3.1A | Narrow band blocking for CA |
| 7.7.1A | Spurious response for CA |
| 7.8.1A | Wideband intermodulation for CA |

B.4.4 Common UE RF requirements for an inter-band CA configuration including an operating band without uplink band

The requirements and test cases listed in Table B.4.4-1 are specified in TS 36.101 Rel-13 [2].

Table B.4.4-1: Common UE RF requirements for a release independent inter-band CA configuration including an operating band without uplink band

| Section / Clause | Description |
|------------------|---|
| 5.5 | Operating bands |
| 5.5A | Operating bands for CA |
| 5.6A.1 | Channel bandwidths per operating band for CA |
| 5.7 | Channel arrangement |
| 6.2.2A | UE maximum output power for CA |
| 6.2.3A | UE maximum output power for modulation/channel bandwidth for CA |
| 6.2.5 | Configured transmitted power |
| 7.3.1A | Reference sensitivity for CA |
| 7.4.1A | Maximum input level for CA |
| 7.5.1A | Adjacent Channel Selectivity (ACS) for CA |
| 7.6.1.1A | In-band blocking for CA |
| 7.6.2.1A | Out-of-band blocking for CA |
| 7.6.3.1A | Narrow band blocking for CA |
| 7.7.1A | Spurious response for CA |
| 7.8.1A | Wideband intermodulation for CA |

B.4.5 Common UE RF requirements for a single uplink intra-band non-contiguous CA configuration

The requirements and test cases listed in Table B.4.5-1 are specified in TS 36.101 Rel-N [2].

Table B.4.5-1: Common UE RF requirements for a release independent single uplink intra-band non-contiguous CA configuration

| Section / Clause | Description |
|------------------|---|
| 5.5A | Operating bands for CA |
| 5.6A1 | Channel bandwidths per operating band for CA |
| 5.7.2A | Channel raster for CA |
| 6.2.2A | UE maximum output power for CA |
| 6.2.3A | UE maximum output power for modulation/channel bandwidth for CA |
| 7.3.1A | Reference sensitivity for CA |
| 7.4.1A | Maximum input level for CA |
| 7.5.1A | Adjacent Channel Selectivity (ACS) for CA |
| 7.6.1.1A | In-band blocking for CA |
| 7.6.2.1A | Out-of-band blocking for CA |
| 7.6.3.1A | Narrow band blocking for CA |
| 7.7.1A | Spurious response for CA |
| 7.8.1A | Wideband intermodulation for CA |

B.4.6 Common UE RF requirements for Dual uplink inter-band CA configuration

The requirements and test cases listed in Table B.4.6-1 are specified in TS 36.101 Rel-13 [2].

Table B.4.6-1: Common UE RF requirements for a release independent dual uplink inter-band CA configuration

| Section / Clause | Description |
|------------------|---|
| 5.6A.1 | Channel bandwidths per operating band for CA |
| 6.2.2A | UE maximum output power for CA |
| 6.2.5A | Configured transmitted Power for CA |
| 6.3.2A | UE Minimum output power for CA |
| 6.3.3A | UE Transmit OFF power for CA |
| 6.3.4A | ON/OFF time mask for CA |
| 6.3.5A | Power control for CA |
| 6.5.1A | Frequency error for CA |
| 6.5.2A | Transmit modulation quality for CA |
| 6.6.1A | Occupied bandwidth for CA |
| 6.6.2.1A | Spectrum emission mask for CA |
| 6.6.2.3 | Adjacent Channel Leakage Ratio |
| 6.6.3.1A | Spurious Emission for CA |
| 6.6.3.2A | Spurious emission band UE co-existence for CA |
| 6.7.1A | Transmit intermodulation for CA |
| 7.3.1A | Reference sensitivity for CA |
| 7.6.2.1A | Out-of-band blocking for CA |
| 7.7.1A | Spurious response for CA |

B.4.7 Common UE RF requirements for dual uplink intra-band non-contiguous CA configuration

The requirements and test cases listed in Table B.4.7-1 are specified in TS 36.101 Rel-13 [2].

Table B.4.7-1: Common UE RF requirements for a release independent dual uplink intra-band non-contiguous CA configuration

| Section / Clause | Description |
|------------------|---|
| 5.6A.1 | Channel bandwidths per operating band for CA |
| 6.2.2A | UE maximum output power for CA |
| 6.2.3A | UE Maximum Output power for modulation / channel bandwidth for CA |
| 6.2.5A | Configured transmitted Power for CA |
| 6.3.2A | UE Minimum output power for CA |
| 6.3.3A | UE Transmit OFF power for CA |
| 6.3.4A | ON/OFF time mask for CA |
| 6.3.5A | Power control for CA |
| 6.5.1A | Frequency error for CA |
| 6.5.2A | Transmit modulation quality for CA |
| 6.6.1A | Occupied bandwidth for CA |
| 6.6.2.1A | Spectrum emission mask for CA |
| 6.6.2.3 | Adjacent Channel Leakage Ratio |
| 6.6.3.1A | Spurious Emission for CA |
| 6.6.3.2A | Spurious emission band UE co-existence for CA |
| 7.3.1A | Reference sensitivity for CA |
| 7.6.2.1A | Out-of-band blocking for CA |
| 7.7.1A | Spurious response for CA |

B.4.8 Common UE RF requirements for three uplink inter-band CA configuration

The requirements and test cases listed in Table B.4.8-1 are specified in TS 36.101 Rel-13 [2].

Table B.4.8-1: Common UE RF requirements for a release independent three uplink inter-band CA configuration

| Section / Clause | Description |
|------------------|---|
| 5.6A.1 | Channel bandwidths per operating band for CA |
| 6.2.2A | UE maximum output power for CA |
| 6.2.5A | Configured transmitted Power for CA |
| 6.3.2A | UE Minimum output power for CA |
| 6.3.3A | UE Transmit OFF power for CA |
| 6.3.4A | ON/OFF time mask for CA |
| 6.3.5A | Power control for CA |
| 6.5.1A | Frequency error for CA |
| 6.5.2A | Transmit modulation quality for CA |
| 6.6.1A | Occupied bandwidth for CA |
| 6.6.2.1A | Spectrum emission mask for CA |
| 6.6.2.3 | Adjacent Channel Leakage Ratio |
| 6.6.3.1A | Spurious Emission for CA |
| 6.6.3.2A | Spurious emission band UE co-existence for CA |
| 6.7.1A | Transmit intermodulation for CA |
| 7.3.1A | Reference sensitivity for CA |
| 7.6.2.1A | Out-of-band blocking for CA |
| 7.7.1A | Spurious response for CA |

B.4.9 Void

B.4.10 Void

B.4.11 Void

Annex C (normative): Common Requirements for 4Rx

C.1 Common UE RF requirements

The requirements and test cases listed in Table C.1-1 are specified in TS 36.101 Rel-13 [2].

Table C.1-1: RF requirements for 4Rx for single band

| Section / Clause | Description |
|------------------|-----------------------------------|
| 7.3 | Reference sensitivity power level |
| 7.4 | Maximum input level |
| 7.5 | Adjacent channel selectivity |
| 7.6 | Blocking characteristics |
| 7.7 | Spurious response |
| 7.8 | Intermodulation characteristics |
| 7.9 | Spurious emissions |

The requirements and test cases listed in Table C.1-2 are specified in TS 36.101Rel-13 [2].

Table C.1-2: RF requirements for 4Rx for CA

| Section / Clause | Description |
|------------------|-------------------------------------|
| 6.2.5A | Configured maximum output power |
| 7.3.1A | Reference sensitivity for CA |
| 7.4.1A | Maximum input level for CA |
| 7.5.1A | Adjacent Channel Selectivity for CA |
| 7.6.1.1A | In-band blocking for CA |
| 7.6.2.1A | Out-of-band blocking for CA |
| 7.6.3.1A | Narrow band blocking for CA |
| 7.7.1A | Spurious response for CA |
| 7.8.1A | Wideband intermodulation for CA |

C.2 Common UE demodulation and CSI requirements

The requirements and test cases listed in Table C.2-1 are specified in TS 36.101 Rel-13 [2].

Table C.2-1: UE Demodulation and CSI requirements for 4Rx for single band

| Section / Clause | Description |
|------------------|--------------------------|
| 8.10.1 (NOTE) | PDSCH |
| 8.10.2 | PDCCH/PCFICH |
| 8.10.3 | PHICH |
| 8.10.4 | ePDCCH |
| 9.9 | CSI reporting for 4Rx UE |

The requirements and test cases listed in Table C.2-2 are specified in TS 36.101 Rel-13 [2].

Table C.2-2: CSI requirements for 4Rx CA/DC

| Section / Clause | Description |
|-------------------------|-------------------------|
| 9.1.1.4.2 | CSI CA tests for 4Rx UE |

Annex D (informative) :
(Void)

Annex E (normative): Common Requirements for 8Rx

E.1 Common UE RF requirements

The requirements and test cases listed in Table E.1-1 are specified in TS 36.101 [2].

Table E.1-1: RF requirements for 8Rx

| Section / Clause | Description |
|------------------|-----------------------------------|
| 7.3 | Reference sensitivity power level |

The requirements and test cases listed in Table E.1-2 are specified in TS 36.101 [2].

Table E.1-2: RF requirements for 8Rx for CA

| Section / Clause | Description |
|------------------|------------------------------|
| 7.3.1A | Reference sensitivity for CA |

E.2 Common UE demodulation and CSI requirements

The requirements and test cases listed in Table E.2-1 and Table E.2-2 are specified in TS 36.101 [2].

Table E.2-1: UE Demodulation and CSI requirements for 8Rx for single band

| Section / Clause | Description |
|------------------|--------------------------|
| 8.14.1 | PD SCH |
| 9.12 | CSI reporting for 8Rx UE |

Table E.2-2: UE Demodulation and CSI requirements for 8Rx CA/DC

| Section / Clause | Description |
|------------------|------------------------------|
| 8.14.2 | Demodulation of PD SCH CA |
| 8.7.17 | SDR of TDD CA (8 layer MIMO) |

Annex F (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 | 029 | | | Introduction of Band 26/XXVI to TS 36.307 | 11.0.0 |
| 2012-06 | RP-56 | RP-120789 | 043 | | | Introduction of CA_1A-19A to TS 36.307 | 11.1.0 |
| 2012-06 | RP-56 | RP-120793 | 049 | | | Introduction of APAC700(FDD) into TS 36.307 Rel-11 | 11.1.0 |
| 2012-06 | RP-56 | RP-120793 | 053 | | | Introduction of APAC700(TDD) into TS 36.307 Rel-11 | 11.1.0 |
| 2012-06 | RP-56 | RP-120791 | 057 | | | Introduction of e850_LB (Band 27) to TS 36.307 | 11.1.0 |
| 2012-09 | RP-57 | RP-121335 | 059 | | | Introduction of CA_1A-21A to TS 36.307 | 11.2.0 |
| 2012-09 | RP-57 | RP-121295 | 070r1 | | | Relation between EARFCN for overlapping bands with multiple FBI indication | 11.2.0 |
| 2012-09 | RP-57 | RP-121338 | 072 | | | 36.307 CR for LTE_CA_B7 | 11.2.0 |
| 2012-09 | RP-57 | RP-121337 | 073 | | | TS 36.307 CR for CA_38 | 11.2.0 |
| 2012-09 | RP-57 | RP-121327 | 074 | | | Introduction of CA_B7_B20 in 36.307 | 11.2.0 |
| 2012-09 | RP-57 | RP-121329 | 075 | | | Introduction of CA band combination Band3 + Band5 to TS 36.307 | 11.2.0 |
| 2012-09 | RP-57 | RP-121331 | 076 | | | Introduction of CA_3A-20A to TS 36.307 | 11.2.0 |
| 2012-09 | RP-57 | RP-121334 | 077 | | | Add requirements for inter-band CA of B_1-18 in TS36.307 | 11.2.0 |
| 2012-09 | RP-57 | RP-121333 | 078 | | | Introduction of CA_8_20 RF requirements into TS36.307 | 11.2.0 |
| 2012-09 | RP-57 | RP-121324 | 079 | | | Introduction of CA_B3_B7 in 36.307 | 11.2.0 |
| 2012-12 | RP-58 | RP-121890 | 086 | | | Introduction of CA_4A-5A into 36.307 | 11.3.0 |
| 2012-12 | RP-58 | RP-121889 | 088 | | | Introduction of CA band combination Band4 + Band13 to TS 36.307 (Rel-11) | 11.3.0 |
| 2012-12 | RP-58 | RP-121896 | 091 | | | Introduction of Band 5 + Band 17 inter-band CA configuration into 36.307 | 11.3.0 |
| 2012-12 | RP-58 | RP-121884 | 092 | | | Introduction of CA_3A-8A to TS 36.307 | 11.3.0 |
| 2012-12 | RP-58 | RP-121894 | 093 | | | Introduction of CA_B5_B12 in 36.307 | 11.3.0 |
| 2012-12 | RP-58 | RP-121887 | 095 | | | Introduction of CA_4-12 into TS 36.307 (Rel-11) | 11.3.0 |
| 2012-12 | RP-58 | RP-121882 | 097 | | | [Rel-11] Introduction of inter-band CA_11-18 into TS36.307 | 11.3.0 |
| 2012-12 | RP-58 | RP-121861 | 099 | | | Release-independent implementation of carrier aggregation configuration CA_4-7 | 11.3.0 |
| 2012-12 | RP-58 | RP-121901 | 101 | | | Introduction of Band 29 | 11.3.0 |
| 2012-12 | RP-58 | RP-121718 | 0102 | | | Introduction of CA band combination Band2 + Band17 to TS 36.307 (Rel-11) | 11.3.0 |
| 2012-12 | RP-58 | RP-121720 | 0104 | | | Introduction of CA band combination Band4 + Band17 to TS 36.307 (Rel-11) | 11.3.0 |
| 2013-06 | RP-60 | RP-130771 | 108 | | | Introduction of CA 1+8 into TS36.307(Rel-12) | 12.0.0 |
| 2013-06 | RP-60 | RP-130782 | 111 | | | Introduction of LTE Advanced inter-band Carrier Aggregation of Band 3 and Band 28 to TS 36.307 Rel-12 | 12.0.0 |
| 2013-06 | RP-60 | RP-130785 | 114 | | | Introduction of LTE Advanced inter-band Carrier Aggregation of Band 23 and Band 29 to TS 36.307 (Rel-12) | 12.0.0 |
| 2013-06 | RP-60 | RP-130779 | 117 | | | Introduction of LTE Advanced inter-band Carrier Aggregation of Band 3 and Band 26 to TS 36.307 (Rel-12) | 12.0.0 |
| 2013-06 | RP-60 | RP-130777 | 120 | | | Introduction of CA_3A-19A to TS 36.307 | 12.0.0 |
| 2013-06 | RP-60 | RP-130783 | 123 | | | Introduction of CA_19A-21A to TS 36.307 | 12.0.0 |
| 2013-06 | RP-60 | RP-130775 | 131 | | | Introduction of CA_2A-13A to TS 36.307 | 12.0.0 |
| 2013-06 | RP-60 | RP-130791 | 136 | | | Introduction of Band 30 | 12.0.0 |
| 2013-06 | RP-60 | RP-130790 | 143 | | | Introduction of LTE 450 into TS 36.307 R12 | 12.0.0 |
| 2013-06 | RP-60 | RP-130787 | 150 | | | Introduction of CA_4A-4A into 36.307 Rel-12 | 12.0.0 |
| 09-2013 | RP-61 | RP-131300 | 153 | | | 36.307 CR for LTE_CA_C_B3 (Rel-12) | 12.1.0 |
| 09-2013 | RP-61 | RP-131296 | 160 | | | [Rel-12] Add requirements for CA_1A-26A into TS36.307 | 12.1.0 |
| 09-2013 | RP-61 | RP-131297 | 163 | | | Introduction of CA_2A-4A to TS 36.307 | 12.1.0 |
| 09-2013 | RP-61 | RP-131298 | 167 | | | Introduction of inter-band CA Band 2+5 | 12.1.0 |
| 12-2013 | RP-62 | RP-131965 | 173 | | | Introduction of CA_23A-23A to TS 36.307 | 12.2.0 |
| 12-2013 | RP-62 | RP-131946 | 178 | | | Introduction of CA band combination Band2 + Band12 to TS 36.307 | 12.2.0 |

| | | | | | | | |
|---------|-------|-----------|--------|--|--|--|--------|
| 12-2013 | RP-62 | RP-131954 | 181 | | | Introduction of CA band combination Band12 + Band25 to TS 36.307 | 12.2.0 |
| 12-2013 | RP-62 | RP-131959 | 184 | | | Introduction of LTE_CA_C_B27 to 36.307 (Rel-12) | 12.2.0 |
| 12-2013 | RP-62 | RP-131957 | 192 | | | Introduction of CA_23B to TS 36.307 | 12.2.0 |
| 12-2013 | RP-62 | RP-131961 | 194 | | | Introduction of Intra-band non-contiguous CA in band 3 to TS 36.307 | 12.2.0 |
| 12-2013 | RP-62 | RP-131950 | 200 | | | Introduction of CA band combination Band5 + Band25 to TS 36.307 | 12.2.0 |
| 12-2013 | RP-62 | RP-131967 | 201r1 | | | Introducing 'General' clause with note referring to note in clause 4.4 in TS36.101, editorial corrections and modifications to Forward and Scope clauses | 12.2.0 |
| 12-2013 | RP-62 | RP-131948 | 204 | | | Introduction of CA band combination B5 + B7 to TS 36.307 R12 | 12.2.0 |
| 12-2013 | RP-62 | RP-131952 | 207 | | | Introduction of CA band combination B7 + B28 to TS 36.307 | 12.2.0 |
| 12-2013 | RP-62 | RP-131967 | 211 | | | Correction to release independent specification | 12.2.0 |
| 12-2013 | RP-62 | RP-131925 | 216 | | | UE performance requirements in release independent specification for CA | 12.2.0 |
| 12-2013 | RP-62 | RP-131963 | 219 | | | Introduction of CA_7A-7A to TS 36.307 Rel-12 | 12.2.0 |
| 03-2014 | RP-63 | RP-140371 | 235 | | | Release independence of Band 14 HPUE | 12.3.0 |
| 03-2014 | RP-63 | RP-140386 | 227 | | | Introduction of CA band combination Band 3 and Band 27 to TS 36.307 | 12.3.0 |
| 03-2014 | RP-63 | RP-140389 | 245r1 | | | Correction to release independent specification | 12.3.0 |
| 03-2014 | RP-63 | RP-140388 | 210r1 | | | Introduction of CA_39C to TS 36.307 | 12.3.0 |
| 03-2014 | RP-63 | RP-140387 | 197r1 | | | Introduction of CA_39A-41A to TS 36.307 | 12.3.0 |
| 06-2014 | RP-64 | RP-140911 | 259 | | | Introduction of CA band combination Band 1 and Band 5 to TS 36.307 | 12.4.0 |
| 06-2014 | RP-64 | RP-140918 | 300 | | | Correction of Common RRM requirements for CA in release independent specification (Rel-12) | 12.4.0 |
| 06-2014 | RP-64 | RP-140926 | 280r1 | | | Introduction of Band 20+32 CA | 12.4.0 |
| 06-2014 | RP-64 | RP-140931 | 265 | | | Introduction of CA 1+11 to 36.307 (Rel-12) | 12.4.0 |
| 06-2014 | RP-64 | RP-140933 | 275 | | | Introduction of CA band combination Band 4 and Band 27 to TS 36.307 | 12.4.0 |
| 06-2014 | RP-64 | RP-140938 | 291 | | | Introduction of CA_2A-2A to TS 36.307 Rel-12 | 12.4.0 |
| 06-2014 | RP-64 | RP-140940 | 319 | | | Introduction of LTE_CA_NC_B42 into 36.307 | 12.4.0 |
| 06-2014 | RP-64 | RP-140942 | 253 | | | Introduction of CA band combination Band 3 and Band 27 to TS 36.307 | 12.4.0 |
| 06-2014 | RP-64 | RP-140942 | 340 | | | Introduction of CA band combination Band 1 and Band 20 to TS 36.307 | 12.4.0 |
| 06-2014 | RP-64 | RP-140943 | 347 | | | Introduction of CA band combination CA_41D into TS 36.307 (Rel-12) | 12.4.0 |
| 09-2014 | RP-65 | RP-141110 | 0388r1 | | | [Rel-12] Introduction of inter-band CA_18-28 into TS36.307 | 12.5.0 |
| 09-2014 | RP-65 | RP-141200 | 0366r1 | | | Introduction of CA_B1_B3_B19 into TS 36.307 (Rel-12) | 12.5.0 |
| 09-2014 | RP-65 | RP-141205 | 0363r1 | | | Introduction of CA_B1_B3 into TS 36.307 (Rel-12) | 12.5.0 |
| 09-2014 | RP-65 | RP-141332 | 0429r1 | | | Introduction of CA_1A-7A into 36.307 (Rel-12) | 12.5.0 |
| 09-2014 | RP-65 | RP-141340 | 0376r1 | | | Introduction of CA_B1_B5_B7 into TS 36.307 (Rel-12) | 12.5.0 |
| 09-2014 | RP-65 | RP-141467 | 0432 | | | Introduction of 3 DL CA for Band 1+7+20 | 12.5.0 |
| 09-2014 | RP-65 | RP-141527 | 415r1 | | | CR for 36.307 on CA UE performance requirement in Rel-12 | 12.5.0 |
| 09-2014 | RP-65 | RP-141551 | 360 | | | Introduction of CA 8+11 to 36.307 (Rel-12) | 12.5.0 |
| 09-2014 | RP-65 | RP-141552 | 379 | | | Introduction of CA_41A-42A to TS 36.307 | 12.5.0 |
| 09-2014 | RP-65 | RP-141553 | 381 | | | Introduction of a new bandwidth combination set for CA_25A-25A into 36.307 | 12.5.0 |
| 09-2014 | RP-65 | RP-141554 | 418r1 | | | Introduction of requirements for 2DL inter-band carrier aggregation (FDD) and 2DL fallback | 12.5.0 |
| 09-2014 | RP-65 | RP-141554 | 421 | | | Introduction of requirements for 3DL inter-band carrier aggregation including Band 30 | 12.5.0 |
| 09-2014 | RP-65 | RP-141555 | 384 | | | Introduction of 3 Band Carrier Aggregation of Band 1,Band 3 and Band 5 to TS 36.307(Rel.12) | 12.5.0 |
| 09-2014 | RP-65 | RP-141556 | 357r1 | | | Introduction of 3 Band Carrier Aggregation (3DL/1UL) of Band 1, Band 3 and Band 8 to TS 36.307 | 12.5.0 |
| 09-2014 | RP-65 | RP-141558 | 402 | | | Introduction of CA band combination Band 1, Band 3 and Band 20 to TS 36.307 | 12.5.0 |
| 09-2014 | RP-65 | RP-141560 | 352 | | | Introduction of new CA_40C bandwidth combination set into 36.307 | 12.5.0 |
| 09-2014 | RP-65 | RP-141561 | 354 | | | CR to 36.307 Rel-12: Introduction of CA_41C-41A and CA_41A-41C | 12.5.0 |
| 12-2014 | RP-66 | RP-142142 | 440 | | | UE RF requirements in the release independent spec | 12.6.0 |
| 12-2014 | RP-66 | RP-142188 | 444 | | | Revision of common RRM requirements for release independent specification | 12.6.0 |
| 12-2014 | RP-66 | RP-142182 | 448 | | | [Rel-12] Introduction of inter-band CA_1-28 into TS36.307 | 12.6.0 |
| 12-2014 | RP-66 | RP-142189 | 455 | | | CR for TR 36.307: LTE_CA_B5_B13 | 12.6.0 |
| 12-2014 | RP-66 | RP-142190 | 458r2 | | | Introduction of additional band combinations for 3DL inter-band CA | 12.6.0 |
| 03-2015 | RP-67 | RP-150387 | 463 | | | R4-73AH-0113: Correction of UE RF requirements for dual uplink to TS 36.307 Rel-12 | 12.7.0 |
| 03-2015 | RP-67 | RP-150392 | 468 | | | CR for 36.307 on CA UE performance requirement in Rel-12 | 12.7.0 |
| 03-2015 | RP-67 | RP-150387 | 469 | | | Further revision of RSRP requirement for 36.307 release 12 | 12.7.0 |
| 05-2015 | RP-68 | RP-151068 | 0511r1 | | | Introduction of CA_3A-40A to TS 36.307 R13 | 13.0.0 |
| 05-2015 | RP-68 | RP-151070 | 0513r1 | | | Introduction of CA_3A-40C to TS 36.307 R13 | 13.0.0 |

| | | | | | | | |
|---------|--------|-----------|--------|---|---|--|---------|
| 05-2015 | RP-68 | RP-150958 | 461r1 | | | Introduction of dual uplink CA into 36.307 | 13.0.0 |
| 05-2015 | RP-68 | RP-150968 | 499r2 | | | Release independence CR for 2DL inter-band CA Rel-13 | 13.0.0 |
| 05-2015 | RP-68 | RP-150972 | 503r1 | | | Release independence CR for 3DL inter-band CA Rel-13 | 13.0.0 |
| 05-2015 | RP-68 | RP-150974 | 506r1 | | | Release independence CR for 4DL inter-band CA Rel-13 | 13.0.0 |
| 05-2015 | RP-68 | RP-150975 | 509 | | | Introduction of non-contiguous Carrier Aggregation (CA) in Band 42 for 3DL | 13.0.0 |
| 05-2015 | RP-68 | RP-151006 | 514 | | | Introduction of CA_42D to TS 36.307 | 13.0.0 |
| 09-2015 | RP-69 | RP-151501 | 0520r1 | | | Introduction of finished 4DL inter-band CAs to TS 36.307 | 13.1.0 |
| 09-2015 | RP-69 | RP-151503 | 0526 | | | [Rel-13] Introduction of dual uplink CA into 36.307 | 13.1.0 |
| 09-2015 | RP-69 | RP-151499 | 0538 | | | Rel-13 3DL combinations | 13.1.0 |
| 09-2015 | RP-69 | RP-151201 | 0543 | | | Introduction of CA_7A-40A and CA_7A-40C to TS 36.307 R13 | 13.1.0 |
| 10-2015 | | | | | | Correction of the release in the cover page | 13.1.1 |
| 12-2015 | RP-70 | RP-152158 | 0543a | | | Release independent requirements for CA_42E (Rel-13) | 13.2.0 |
| 12-2015 | RP-70 | RP-152160 | 0549 | | | Introduction of 4DL NC CA in band42 in 36.307 | 13.2.0 |
| 12-2015 | RP-70 | RP-152157 | 0561 | | | Introducing B20 + B67 CA into TS 36.307 | 13.2.0 |
| 12-2015 | RP-70 | RP-152168 | 0562 | | | Introduction of intra-band CA_8B to TS 36.307 | 13.2.0 |
| 12-2015 | RP-70 | RP-152171 | 0580 | | | Introduction of Band 65 | 13.2.0 |
| 12-2015 | RP-70 | RP-152167 | 0589 | | | Introduction of intra-band CA_5B to TS 36.307 | 13.2.0 |
| 12-2015 | RP-70 | RP-152169 | 0590 | | | Introduction of intra-band NC CA_5A-5A to TS 36.307 | 13.2.0 |
| 12-2015 | RP-70 | RP-152166 | 0596 | | | Introduction of 3DL/3UL Inter-band CA in TS36.307 | 13.2.0 |
| 12-2015 | RP-70 | RP-152163 | 0598 | | | Introduction of 5DL/1UL CA combinations into TS 36.307 (Rel-13) | 13.2.0 |
| 12-2015 | RP-70 | RP-152162 | 0604 | | | Introduction of finished 4DL inter-band CAs to TS 36.307 | 13.2.0 |
| 12-2015 | RP-70 | RP-152173 | 0612 | | | Introduction of 1447-1467MHz Band into 36.307 | 13.2.0 |
| 12-2015 | RP-70 | RP-152156 | 0616 | | | Rel-13 2DL combinations | 13.2.0 |
| 12-2015 | RP-70 | RP-152161 | 0620 | | | Rel-13 3DL combinations | 13.2.0 |
| 12-2015 | RP-70 | RP-152172 | 0628 | | | Introduction of Band 66 | 13.2.0 |
| 12-2015 | RP-70 | RP-152159 | 0632 | | | Introduction of intra-band non-contiguous CA in Band 41 for 4DL | 13.2.0 |
| 12-2015 | RP-70 | RP-152165 | 0634 | | | Introduction of 2 UL and 3 DL mixed inter/intra cases without MSD into 36.307 Rel-13 | 13.2.0 |
| 03/2016 | RP-71 | RP-160480 | 0655 | | B | Rel-13 3DL combinations | 13.3.0 |
| 03/2016 | RP-71 | RP-160481 | 0642 | | B | Introduction of completed R13 4DL inter-band CA's to TS 36.307 | 13.3.0 |
| 03/2016 | RP-71 | RP-160482 | 0651 | | B | Introduction of 5DL/1UL CA combinations into TS 36.307 (Rel-13) | 13.3.0 |
| 03/2016 | RP-71 | RP-160483 | 0647 | | B | Introduction of Band 68 | 13.3.0 |
| 2016/06 | RP-72 | RP-161142 | 0682 | 1 | F | CR TS 36.307 REL-13 | 13.4.0 |
| 2016/06 | RP-72 | RP-161142 | 0691 | 1 | F | Correction of RRM multiple uplink requirements and test cases in 36.307 | 13.4.0 |
| 09/2016 | RP-73 | RP-161628 | 0693 | | A | Release 13 36.307 CAT A CR to make Band 41 power class 2 release independent | 13.5.0 |
| 09/2016 | RP-73 | RP-161613 | 0705 | | B | CR for 4Rx requirements for release independent in Rel-13 | 13.5.0 |
| 12/2016 | RP-74 | RP-162387 | 0706 | 1 | B | Introduction of B46 DL 10 MHz release independent feature | 13.6.0 |
| 12/2016 | RP-74 | RP-162498 | 0710 | 1 | A | Addition of CA bandwidth Class F | 13.6.0 |
| 12/2016 | RP-74 | RP-162459 | 0715 | 2 | A | Correction UE category applicability | 13.6.0 |
| 12/2016 | RP-74 | RP-162407 | 0718 | 1 | B | Introduction of new bands for NB-IoT in 36.307 | 13.6.0 |
| 12/2016 | RP-74 | RP-162390 | 0720 | | F | Addition of UE category 0 and M1 to release independence specification | 13.6.0 |
| 06/2017 | RP-76 | RP-171291 | 0748 | 1 | F | Cleanup of TS 36.307 | 13.7.0 |
| 09/2017 | RP-77 | RP-171943 | 4353 | | F | CR for adding NB-IoT performance requirements in 36.307 in Rel-13 | 13.8.0 |
| 09/2017 | RP-77 | RP-171973 | 4356 | | F | CR for adding overlapping band B66 in 36.307 in Rel-13 | 13.8.0 |
| 09/2017 | RP-77 | RP-172044 | 4360 | | B | Additional LTE bands for UE category M1 and/or NB1 in Rel-15 | 13.8.0 |
| 2018-03 | RAN#79 | RP-180288 | 4369 | | A | Addition of missing features for TS 36.307 REL-13 | 13.9.0 |
| 2018-03 | RAN#79 | RP-180276 | 4374 | | B | Introduction of 4UL CA into TS36.307 | 13.9.0 |
| 2018-06 | RAN#80 | RP-181113 | 4379 | | B | TS 36.307 Rel-13 | 13.10.0 |
| 2018-06 | RAN#80 | RP-181097 | 4386 | 1 | A | TS 36.307 big CR for introduction new band support for 4Rx antenna ports R13 | 13.10.0 |
| 2018-06 | RAN#80 | RP-181087 | 4396 | | B | TS 36.307 big CR for introduction new band support for 8Rx antenna ports R13 | 13.10.0 |
| 2018-06 | RAN#80 | RP-181095 | 4398 | | B | Introduction of 3UL CA into TS36.307 | 13.10.0 |
| 2018-12 | RAN#81 | RP-182377 | 4407 | 1 | B | CR of adding B65 for NB1 | 13.11.0 |
| 2019-06 | RAN#84 | RP-191266 | 4412 | | F | Addition of 8Rx release independent features in TS 36.307 (Rel-13) | 13.12.0 |
| 2021-03 | RAN#91 | RP-210110 | 4443 | 1 | B | CR of adding LTE B24 for UE category NB1 in R17 | 13.13.0 |
| 2021-09 | RAN#93 | RP-211919 | 4450 | | B | CR on adding B24 for Cat-M1 36.307_13B | 13.14.0 |
| 2022-06 | RAN#96 | RP-221669 | 4460 | | B | CR on adding B48 for M1 | 13.15.0 |

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