Annex B (normative):  
Conditions for RRM requirements applicability for operating bands

# B.1 Conditions for NR RRC\_IDLE state mobility

## B.1.1 Introduction

In Annex B.1, the following conditions are specified:

- UE conditions which shall apply for UE intra-frequency measurements procedures and requirements in clause 4,

- UE conditions which shall apply for UE inter-frequency measurements procedures and requirements in clause 4.

## B.1.2 Conditions for measurements on NR intra-frequency cells for cell re-selection

This clause defines the following conditions for NR intra-frequency measurements performed based on SSBs for cell re-selection: SSB\_RP and SSB Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Table B.1.2-1 for FR1 NR cells.

The conditions are defined in Table B.1.2-2 for FR2 NR cells.

Table B.1.2-1: Conditions for intra-frequency cell re-selection in FR1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | NR operating band groups Note1 | Minimum SSB\_RP | | SSB Ês/Iot |
| dBm / SCSSSB | | dB |
| SCSSSB = 15 kHz | SCSSSB = 30 kHz |
| **Conditions** | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A | -124 | -121 | ≥ -4 |
| NR\_FDD\_FR1\_B | -123.5 | -120.5 |
| NR\_TDD\_FR1\_C | -123 | -120 |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | -122.5 | -119.5 |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | -122 | -119 |
| NR\_FDD\_FR1\_F | -121.5 | -118.5 |
| NR\_FDD\_FR1\_G | -121 | -118 |
| NR\_FDD\_FR1\_H | -120.5 | -117.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | |

Table B.1.2-2: Conditions for intra-frequency cell re-selection in FR2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | Angle of arrival | NR operating bands | Minimum SSB\_RP Note 2, Note 3 | | | | | SSB Ês/Iot |
| dBm / SCSSSB | | | | | dB |
| SCSSSB = 120 kHz | | | | SCSSSB = 240 kHz |
| UE Power class | | | | UE Power class |
| 1 | 2 | 3 | 4 | 1, 2, 3, 4 |
| Conditions | Rx Beam Peak | n257 | -125.3+Y1 | -110.8 | -109.1 | -124.8+Y4 | (Value for SCSSSB = 120 kHz) +3dB | ≥-4 |
| n258 | -125.3+Y1 | -110.8 | -109.1 | -124.8+Y4 |
| n259 |  |  | -105.5 |  |
| n260 | -122.3+Y1 |  | -106.5 | -122.8+Y4 |
| n261 | -125.3+Y1 | -110.8 | -109.1 | -124.8+Y4 |
| Spherical coverage Note 1 | n257 | -117.3+Z1 | -99.8 | -98.2 | -115.8+Z4 | (Value for SCSSSB = 120 kHz) +3dB | ≥-4 |
| n258 | -117.3+Z1 | -99.8 | -98.2 | -115.8+Z4 |
| n259 |  |  | -92.7 |  |
| n260 | -114.3+Z1 |  | -93.9 | -110.8+Z4 |
| n261 | -117.3+Z1 | -99.8 | -98.2 | -115.8+Z4 |
| NOTE 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  NOTE 2: Values specified at the Reference point to give minimum SSB Ês/Iot, with no applied noise.  NOTE 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and Spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19]. | | | | | | | | |

*Editor’s notes for Table B.1.2-2:*

*- The value of Y for Power classes 1 and 4 is FFS, where Y1 and Y4 are the rough/fine beam gain differences in Rx beam peak direction for Power classes 1 and 4 respectively*

*- The value of Z for Power classes 1 and 4 is FFS, where Z1 and Z4 are the rough/fine beam gain differences in spherical coverage directions for Power classes 1 and 4 respectively*

## B.1.3 Conditions for measurements on NR inter-frequency cells for cell re-selection

This clause defines the following conditions for NR inter-frequency measurements performed based on SSBs for cell re-selection: SSB\_RP and SSB Ês/Iot, applicable for a corresponding operating band.

The conditions defined in Table B.1.2-1 for FR1 NR intra-frequency cell re-selection shall also apply for FR1 NR inter-frequency cells in this clause.

The conditions defined in Table B.1.2-2 for FR2 NR intra-frequency cell re-selection shall also apply for FR2 NR inter-frequency cells in this clause.

# B.2 Conditions for UE measurements procedures and performance requirements in RRC\_CONNECTED state

## B.2.1 Introduction

### B.2.1.1 General

In Annex B.2, the following conditions are specified:

- The conditions for RRC connection release with redirection to NR requirements in clause 6.2.3.2.1,

- The conditions for UE transmit timing adjustment in clause 7.1

- UE conditions which shall apply for UE intra-frequency measurements procedures and requirements in clause 9,

UE conditions which shall apply for UE inter-frequency measurements procedures and requirements in clause 9,

- UE conditions which shall apply for UE intra-frequency measurements performance requirements in clause 10,

- UE conditions which shall apply for UE inter-frequency measurements performance requirements in clause 10.

### B.2.1.2 Derivation of Minimum SSB\_RP values for FR1

[FFS]

### B.2.1.3 Derivation of Minimum SSB\_RP values for FR2

*Editor’s note:*

*- The Assumption for UE beams (fine or rough) in Annex A RRM test cases is defined based on power class 3, and unless otherwise stated also applies for other UE power classes*

#### B.2.1.3.1 Minimum SSB\_RP values for Rx Beam Peak angle of arrival

Minimum SSB\_RP values in Tables B.2.2-2 and B.2.3-2 are based on Reference sensitivity for the Operating band and for the UE power class, taking a baseline of UE Power class 3 in Band n260 with 50 MHz channel bandwidth.

Minimum SSB\_RP = Reference sensitivity PC3, n260, 50MHz +Y -10Log10(PRBRefsens x 12) – SNRRefsens + SSB Ês/Iot + ∆MBP,n

where:

Reference sensitivity PC3, n260, 50MHz is the reference sensitivity value in dBm specified for power class 3 in Band n260 for 50 MHz Channel bandwidth in Table 7.3.2.3-1 of TS 38.101-2 [19];

Y is the gain difference between fine and rough beams, which is defined in Table B.2.1.3.1-1;

Table B.2.1.3.1-1: Gain difference Y between fine and rough beams, Rx beam peak direction

|  |  |  |  |
| --- | --- | --- | --- |
| Value “Y” in dB, for each UE power class | | | |
| 1 | 2 | 3 | 4 |
| FFS | 9.0 | 7.0 | FFS |

PRBRefsens is NRB associated with subcarrier spacing 120 kHz for 50MHz in TS 38.101-2 [19] Table 5.3.2-1, and is 32;

12 is the number of subcarriers in a PRB;

SNRRefsens is the SNR used for simulation of Refsens and EIS spherical coverage, and is -1 dB;

SSB Ês/Iot is the minimum value required by the UE to perform measurements, and is -6 dB for intra-frequency measurements and -4 dB for inter-frequency measurements. The only contribution to Iot is the UE internal noise;

∆MBP,n is the UE multi-band relaxation factor value in dB specified in TS 38.101-2 [19] clause 6.2.1.

The calculated Minimum SSB\_RP value for the baseline of UE power class 3 in Band n260 is (-109.5+∆MBP,n) dBm/120kHz for intra-frequency measurements and (-107.5+∆MBP,n) dBm/120kHz for inter-frequency measurements.

The following methodology to define the Minimum SSB\_RP level for power class X (PC\_X) and operating band Y (Band\_Y) is used:

For Intra-frequency: Minimum SSB\_RP (PC\_X, Band\_Y) = -109.5 dBm/120kHz + Refsens PC\_X, Band\_Y, 50MHz – Refsens PC3, n260, 50MHz + Y PC\_X – Y PC3 +∆MBP,n,

For Inter-frequency: Minimum SSB\_RP (PC\_X, Band\_Y) = -107.5 dBm/120kHz + Refsens PC\_X, Band\_Y, 50MHz – Refsens PC3, n260, 50MHz + Y PC\_X – Y PC3 +∆MBP,n.

#### B.2.1.3.2 Minimum SSB\_RP values for angle of arrival within Spherical coverage

Minimum SSB\_RP values in Tables B.2.2-2 and B.2.3-2 are based on EIS spherical coverage for the Operating band and for the UE power class, taking a baseline of UE power class 3 in Band n260 with 50 MHz channel bandwidth.

Minimum SSB\_RP = EIS spherical coverage PC3, n260, 50MHz +Z -10Log10(PRBRefsens x 12) – SNRRefsens + SSB Ês/Iot + ∆MBS,n

where:

EIS spherical coverage PC3, n260, 50MHz is the EIS spherical coverage value in dBm specified for power class 3 in Band n260 for 50MHz Channel bandwidth in TS 38.101-2 [19] Table 7.3.4.3-1;

Z is the gain difference between fine and rough beams, and is defined in Table B.2.1.3.2-1;

Table B.2.1.3.2-1: Gain difference Z between fine and rough beams, Spherical coverage directions

|  |  |  |  |
| --- | --- | --- | --- |
| Value “Z” in dB, for each UE power class | | | |
| 1 | 2 | 3 | 4 |
| FFS | 9.0 | 7.0 | FFS |

PRBRefsens is NRB associated with subcarrier spacing 120 kHz for 50MHz in TS 38.101-2 [19] Table 5.3.2-1, and is 32;

12 is the number of subcarriers in a PRB;

SNRRefsens is the SNR used for simulation of Refsens and EIS spherical coverage, and is -1 dB;

SSB Ês/Iot is the minimum value required by the UE to perform measurements, and is -6 dB for intra-frequency measurements and -4 dB for inter-frequency measurements. The only contribution to Iot is the UE internal noise;

∆MBS,n is the UE multi-band relaxation factor value in dB specified in TS 38.101-2 [19] clause 6.2.1.

The calculated Minimum SSB\_RP value for the baseline of UE power class 3 in Band n260 is (-96.9+∆MBS,n) dBm/120kHz for intra-frequency measurements and is (-94.9+∆MBS,n) dBm/120kHz for inter-frequency measurements.

The following methodology to define the Minimum SSB\_RP level for power class X (PC\_X) and operating band Y (Band\_Y) is used:

For Intra-frequency: Minimum SSB\_RP (PC\_X, Band\_Y) = -96.9 dBm/120kHz + EIS spherical coverage PC\_X, Band\_Y, 50MHz – EIS spherical coverage PC3, n260, 50MHz + Z PC\_X – Z PC3 +∆MBS,n

For Inter-frequency: Minimum SSB\_RP (PC\_X, Band\_Y) = -94.9 dBm/120kHz + EIS spherical coverage PC\_X, Band\_Y, 50MHz – EIS spherical coverage PC3, n260, 50MHz + Z PC\_X – Z PC3 +∆MBS,n

### B.2.1.4 Gain to SS-RSRP and CSI-RSRP measurement point for FR1

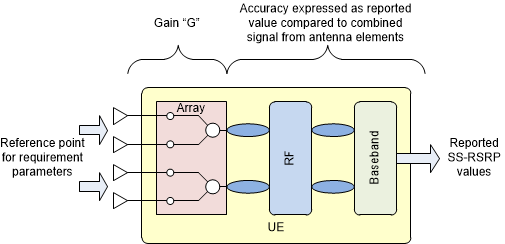
In FR1 conducted requirements are specified at the UE antenna connector, which is also the SS-RSRP and CSI-RSRP measurement point.

### B.2.1.5 Gain to SS-RSRP and CSI-RSRP measurement point for FR2

#### B.2.1.5.1 Gain to SS-RSRP and CSI-RSRP measurement point for Rx Beam Peak angle of arrival

In clause 5.1.1 of TS 38.215 [4] SS-RSRP and CSI-RSRP is defined to be measured based on the combined signal from antenna elements corresponding to a given receiver branch. The reference point for requirement parameters from the UE perspective is the input of the UE antenna array. The gain “G” relates the combined signal from antenna elements corresponding to a given receiver branch to the reference point for requirement parameters.

The gain “G” affects absolute signal level values reported by the UE.



**Figure B.2.1.5.1-1: Gain and Reference point for requirement parameters**

The gain range for each power class is specified in Table B.2.1.5.1-1.

Table B.2.1.5.1-1: UE gain G, Rx beam peak direction

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | UE Power class | | | |
|  | 1 | 2 | 3 | 4 |
| Minimum, dBi | FFS | FFS | -10 | FFS |
| Maximum, dBi | FFS | FFS | +20 | FFS |

Gain range in spherical coverage directions may be lower than in Rx beam peak direction, according to the difference between the EIS spherical coverage value specified in TS 38.101-2 [19] clause 7.3.4 and the Reference sensitivity level specified in TS 38.101-2 [19] clause 7.3.2.

#### B.2.1.5.2 Gain to SS-RSRP measurement point for different frequency

In any specific direction, the UE gain G may be different depending on frequencies. The gain “Ginter” affects relative signal level values reported by the UE when measuring between different frequencies and is specified in Table B.2.1.5.2-1 for each power class.

Table B.2.1.5.2-1: UE gain difference between inter-frequencies Ginter

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | UE Power class | | | |
|  | 1 | 2 | 3 | 4 |
| Maximum difference, dB | FFS | FFS | 3 | FFS |

#### B.2.1.5.3 Alignment of Rough beam to Rx beam Peak

The definition of Rx Beam Peak in TS 38.101-2 [19] clause 7.3.2 is based on Throughput at Reference sensitivity power level, and assumes use of Fine beams. In many RRM scenarios the UE can use Rough beams, but the largest Rough beam gain direction may not be aligned to the Fine beam Peak direction.

When the Rx Beam Peak is selected and defined based on Fine Beams, the rough beam gain in that direction may be lower than the largest rough beam gain in another direction within Spherical Coverage. The term “D” is the maximum allowed rough beam gain reduction, and is specified in Table B.2.1.5.3-1 for each power class.

Table B.2.1.5.3-1: Rough Beam gain reduction “D” in Rx Beam Peak direction

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | UE Power class | | | |
|  | 1 | 2 | 3 | 4 |
| Maximum gain reduction, dB | FFS | FFS | 5.5 | FFS |

### B.2.1.6 Gain to PRS-RSRP measurement point for FR2

#### B.2.1.6.1 Gain to PRS-RSRP measurement point for Rx Beam Peak angle of arrival

In clause 5.1.28 of TS 38.215 [4] PRS-RSRP is defined to be measured based on the combined signal from antenna elements corresponding to a given receiver branch. The reference point for requirement parameters from the UE perspective is the input of the UE antenna array. The gain “G” relates the combined signal from antenna elements corresponding to a given receiver branch to the reference point for requirement parameters.

The gain “G” affects absolute signal level values reported by the UE.

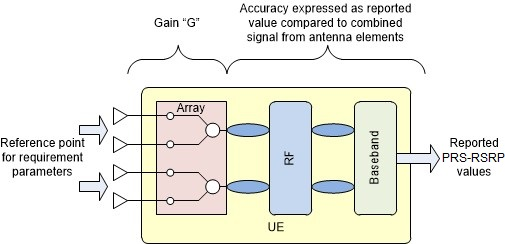


Figure B.2.1.6.1-1: Gain and Reference point for requirement parameters

The gain range for each power class is specified in Table B.2.1.61-1.

Table B.2.1.6.1-1: UE gain G, Rx beam peak direction

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | UE Power class | | | |
|  | 1 | 2 | 3 | 4 |
| Minimum, dBi | FFS | FFS | -10 | FFS |
| Maximum, dBi | FFS | FFS | +20 | FFS |

Gain range in spherical coverage directions may be lower than in Rx beam peak direction, according to the difference between the EIS spherical coverage value specified in TS 38.101-2 [19] clause 7.3.4 and the Reference sensitivity level specified in TS 38.101-2 [19] clause 7.3.2.

## B.2.2 Conditions for NR intra-frequency measurements

This clause defines the following conditions for NR intra-frequency measurements and corresponding procedures performed based on SSBs: SSB\_RP and SSB Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Table B.2.2-1 for FR1 NR cells.

The conditions are defined in Table B.2.2-2 for FR2 NR cells.

Table B.2.2-1: Conditions for intra-frequency measurements in FR1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | NR operating band groups Note1 | Minimum SSB\_RP | | SSB Ês/Iot |
| dBm / SCSSSB | | dB |
| SCSSSB = 15 kHz | SCSSSB = 30 kHz |
| Conditions | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A, NR\_SDL\_FR1\_A | -127 | -124 | ≥ -6 |
| NR\_FDD\_FR1\_B | -126.5 | -123.5 |
| NR\_TDD\_FR1\_C | -126 | -123 |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | -125.5 | -122.5 |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | -125 | -122 |
| NR\_FDD\_FR1\_F | -124.5 | -121.5 |
| NR\_FDD\_FR1\_G | -124 | -121 |
| NR\_FDD\_FR1\_H | -123.5 | -120.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | |

Table B.2.2-2: Conditions for intra-frequency measurements in FR2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Angle of arrival | NR operating bands | Minimum SSB\_RP Note 2, Note 3 | | | | | SSB Ês/Iot |
| dBm / SCSSSB | | | | | dB |
| SCSSSB = 120 kHz | | | | SCSSSB = 240 kHz |
| UE power class | | | | UE power class |
| 1 | 2 | 3 | 4 | 1, 2, 3, 4 |
| Conditions | Rx Beam Peak | n257 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 | (Value for SCSSSB = 120 kHz) +3dB | ≥-6 |
| n258 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 |
| n259 |  |  | -108.5 |  |
| n260 | -125.3+Y1 |  | -109.5 | -125.8+Y4 |
| n261 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 |
| Spherical coverage Note 1 | n257 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 | (Value for SCSSSB = 120 kHz) +3dB | ≥-6 |
| n258 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 |
| n259 |  |  | -95.7 |  |
| n260 | -117.3+Z1 |  | -96.9 | -113.8+Z4 |
| n261 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 |
| Note 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  Note 2: Values specified at the Reference point to give minimum SSB Ês/Iot, with no applied noise.  Note 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19]. | | | | | | | | |

*Editor’s notes for Table B.2.2-2:*

*- The value of Y for power classes 1 and 4 is FFS, where Y1 and Y4 are the rough/fine beam gain differences in Rx beam peak direction for power classes 1 and 4 respectively*

*- The value of Z for power classes 1 and 4 is FFS, where Z1 and Z4 are the rough/fine beam gain differences in spherical coverage directions for power classes 1 and 4 respectively*

## B.2.3 Conditions for NR inter-frequency measurements

This clause defines the following conditions for NR inter-frequency measurements and corresponding procedures performed based on SSBs: SSB\_RP and SSB Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Table B.2.3-1 for FR1 NR cells.

The conditions are defined in Table B.2.3-2 for FR2 NR cells.

Table B.2.3-1: Conditions for inter-frequency measurements in FR1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | NR operating band groups Note1 | Minimum SSB\_RP | | SSB Ês/Iot |
| dBm / SCSSSB | | dB |
| SCSSSB = 15 kHz | SCSSSB = 30 kHz |
| Conditions | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A, NR\_SDL\_FR1\_A | -125 | -122 | ≥ -4 |
| NR\_FDD\_FR1\_B | -124.5 | -121.5 |
| NR\_TDD\_FR1\_C | -124 | -121 |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | -124.5 | -120.5 |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | -123 | -120 |
| NR\_FDD\_FR1\_F | -122.5 | -119.5 |
| NR\_FDD\_FR1\_G | -122 | -119 |
| NR\_FDD\_FR1\_H | -121.5 | -118.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | |

**Table B.2.3-2: Conditions for inter-frequency measurements in FR2**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Angle of arrival | NR operating bands | Minimum SSB\_RP Note 2, Note 3 | | | | | SSB Ês/Iot |
| dBm / SCSSSB | | | | | dB |
| SCSSSB = 120 kHz | | | | SCSSSB = 240 kHz |
| UE power class | | | | UE power class |
| 1 | 2 | 3 | 4 | 1, 2, 3, 4 |
| Conditions | Rx Beam Peak | n257 | -126.3+Y1 | -111.8 | -110.1 | -125.8+Y4 | (Value for SCSSSB = 120 kHz) +3dB | ≥-4 |
| n258 | -126.3+Y1 | -111.8 | -110.1 | -125.8+Y4 |
| n259 |  |  | -106.5 |  |
| n260 | -123.3+Y1 |  | -107.5 | -123.8+Y4 |
| n261 | -126.3+Y1 | -111.8 | -110.1 | -125.8+Y4 |
| Spherical coverage Note 1 | n257 | -118.3+Z1 | -100.8 | -99.2 | -116.8+Z4 | (Value for SCSSSB = 120 kHz) +3dB | ≥-4 |
| n258 | -118.3+Z1 | -100.8 | -99.2 | -116.8+Z4 |
| n259 |  |  | -93.7 |  |
| n260 | -115.3+Z1 |  | -94.9 | -111.8+Z4 |
| n261 | -118.3+Z1 | -100.8 | -99.2 | -116.8+Z4 |
| NOTE 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  NOTE 2: Values specified at the Reference point to give minimum SSB Ês/Iot, with no applied noise.  NOTE 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and Spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19]. | | | | | | | | |

*Editor’s notes for Table B.2.3-2:*

*- The value of Y for power classes 1 and 4 is FFS, where Y1 and Y4 are the rough/fine beam gain differences in Rx beam peak direction for power classes 1 and 4 respectively*

*- The value of Z for power classes 1 and 4 is FFS, where Z1, and Z4 are the rough/fine beam gain differences in spherical coverage directions for power classes 1 and 4 respectively*

## B.2.4 Conditions for NR L1-RSRP reporting

### B.2.4.1 Conditions for SSB based L1-RSRP reporting

This clause defines the following conditions for NR L1-RSRP measurement reporting and corresponding procedures performed based on SSBs: SSB\_RP and SSB Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Table B.2.4.1-1 for FR1 NR cells.

The conditions are defined in Table B.2.4.1-2 for FR2 NR cells.

Table B.2.4.1-1: Conditions for SSB based L1-RSRP measurements in FR1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | NR operating band groups Note1 | Minimum SSB\_RP | | SSB Ês/Iot |
| dBm / SCSSSB | | dB |
| SCSSSB = 15 kHz | SCSSSB = 30 kHz |
| Conditions | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A, NR\_SDL\_FR1\_A | -124 | -121 | ≥ -3 |
| NR\_FDD\_FR1\_B | -123.5 | -120.5 |
| NR\_TDD\_FR1\_C | -123 | -120 |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | -122.5 | -119.5 |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | -122 | -119 |
| NR\_FDD\_FR1\_F | -121.5 | -118.5 |
| NR\_FDD\_FR1\_G | -121 | -118 |
| NR\_FDD\_FR1\_H | -120.5 | -117.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | |

**Table B.2.4.1-2: Conditions for SSB based L1-RSRP measurements in FR2**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Angle of arrival | NR operating bands | Minimum SSB\_RP Note 2, Note 3 | | | | | SSB Ês/Iot |
| dBm / SCSSSB | | | | | dB |
| SCSSSB = 120 kHz | | | | SCSSSB = 240 kHz |
| UE power class | | | | UE power class |
| 1 | 2 | 3 | 4 | 1, 2, 3, 4 |
| Conditions | Rx Beam Peak | n257 | -125.3+Y1 | -110.8 | -109.1 | -124.8+Y4 | (Value for SCSSSB = 120 kHz) +3dB | ≥-3 |
| n258 | -125.3+Y1 | -110.8 | -109.1 | -124.8+Y4 |
| n259 |  |  | -105.5 |  |
| n260 | -122.3+Y1 |  | -106.5 | -122.8+Y4 |
| n261 | -125.3+Y1 | -110.8 | -109.1 | -124.8+Y4 |
| Spherical coverage Note 1 | n257 | -117.3+Z1 | -99.8 | -98.2 | -115.8+Z4 | (Value for SCSSSB = 120 kHz) +3dB | ≥-3 |
| n258 | -117.3+Z1 | -99.8 | -98.2 | -115.8+Z4 |
| n259 |  |  | -92.7 |  |
| n260 | -114.3+Z1 |  | -93.9 | -110.8+Z4 |
| n261 | -117.3+Z1 | -99.8 | -98.2 | -115.8+Z4 |
| NOTE 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  NOTE 2: Values specified at the Reference point to give minimum SSB Ês/Iot, with no applied noise.  NOTE 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and Spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19]. | | | | | | | | |

*Editor’s notes for Table B.2.4.1-2:*

*- The value of Y for power classes 1 and 4 is FFS, where Y1 and Y4 are the rough/fine beam gain differences in Rx beam peak direction for power classes 1 and 4 respectively*

*- The value of Z for power classes 1 and 4 is FFS, where Z1 and Z4 are the rough/fine beam gain differences in spherical coverage directions for power classes 1 and 4 respectively*

### B.2.4.2 Conditions for CSI-RS based L1-RSRP reporting

This clause defines the following conditions for NR L1-RSRP measurement reporting and corresponding procedures performed based on CSI-RS: CSI-RS\_RP and CSI-RS Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Table B.2.4.2-1 for FR1 NR cells.

The conditions are defined in Table B.2.4.2-2 for FR2 NR cells.

Table B.2.4.2-1: Conditions for CSI-RS based L1-RSRP measurements in FR1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | NR operating band groups Note1 | Minimum CSI-RS\_RP | | | CSI-RS Ês/Iot |
| dBm / SCSCSI-RS | | | dB |
| SCSCSI-RS = 15 kHz | SCSCSI-RS = 30 kHz | SCSCSI-RS = 60 kHz |
| Conditions | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A, NR\_SDL\_FR1\_A | -124 | -121 | -118 | ≥ -3 |
| NR\_FDD\_FR1\_B | -123.5 | -120.5 | -117.5 |
| NR\_TDD\_FR1\_C | -123 | -120 | -117 |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | -122.5 | -119.5 | -116.5 |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | -122 | -119 | -116 |
| NR\_FDD\_FR1\_F | -121.5 | -118.5 | -115.5 |
| NR\_FDD\_FR1\_G | -121 | -118 | -115 |
| NR\_FDD\_FR1\_H | -120.5 | -117.5 | -114.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | | |

**Table B.2.4.2-2: Conditions for CSI-RS based L1-RSRP measurements in FR2**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Angle of arrival | NR operating bands | Minimum CSI-RS\_RP Note 2, Note 3 | | | | | CSI-RS Ês/Iot |
| dBm / SCSCSI-RS | | | | | dB |
| SCSCSI-RS = 60 kHz | | | | SCSCSI-RS = 120 kHz |
| UE power class | | | | UE power class |
| 1 | 2 | 3 | 4 | 1, 2, 3, 4 |
| Conditions | Rx Beam Peak | n257 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 | (Value for SCSCSI-RS = 60 kHz) +3dB | ≥-3 |
| n258 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 |
| n259 |  |  | -108.5 |  |
| n260 | -125.3+Y1 |  | -109.5 | -125.8+Y4 |
| n261 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 |
| Spherical coverage Note 1 | n257 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 | (Value for SCSCSI-RS = 60 kHz) +3dB | ≥-3 |
| n258 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 |
| n259 |  |  | -95.7 |  |
| n260 | -117.3+Z1 |  | -96.9 | -113.8+Z4 |
| n261 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 |
| NOTE 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  NOTE 2: Values specified at the Reference point to give minimum CSI-RS Ês/Iot, with no applied noise.  NOTE 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and Spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19]. | | | | | | | | |

*Editor’s notes for Table B.2.4.2-2:*

*- The value of Y for power classes 1 and 4 is FFS, where Y1 and Y4 are the rough/fine beam gain differences in Rx beam peak direction for power classes 1 and 4 respectively*

*- The value of Z for power classes 1 and 4 is FFS, where Z1 and Z4 are the rough/fine beam gain differences in spherical coverage directions for power classes 1 and 4 respectively*

## B.2.5 Conditions for RRC connection release with redirection to NR

This clause defines the following conditions for RRC connection release with redirection to NR: SSB\_RP and SSB Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Table B.2.5-1 for FR1 NR cells.

The conditions are defined in Table B.2.5-2 for FR2 NR cells.

Table B.2.5-1: Conditions for for RRC connection release with redirection to NR in FR1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | NR operating band groups Note1 | Minimum SSB\_RP | | SSB Ês/Iot |
| dBm / SCSSSB | | dB |
| SCSSSB = 15 kHz | SCSSSB = 30 kHz |
| Conditions | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A | -125 | -122 | ≥ -4 |
| NR\_FDD\_FR1\_B | -124.5 | -121.5 |
| NR\_TDD\_FR1\_C | -124 | -121 |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | -124.5 | -120.5 |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | -123 | -120 |
| NR\_FDD\_FR1\_F | -122.5 | -119.5 |
| NR\_FDD\_FR1\_G | -122 | -119 |
| NR\_FDD\_FR1\_H | -121.5 | -118.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | |

Table B.2.5-2: Conditions for RRC connection release with redirection to NR in FR2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Angle of arrival | NR operating bands | Minimum SSB\_RP Note 2, Note 3 | | | | | SSB Ês/Iot |
| dBm / SCSSSB | | | | | dB |
| SCSSSB = 120 kHz | | | | SCSSSB = 240 kHz |
| UE power class | | | | UE power class |
| 1 | 2 | 3 | 4 | 1, 2, 3, 4 |
| Conditions | Rx Beam Peak | n257 | -126.3+Y1 | -111.8 | -110.1 | -125.8+Y4 | (Value for SCSSSB = 120 kHz) +3dB | ≥-4 |
| n258 | -126.3+Y1 | -111.8 | -110.1 | -125.8+Y4 |
| n259 |  |  | -106.5 |  |
| n260 | -123.3+Y1 |  | -107.5 | -123.8+Y4 |
| n261 | -126.3+Y1 | -111.8 | -110.1 | -125.8+Y4 |
| Spherical coverage Note 1 | n257 | -118.3+Z1 | -100.8 | -99.2 | -116.8+Z4 | (Value for SCSSSB = 120 kHz) +3dB | ≥-4 |
| n258 | -118.3+Z1 | -100.8 | -99.2 | -116.8+Z4 |
| n259 |  |  | -93.7 |  |
| n260 | -115.3+Z1 |  | -94.9 | -111.8+Z4 |
| n261 | 118.3+Z1 | -100.8 | -99.2 | -116.8+Z4 |
| NOTE 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  NOTE 2: Values specified at the Reference point to give minimum SSB Ês/Iot, with no applied noise.  NOTE 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19]. | | | | | | | | |

*Editor’s notes for Table B.2.5.2-2:*

*- The value of Y for power classes 1 and 4 is FFS, where Y1 and Y4 are the rough/fine beam gain differences in Rx beam peak direction for power classes 1 and 4 respectively*

*- The value of Z for power classes 1 and 4 is FFS, where Z1 and Z4 are the rough/fine*

## B.2.6 Void

### B.2.6.1 Void

**Table B.2.6.1-1: Void**

Table B.2.6.1-2: Void

### B.2.6.2 Void

## B.2.7 Conditions for SRS-RSRP measurements

This clause defines the following conditions for SRS-RSRP measurement and corresponding procedures performed based on SRSs: SRS\_RP and SRS Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Table B.2.7-1 for FR1 NR cells.

The conditions are defined in Table B.2.7-2 for FR2 NR cells.

Table B.2.7-1: Conditions for SRS-RSRP measurements in FR1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | NR operating band groups Note1 | Minimum SRS\_RP | | | SRS Ês/Iot |
| dBm / SCSSRS | | | dB |
| SCSSRS = 15 kHz | SCSSRS = 30 kHz | SCSSRS = 60 kHz |
| Conditions | NR\_TDD\_FR1\_A | -120 | -117 | -114 | ≥ 1 |
| NR\_TDD\_FR1\_C | -119 | -116 | -113 |
| NR\_TDD\_FR1\_D | -118.5 | -115.5 | -112.5 |
| NR\_TDD\_FR1\_E | -118 | -115 | -112 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | | |

**Table B.2.7-2: Conditions for SRS-RSRP measurements in FR2**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Angle of arrival | NR operating bands | Minimum SRS\_RP Note 2, Note 3 | | | | | SRS Ês/Iot |
| dBm / SCSSRS | | | | | dB |
| SCSSRS = 60 kHz | | | | SCSSRS = 120 kHz |
| UE Power class | | | | UE Power class |
| **1** | **2** | **3** | **4** | **1, 2, 3, 4** |
| **Conditions** | Rx Beam Peak | n257 | -124.5 | -119.0 | -115.3 | -124.0 | (Value for SCSSRS = 60 kHz) +3dB | ≥1 |
| n258 | -124.5 | -119.0 | -115.3 | -124.0 |
| n260 | -121.5 |  | -112.7 | -122.0 |
| n261 | -124.5 | -119.0 | -115.3 | -124.0 |
| Spherical coverage **Note 1** | n257 | -116.5 | -108.0 | -104.4 | -115.0 | (Value for SCSSRS = 60 kHz) +3dB | ≥1 |
| n258 | -116.5 | -108.0 | -104.4 | -115.0 |
| n260 | -113.5 |  | -100.1 | -110.0 |
| n261 | -116.5 | -108.0 | -104.4 | -115.0 |
| NOTE 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  NOTE 2: Values specified at the Reference point to give minimum SRS Ês/Iot, with no applied noise.  NOTE 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and Spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19]. | | | | | | | | |

## B.2.8 Conditions for NR L1-SINR reporting

### B.2.8.1 Conditions for L1-SINR reporting with CSI-RS based CMR and no dedicated IMR configured

This clause defines the following conditions for NR L1-SINR measurement reporting and corresponding procedures performed based on CSI-RSs: CSI-RS\_RP and CSI-RS Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Tables B.2.8.1-1 for FR1 NR cells.

The conditions are defined in Tables B.2.8.1-2 for FR2 NR cells.

Table B.2.8.1-1: Conditions for L1-SINR measurements with CSI-RS based CMR only in FR1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **NR operating band groups Note1** | **Minimum CSI-RS\_RP** | | | **CSI-RS CMR Ês/Iot** |
| **dBm / SCSCSI-RS** | | | **dB** |
| **SCSCSI-RS = 15 kHz** | **SCSCSI-RS = 30 kHz** | **SCSCSI-RS = 60 kHz** |
| **Conditions** | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A, NR\_SDL\_FR1\_A | -124 | -121 | -118 | ≥ -3 |
| NR\_FDD\_FR1\_B | -123.5 | -120.5 | -117.5 |
| NR\_TDD\_FR1\_C | -123 | -120 | -117 |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | -122.5 | -119.5 | -116.5 |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | -122 | -119 | -116 |
| NR\_FDD\_FR1\_F | -121.5 | -118.5 | -115.5 |
| NR\_FDD\_FR1\_G | -121 | -118 | -115 |
| NR\_FDD\_FR1\_H | -120.5 | -117.5 | -114.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | | |

Table B.2.8.1-2: Conditions for L1-SINR measurements with CSI-RS based CMR only in FR2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | **Angle of arrival** | **NR operating bands** | **Minimum CSI-RS\_RP Note 2, Note 3** | | | | | **CSI-RS CMR Ês/Iot** |
| **dBm / SCSCSI-RS** | | | | | **dB** |
| **SCSCSI-RS = 60 kHz** | | | | **SCSCSI-RS = 120 kHz** |
| **UE power class** | | | | **UE power class** |
| **1** | **2** | **3** | **4** | **1, 2, 3, 4** |
| Conditions | Rx Beam Peak | n257 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 | (Value for SCSCSI-RS = 60 kHz) +3dB | ≥-3 |
| n258 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 |
| n259 |  |  | -108.5 |  |
| n260 | -125.3+Y1 |  | -109.5 | -125.8+Y4 |
| n261 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 |
| Spherical coverage Note 1 | n257 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 | (Value for SCSCSI-RS = 60 kHz) +3dB | ≥-3 |
| n258 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 |
| n259 |  |  | -95.7 |  |
| n260 | -117.3+Z1 |  | -96.9 | -113.8+Z4 |
| n261 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 |
| NOTE 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  NOTE 2: Values specified at the Reference point to give minimum CSI-RS Ês/Iot, with no applied noise.  NOTE 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and Spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19]. | | | | | | | | |

### B.2.8.2 Conditions for L1-SINR reporting with SSB based CMR and dedicated IMR configured

#### B.2.8.2.1 L1-SINR reporting with SSB based CMR and dedicated ZP-IMR configured

This clause defines the following conditions for NR L1-SINR measurement reporting and corresponding procedures performed based on SSBs and ZP-IMRs: SSB\_RP and SSB Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Tables B.2.8.2.1-1 for FR1 NR cells.

The conditions are defined in Tables B.2.8.2.1-2 for FR2 NR cells.

Table B.2.8.2.1-1: Conditions for L1-SINR measurements with SSB based CMR and ZP-IMR in FR1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Parameter** | **NR operating band groups Note1** | **Minimum SSB\_RP** | | **SSB-CMR Ês/Iot** |
| **dBm / SCSSSB** | | **dB** |
| **SCSSSB = 15 kHz** | **SCSSSB = 30 kHz** |
| **Conditions** | NR\_FDD\_FR1\_A,  NR\_TDD\_FR1\_A,  NR\_SDL\_FR1\_A | -124 | -121 | ≥ -3 |
| NR\_FDD\_FR1\_B | -123.5 | -120.5 |
| NR\_TDD\_FR1\_C | -123 | -120 |
| NR\_FDD\_FR1\_D,  NR\_TDD\_FR1\_D | -122.5 | -119.5 |
| NR\_FDD\_FR1\_E,  NR\_TDD\_FR1\_E | -122 | -119 |
| NR\_FDD\_FR1\_F | -121.5 | -118.5 |
| NR\_FDD\_FR1\_G | -121 | -118 |
| NR\_FDD\_FR1\_H | -120.5 | -117.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | |

Table B.2.8.2.1-2: Conditions for L1-SINR measurements with SSB based CMR and ZP-IMR in FR2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | **Angle of arrival** | **NR operating bands** | **Minimum SSB\_RP Note 2, Note 3** | | | | | **SSB-CMR Ês/Iot** |
| **dBm / SCSSSB** | | | | | **dB** |
| **SCSSSB = 120 kHz** | | | | **SCSSSB = 240 kHz** |
| **UE power class** | | | | **UE power class** |
| **1** | **2** | **3** | **4** | **1, 2, 3, 4** |
| Conditions | Rx Beam Peak | n257 | -125.3+Y1 | -110.8 | -109.1 | -124.8+Y4 | (Value for SCSSSB = 120 kHz) +3dB | ≥-3 |
| n258 | -125.3+Y1 | -110.8 | -109.1 | -124.8+Y4 |
| n259 |  |  | -105.5 |  |
| n260 | -122.3+Y1 |  | -106.5 | -122.8+Y4 |
| n261 | -125.3+Y1 | -110.8 | -109.1 | -124.8+Y4 |
| Spherical coverage Note 1 | n257 | -117.3+Z1 | -99.8 | -98.2 | -115.8+Z4 | (Value for SCSSSB = 120 kHz) +3dB | ≥-3 |
| n258 | -117.3+Z1 | -99.8 | -98.2 | -115.8+Z4 |
| n259 |  |  | -92.7 |  |
| n260 | -114.3+Z1 |  | -93.9 | -110.8+Z4 |
| n261 | -117.3+Z1 | -99.8 | -98.2 | -115.8+Z4 |
| NOTE 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  NOTE 2: Values specified at the Reference point to give minimum SSB Ês/Iot, with no applied noise.  NOTE 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and Spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19]. | | | | | | | | |

#### B.2.8.2.2 L1-SINR reporting with SSB based CMR and dedicated NZP-IMR configured

This clause defines the following conditions for NR L1-SINR measurement reporting and corresponding procedures performed based on SSBs and NZP-IMRs: SSB\_RP, SSB Ês/Iot and NZP-IMR Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Tables B.2.8.2.2-1 for FR1 NR cells.

The conditions are defined in Tables B.2.8.2.2-2 for FR2 NR cells.Table B.2.8.2.2-1: Conditions for L1-SINR measurements with SSB based CMR and NZP-IMR in FR1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **NR operating band groups Note1** | **Minimum SSB\_RP** | | **SSB-CMR Ês/Iot** | **NZP-IMR Ês/Iot** |
| **dBm / SCSSSB** | | **dB** | **dB** |
| **SCSSSB = 15 kHz** | **SCSSSB = 30 kHz** |
| **Conditions** | NR\_FDD\_FR1\_A,  NR\_TDD\_FR1\_A,  NR\_SDL\_FR1\_A | -121 | -118 | ≥ 0 | ≥ 0 |
| NR\_FDD\_FR1\_B | -120.5 | -117.5 |
| NR\_TDD\_FR1\_C | -120 | -117 |
| NR\_FDD\_FR1\_D,  NR\_TDD\_FR1\_D | -119.5 | -116.5 |
| NR\_FDD\_FR1\_E,  NR\_TDD\_FR1\_E | -119 | -116 |
| NR\_FDD\_FR1\_F | -118.5 | -115.5 |
| NR\_FDD\_FR1\_G | -118 | -115 |
| NR\_FDD\_FR1\_H | -117.5 | -114.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | | |

Table B.2.8.2.2-2: Conditions for L1-SINR measurements with SSB based CMR and NZP-IMR in FR2

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | **Angle of arrival** | **NR operating bands** | **Minimum SSB\_RP Note 2, Note 3** | | | | | **SSB-CMR Ês/Iot** | **NZP-IMR Ês/Iot** |
| **dBm / SCSSSB** | | | | | **dB** | **dB** |
| **SCSSSB = 120 kHz** | | | | **SCSSSB = 240 kHz** |
| **UE power class** | | | | **UE power class** |
| **1** | **2** | **3** | **4** | **1, 2, 3, 4** |
| Conditions | Rx Beam Peak | n257 | -122.3+Y1 | -107.8 | -106.1 | -121.8+Y4 | (Value for SCSSSB = 120 kHz) +3dB | ≥0 | ≥0 |
| n258 | -122.3+Y1 | -107.8 | -106.1 | -121.8+Y4 |
| n259 |  |  | -102.5 |  |
| n260 | -119.3+Y1 |  | -103.5 | -119.8+Y4 |
| n261 | -122.3+Y1 | -107.8 | -106.1 | -121.8+Y4 |
| Spherical coverage Note 1 | n257 | -114.3+Z1 | -96.8 | -95.2 | -112.8+Z4 | (Value for SCSSSB = 120 kHz) +3dB | ≥0 | ≥0 |
| n258 | -114.3+Z1 | -96.8 | -95.2 | -112.8+Z4 |
| n259 |  |  | -89.7 |  |
| n260 | -111.3+Z1 |  | -90.9 | -107.8+Z4 |
| n261 | -114.3+Z1 | -96.8 | -95.2 | -112.8+Z4 |
| NOTE 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  NOTE 2: Values specified at the Reference point to give minimum SSB Ês/Iot, with no applied noise.  NOTE 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and Spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19]. | | | | | | | | | |

*Editor’s notes for Table B.2.8.2.2-1 and B.2.8.2.2-2:*

*- The value of Y for power classes 1 and 4 is FFS, where Y1 and Y4 are the rough/fine beam gain differences in Rx beam peak direction for power classes 1 and 4 respectively*

*- The value of Z for power classes 1 and 4 is FFS, where Z1 and Z4 are the rough/fine beam gain differences in spherical coverage directions for power classes 1 and 4 respectively*

### B.2.8.3 Conditions for L1-SINR reporting with CSI-RS based CMR and dedicated IMR configured

#### B.2.8.3.1 L1-SINR reporting with CSI-RS based CMR and dedicated ZP-IMR configured

This clause defines the following conditions for NR L1-SINR measurement reporting and corresponding procedures performed based on CSI-RSs and ZP-IMRs: CSI-RS\_RP and CSI-RS Ês/Iot, applicable for a corresponding operating band.

The conditions defined in Table B.2.8.3.1-1 for FR1 NR cells.

The conditions defined in Table B.2.8.3.1-2 for FR2 NR cells.

Table B.2.8.3.1-1: Conditions for L1-SINR measurements with CSI-RS based CMR and ZP-IMR in FR1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **NR operating band groups Note1** | **Minimum CSI-RS\_RP** | | | **CSI-RS CMR Ês/Iot** |
| **dBm / SCSCSI-RS** | | | **dB** |
| **SCSCSI-RS = 15 kHz** | **SCSCSI-RS = 30 kHz** | **SCSCSI-RS = 60 kHz** |
| **Conditions** | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A, NR\_SDL\_FR1\_A | -124 | -121 | -118 | ≥ -3 |
| NR\_FDD\_FR1\_B | -123.5 | -120.5 | -117.5 |
| NR\_TDD\_FR1\_C | -123 | -120 | -117 |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | -122.5 | -119.5 | -116.5 |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | -122 | -119 | -116 |
| NR\_FDD\_FR1\_F | -121.5 | -118.5 | -115.5 |
| NR\_FDD\_FR1\_G | -121 | -118 | -115 |
| NR\_FDD\_FR1\_H | -120.5 | -117.5 | -114.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | | |

Table B.2.8.3.1-2: Conditions for L1-SINR measurements with CSI-RS based CMR and ZP-IMR in FR2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | **Angle of arrival** | **NR operating bands** | **Minimum CSI-RS\_RP Note 2, Note 3** | | | | | **CSI-RS CMR Ês/Iot** |
| **dBm / SCSCSI-RS** | | | | | **dB** |
| **SCSCSI-RS = 60 kHz** | | | | **SCSCSI-RS = 120 kHz** |
| **UE power class** | | | | **UE power class** |
| **1** | **2** | **3** | **4** | **1, 2, 3, 4** |
| Conditions | Rx Beam Peak | n257 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 | (Value for SCSCSI-RS = 60 kHz) +3dB | ≥-3 |
| n258 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 |
| n259 |  |  | -108.5 |  |
| n260 | -125.3+Y1 |  | -109.5 | -125.8+Y4 |
| n261 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 |
| Spherical coverage Note 1 | n257 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 | (Value for SCSCSI-RS = 60 kHz) +3dB | ≥-3 |
| n258 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 |
| n259 |  |  | -95.7 |  |
| n260 | -117.3+Z1 |  | -96.9 | -113.8+Z4 |
| n261 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 |
| NOTE 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  NOTE 2: Values specified at the Reference point to give minimum CSI-RS Ês/Iot, with no applied noise.  NOTE 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and Spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19]. | | | | | | | | |

#### B.2.8.3.2 L1-SINR reporting with CSI-RS based CMR and dedicated NZP-IMR configured

This clause defines the following conditions for NR L1-SINR measurement reporting and corresponding procedures performed based on CSI-RSs and NZP-IMRs: CSI-RS\_RP, CSI-RS Ês/Iot and NZP-IMR Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Tables B.2.8.3.2-1 for FR1 NR cells.The conditions are defined in Tables B.2.8.3.2-2 for FR2 NR cells.

Table B.2.8.3.2-1: Conditions for L1-SINR measurements with CSI-RS based CMR and NZP-IMR in FR1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | **NR operating band groups Note1** | **Minimum CSI-RS\_RP** | | | **CSI-RS CMR Ês/Iot** | **NZP-IMR Ês/Iot** |
| **dBm / SCSCSI-RS** | | | **dB** | **dB** |
| **SCSCSI-RS = 15 kHz** | **SCSCSI-RS = 30 kHz** | **SCSCSI-RS = 60 kHz** |
| **Conditions** | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A, NR\_SDL\_FR1\_A | -121 | -118 | -115 | ≥ 0 | ≥ 0 |
| NR\_FDD\_FR1\_B | -120.5 | -117.5 | -114.5 |
| NR\_TDD\_FR1\_C | -120 | -117 | -114 |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | -119.5 | -116.5 | -113.5 |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | -119 | -116 | -113 |
| NR\_FDD\_FR1\_F | -118.5 | -115.5 | -112.5 |
| NR\_FDD\_FR1\_G | -118 | -115 | -112 |
| NR\_FDD\_FR1\_H | -117.5 | -114.5 | -111.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | | | |

Table B.2.8.3.2-2: Conditions for L1-SINR measurements with CSI-RS based CMR and NZP-IMR in FR2

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Parameter** | **Angle of arrival** | **NR operating bands** | **Minimum CSI-RS\_RP Note 2, Note 3** | | | | | **CSI-RS CMR Ês/Iot** | **NZP-IMR Ês/Iot** |
| **dBm / SCSCSI-RS** | | | | | **dB** | **dB** |
| **SCSCSI-RS = 60 kHz** | | | | **SCSCSI-RS = 120 kHz** |
| **UE power class** | | | | **UE power class** |
| **1** | **2** | **3** | **4** | **1, 2, 3, 4** |
| Conditions | Rx Beam Peak | n257 | -125.3+Y1 | -110.8 | -109.1 | -124.8+Y4 | (Value for SCSCSI-RS = 60 kHz) +3dB | ≥0 | ≥0 |
| n258 | -125.3+Y1 | -110.8 | -109.1 | -124.8+Y4 |
| n259 |  |  | -105.5 |  |
| n260 | -122.3+Y1 |  | -106.5 | -122.8+Y4 |
| n261 | -125.3+Y1 | -110.8 | -109.1 | -124.8+Y4 |
| Spherical coverage Note 1 | n257 | -117.3+Z1 | -99.8 | -98.2 | -115.8+Z4 | (Value for SCSCSI-RS = 60 kHz) +3dB | ≥0 | ≥0 |
| n258 | -117.3+Z1 | -99.8 | -98.2 | -115.8+Z4 |
| n259 |  |  | -92.7 |  |
| n260 | -114.3+Z1 |  | -93.9 | -110.8+Z4 |
| n261 | -117.3+Z1 | -99.8 | -98.2 | -115.8+Z4 |
| NOTE 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  NOTE 2: Values specified at the Reference point to give minimum CSI-RS Ês/Iot, with no applied noise.  NOTE 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and Spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19]. | | | | | | | | | |

*Editor’s notes for Tables B.2.8.3.2-1 and B.2.8.3.2-2:*

*- The value of Y for power classes 1 and 4 is FFS, where Y1 and Y4 are the rough/fine beam gain differences in Rx beam peak direction for power classes 1 and 4 respectively*

*- The value of Z for power classes 1 and 4 is FFS, where Z1 and Z4 are the rough/fine*

## B.2.9 Conditions for NR intra-frequency measurements under CCA

This clause defines the following conditions for NR intra-frequency measurements unde CCA and corresponding procedures performed based on SSBs: SSB\_RP and SSB Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Table B.2.9-1 for NR cells under CCA.

Table B.2.9-1: Conditions for intra-frequency measurements under CCA

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | NR operating band groups Note1 | Minimum SSB\_RP | | SSB Ês/Iot |
| dBm / SCSSSB | | dB |
| SCSSSB = 15 kHz | SCSSSB = 30 kHz |
| Conditions | NR\_CCA\_FR1\_I | -123 | -120 | ≥ -6 |
| NR\_CCA\_FR1\_J | -122.5 | -119.5 |
| NOTE 1: NR operating band groups are as defined in clause 3.5.2. | | | | |

## B.2.10 Conditions for NR inter-frequency measurements under CCA

This clause defines the following conditions for NR inter-frequency measurements and corresponding procedures performed based on SSBs: SSB\_RP and SSB Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Table B.2.10-1 for NR cells under CCA.

Table B.2.10-1: Conditions for inter-frequency measurements under CCA

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | NR operating band groups Note1 | Minimum SSB\_RP | | SSB Ês/Iot |
| dBm / SCSSSB | | dB |
| SCSSSB = 15 kHz | SCSSSB = 30 kHz |
| Conditions | NR\_CCA\_FR1\_I | -121 | -118 | ≥ -4 |
| NR\_CCA\_FR1\_J | -120.5 | -117.5 |
| NOTE 1: NR operating band groups are as defined in clause 3.5.2. | | | | |

## B.2.11 Conditions for NR L1-RSRP reporting under CCA

### B.2.11.1 Conditions for SSB based L1-RSRP reporting

This clause defines the following conditions for NR L1-RSRP measurement reporting and corresponding procedures performed based on SSBs under CCA: SSB\_RP and SSB Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Table B.2.11.1-1 for NR cells under CCA.

Table B.2.11.1-1: Conditions for SSB based L1-RSRP measurements under CCA

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | NR operating band groups Note1 | Minimum SSB\_RP | | SSB Ês/Iot |
| dBm / SCSSSB | | dB |
| SCSSSB = 15 kHz | SCSSSB = 30 kHz |
| Conditions | NR\_CCA\_FR1\_I | -120 | -117 | ≥ -3 |
| NR\_CCA\_FR1\_J | -119.5 | -116.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | |

## B.2.12 Conditions for NR CSI-RS based intra-frequency measurements

This clause defines the following conditions for NR CSI-RS based intra-frequency measurements and corresponding procedures performed based on CSI-RS: CSI\_RP and CSI-RS Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Table B.2.12-1 for FR1 NR cells.

The conditions are defined in Table B.2.12-2 for FR2 NR cells.

Table B.2.12-1: Conditions for CSI-RS based intra-frequency measurements in FR1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | NR operating band groups Note1 | Minimum CSI\_RP | | | CSI-RS Ês/Iot |
| dBm / SCSCSI-RS | | | dB |
| SCSCSI-RS = 15 kHz | SCSCSI-RS = 30 kHz | SCSCSI-RS = 60 kHz |
| Conditions | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A, NR\_SDL\_FR1\_A | -127 | -124 | -121 | ≥ -6 |
| NR\_FDD\_FR1\_B | -126.5 | -123.5 | -120.5 |
| NR\_TDD\_FR1\_C | -126 | -123 | -120 |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | -125.5 | -122.5 | -119.5 |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | -125 | -122 | -119 |
| NR\_FDD\_FR1\_F | -124.5 | -121.5 | -118.5 |
| NR\_FDD\_FR1\_G | -124 | -121 | -118 |
| NR\_FDD\_FR1\_H | -123.5 | -120.5 | -117.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | | |

Table B.2.12-2: Conditions for CSI-RS based intra-frequency measurements in FR2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Angle of arrival | NR operating bands | Minimum CSI\_RP Note 2, Note 3 | | | | | CSI-RS Ês/Iot |
| dBm / SCSCSI-RS | | | | | dB |
| SCSCSI-RS = 120 kHz | | | | SCSCSI-RS = 60 kHz |
| UE power class | | | | UE power class |
| 1 | 2 | 3 | 4 | 1, 2, 3, 4 |
| Conditions | Rx Beam Peak | n257 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 | (Value for SCSCSI-RS = 120 kHz) - 3dB | ≥-6 |
| n258 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 |
| n259 |  |  | -108.5 |  |
| n260 | -125.3+Y1 |  | -109.5 | -125.8+Y4 |
| n261 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 |
| Spherical coverage Note 1 | n257 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 | (Value for SCSCSI-RS = 120 kHz) - 3dB | ≥-6 |
| n258 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 |
| n259 |  |  | -95.7 |  |
| n260 | -117.3+Z1 |  | -96.9 | -113.8+Z4 |
| n261 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 |
| Note 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  Note 2: Values specified at the Reference point to give minimum CSI-RS Ês/Iot, with no applied noise.  Note 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19]. | | | | | | | | |

*Editor’s notes for Table B.2.12-2:*

*- The value of Y for power classes 1 and 4 is FFS, where Y1 and Y4 are the rough/fine beam gain differences in Rx beam peak direction for power classes 1 and 4 respectively*

*- The value of Z for power classes 1 and 4 is FFS, where Z1 and Z4 are the rough/fine beam gain differences in spherical coverage directions for power classes 1 and 4 respectively*

## B.2.13 Conditions for NR CSI-RS based inter-frequency measurements

This clause defines the following conditions for NR CSI-RS based inter-frequency measurements and corresponding procedures performed based on CSI-RS: CSI\_RP and CSI-RS Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Table B.2.13-1 for FR1 NR cells.

The conditions are defined in Table B.2.13-2 for FR2 NR cells.

Table B.2.13-1: Conditions for CSI-RS based inter-frequency measurements in FR1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | NR operating band groups Note1 | Minimum CSI\_RP | | | CSI-RS Ês/Iot |
| dBm / SCSCSI-RS | | | dB |
| SCSCSI-RS = 15 kHz | SCSCSI-RS = 30 kHz | SCSCSI-RS = 60 kHz |
| Conditions | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A, NR\_SDL\_FR1\_A | -125 | -122 | -119 | ≥ -6 |
| NR\_FDD\_FR1\_B | -124.5 | -121.5 | -118.5 |
| NR\_TDD\_FR1\_C | -124 | -121 | -118 |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | -124.5 | -120.5 | -117.5 |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | -123 | -120 | -117 |
| NR\_FDD\_FR1\_F | -122.5 | -119.5 | -116.5 |
| NR\_FDD\_FR1\_G | -122 | -119 | -116 |
| NR\_FDD\_FR1\_H | -121.5 | -118.5 | -115.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2. | | | | | |

Table B.2.13-2: Conditions for CSI-RS based inter-frequency measurements in FR2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Angle of arrival | NR operating bands | Minimum CSI\_RP Note 2, Note 3 | | | | | CSI-RS Ês/Iot |
| dBm / SCSCSI-RS | | | | | dB |
| SCSCSI-RS = 120 kHz | | | | SCSCSI-RS = 60 kHz |
| UE power class | | | | UE power class |
| 1 | 2 | 3 | 4 | 1, 2, 3, 4 |
| Conditions | Rx Beam Peak | n257 | -126.3+Y1 | -111.8 | -110.1 | -125.8+Y4 | (Value for SCSCSI-RS = 120 kHz) - 3dB | ≥-4 |
| n258 | -126.3+Y1 | -111.8 | -110.1 | -125.8+Y4 |
| n259 |  |  | -106.5 |  |
| n260 | -123.3+Y1 |  | -107.5 | -123.8+Y4 |
| n261 | -126.3+Y1 | -111.8 | -110.1 | -125.8+Y4 |
| Spherical coverage Note 1 | n257 | -118.3+Z1 | -100.8 | -99.2 | -116.8+Z4 | (Value for SCSCSI-RS = 120 kHz) - 3dB | ≥-4 |
| n258 | -118.3+Z1 | -100.8 | -99.2 | -116.8+Z4 |
| n259 |  |  | -93.7 |  |
| n260 | -115.3+Z1 |  | -94.9 | -111.8+Z4 |
| n261 | -118.3+Z1 | -100.8 | -99.2 | -116.8+Z4 |
| NOTE 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  NOTE 2: Values specified at the Reference point to give minimum CSI-RS Ês/Iot, with no applied noise.  NOTE 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and Spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19]. | | | | | | | | |

*Editor’s notes for Table B.2.13-2:*

*- The value of Y for power classes 1 and 4 is FFS, where Y1 and Y4 are the rough/fine beam gain differences in Rx beam peak direction for power classes 1 and 4 respectively*

*- The value of Z for power classes 1 and 4 is FFS, where Z1, and Z4 are the rough/fine beam gain differences in spherical coverage directions for power classes 1 and 4 respectively.*

## B.2.14 Conditions for NR PRS-based measurements

This clause defines the following conditions for NR PRS-based measurements and corresponding procedures performed based on PRS: PRP and PRS Ês/Iot, applicable for a corresponding operating band.

The conditions are defined in Table B.2.14-1 for FR1 NR cells.

The conditions are defined in Table B.2.14-2 for FR2 NR cells.

Table B.2.14-1: Conditions for NR PRS-based measurements in FR1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | NR operating band groups Note1 | Minimum PRP1,2 | | | PRS Ês/Iot |
| dBm / SCSPRS | | | dB |
| SCSPRS = 15 kHz | SCSPRS = 30 kHz | SCSPRS = 60 kHz |
| Conditions | NR\_FDD\_FR1\_A, NR\_TDD\_FR1\_A, NR\_SDL\_FR1\_A | -127 | -124 | -121 | ≥ -6 Note2  ≥ -13 Note3  ≥ -3 Note4 |
| NR\_FDD\_FR1\_B | -126.5 | -123.5 | -120.5 |
| NR\_TDD\_FR1\_C | -126 | -123 | -120 |
| NR\_FDD\_FR1\_D, NR\_TDD\_FR1\_D | -125.5 | -122.5 | -119.5 |
| NR\_FDD\_FR1\_E, NR\_TDD\_FR1\_E | -125 | -122 | -119 |
| NR\_FDD\_FR1\_F | -124.5 | -121.5 | -118.5 |
| NR\_FDD\_FR1\_G | -124 | -121 | -118 |
| NR\_FDD\_FR1\_H | -123.5 | -120.5 | -117.5 |
| NOTE 1: NR operating band groups are defined in clause 3.5.2.  NOTE 2: PRS Ês/Iot for RSTD measurement reference cell PRS resource.  NOTE 3: PRS Ês/Iot for RSTD measurement neighbor cell PRS resource, PRS-RSRP measurement and UE Rx-Tx time difference measurement.  NOTE 4: PRS Ês/Iot for PRS-RSRP measurement and UE Rx-Tx time difference measurement. | | | | | |

Table B.2.14-2: Conditions for NR PRS-based measurements in FR2

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Parameter | Angle of arrival | NR operating bands | Minimum PRP1,2 Note 2, Note 3 | | | | | PRS Ês/Iot |
| dBm / SCSPRS | | | | | dB |
| SCSPRS = 120 kHz | | | | SCSPRS = 60 kHz |
| UE power class | | | | UE power class |
| 1 | 2 | 3 | 4 | 1, 2, 3, 4 |
| **Conditions** | Rx Beam Peak | n257 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 | (Value for SCSPRS = 120 kHz) - 3dB | ≥ -6 Note4  ≥ -13 Note5  ≥ -3 Note6 |
| n258 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 |
| n259 |  |  | -108.5 |  |
| n260 | -125.3+Y1 |  | -109.5 | -125.8+Y4 |
| n261 | -128.3+Y1 | -113.8 | -112.1 | -127.8+Y4 |
| Spherical coverage Note 1 | n257 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 | (Value for SCSPRS = 120 kHz) - 3dB | ≥ -6 Note4  ≥ -13 Note5  ≥ -3 Note6 |
| n258 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 |
| n259 |  |  | -95.7 |  |
| n260 | -117.3+Z1 |  | -96.9 | -113.8+Z4 |
| n261 | -120.3+Z1 | -102.8 | -101.2 | -118.8+Z4 |
| NOTE 1: Values based on EIS spherical coverage as defined in clause 7.3.4 of TS 38.101-2 [19]. Side condition applies for directions in which EIS spherical coverage requirement is met.  NOTE 2: Values specified at the Reference point to give minimum PRS Ês/Iot, with no applied noise.  NOTE 3: For UEs that support multiple FR2 bands, Rx Beam Peak values are increased by ∆MBP,n and spherical coverage values are increased by ∆MBS,n, the UE multi-band relaxation factor in dB specified in clause 6.2.1 of TS 38.101-2 [19].  NOTE 4: PRS Ês/Iot for RSTD measurement reference cell PRS resource.  NOTE 5: PRS Ês/Iot for RSTD measurement neighbor cell PRS resource, PRS-RSRP measurement and UE Rx-Tx time difference measurement.  NOTE 6: PRS Ês/Iot for PRS-RSRP measurement and UE Rx-Tx time difference measurement. | | | | | | | | |

*Editor’s notes for Table B.2.14-2:*

*- The value of Y for power classes 1 and 4 is FFS, where Y1 and Y4 are the rough/fine beam gain differences in Rx beam peak direction for power classes 1 and 4 respectively*

*- The value of Z for power classes 1 and 4 is FFS, where Z1 and Z4 are the rough/fine beam gain differences in spherical coverage directions for power classes 1 and 4 respectively*

# B.3 RRM Requirements Exceptions

## B.3.1 Introduction

Annex B.3 covers exceptions for side conditions based on receiver sensitivity for CA, DC, and SUL.

## B.3.2 Receiver sensitivity relaxation for CA

### B.3.2.1 Receiver sensitivity relaxation for UE supporting CA in FR1

For a UE supporting inter-band carrier aggregation configuration with uplink in NR band, if there is a relaxation of receiver sensitivity ΔRIB,c>0 dB as defined in clause 7.3A.3 of TS 38.101-1 [18], the relevant side conditions specifying received power levels (SSB\_RP and Io) shall be increased by the amount Δ=ΔRIB,c defined for the corresponding downlink NR bands.

For a UE supporting CA configuration in FR1, the requirement in this clause applies for both SC and CA operation.

### B.3.2.2 Receiver sensitivity relaxation for UE configured with CA in FR1

#### B.3.2.2.1 Inter-band carrier aggregation

For a UE configured with inter-band carrier aggregation with active uplink in NR band, if there is a relaxation of receiver sensitivity ΔRIB,c>0 dB as defined in clause 7.3A.3 of TS 38.101-1 [18], the relevant side conditions specifying received power levels (SSB\_RP and Io) shall be increased by the amount Δ=ΔRIB,c defined for the corresponding downlink NR bands.

If the relaxation Δ specified in this clause applies, then the relaxation specified in clause B.3.2.1 should not be applied.

#### B.3.2.2.2 Reference sensitivity exceptions due to UL harmonic interference for CA

In this clause, requirements exceptions are described for the UE configured with a band in FR1 when it is impacted by UL harmonic interference from another band in FR1 of the same CA configuration.

A relevant side condition (SSB\_RP and Io) in a requirement shall be increased by the amount Δ=L2-L1, where L1 is the reference sensitivity level specified in clause 7.3.2 of TS 38.101-1 [18], and L2 is the reference sensitivity level based on the requirements in clause 7.3A.4 of TS 38.101-1 [18], when the following conditions are fulfilled,

- corresponding downlink component carriers on different NR bands are configured with CA and active,

- the upling is configured in the NR low operating band and is active,

- the uplink configuration is as specified in clause 7.3A.4 of TS 38.101-1 [18], and

- the exception requirements specified in clause 7.3A.4 of TS 38.101-1 [18] apply.

If the relaxation Δ specified in this clause applies, then the relaxation specified in clause B.3.2.1 should not be applied.

#### B.3.2.2.3 Reference sensitivity exceptions due to intermodulation interference due to 2UL CA

In this clause, requirements exceptions are described for the UE with an inter-band carrier aggregation with uplink assigned to two NR bands.

A relevant side condition (SSB\_RP and Io) in a requirement shall be increased by the amount Δ=L2-L1, where L1 is the reference sensitivity level specified in clause 7.3.2 of TS 38.101-1 [18], and L2 is the reference sensitivity level based on the requirements in clause 7.3A.5 of TS 38.101-1 [18], when the following conditions are fulfilled,

- corresponding downlink component carriers on different bands are configured with CA and active,

- uplinks are assigned to two NR bands,

- the exception requirements specified in clause 7.3A.5 of TS 38.101-1 [18] apply.

If the relaxation Δ specified in this clause applies, then the relaxation specified in clause B.3.2.1 should not be applied.

### B.3.2.3 Receiver sensitivity relaxation for UE supporting CA in FR2

### B.3.2.4 Receiver sensitivity relaxation for UE configured with CA in FR2

#### B.3.2.4.1 Intra-band contiguous carrier aggregation

For a UE configured with intra-band contiguous carrier aggregation in NR band in FR2, if there is a relaxation of receiver sensitivity ΔRIB>0 dB as defined in clause 7.3A.2.1 of TS 38.101-2 [19] depending on the aggregated channel bandwidth, the relevant side conditions specifying received power levels (SSB\_RP and Io) shall be increased by the amount Δ=ΔRIB defined for the corresponding downlink NR bands.

#### B.3.2.4.2 Intra-band non-contiguous carrier aggregation

For a UE configured with intra-band non-contiguous carrier aggregation in NR band in FR2, if there is a relaxation of receiver sensitivity ΔRIB>0 dB as defined in clause 7.3A.2.1 of TS 38.101-2 [19] depending on the aggregated channel bandwidth, the relevant side conditions specifying received power levels (SSB\_RP and Io) shall be increased by the amount Δ=ΔRIB defined for the corresponding downlink NR bands.

## B.3.3 Receiver sensitivity relaxation for DC

### B.3.3.1 Receiver sensitivity relaxation for EN-DC

Editor’s note: TBD

### B.3.3.2 Receiver sensitivity relaxation for NE-DC

Editor’s note: TBD

## B.3.4 Receiver sensitivity relaxation for SUL

### B.3.4.1 Receiver sensitivity relaxation for UE supporting SUL in FR1

For a UE supporting a SUL configuration in FR1, if there is a relaxation of receiver sensitivity ΔRIB,c>0 dB as defined in clause 7.3C.3 of TS 38.101-1 [18], the relevant side conditions specifying received power levels (SSB\_RP and Io) shall be increased by the amount Δ=ΔRIB,c defined for the corresponding downlink NR bands.

For a UE supporting a SUL configuration in FR1, the requirement in this clause applies for both SC and SUL operation.

### B.3.4.2 Receiver sensitivity relaxation for UE configured with SUL in FR1

#### B.3.4.2.1 Reference sensitivity exceptions due to UL harmonic interference for SUL

In this clause, requirements exceptions are described for the UE with a band in FR1 when it is impacted by UL harmonic interference from another band in FR1 of the same SUL configuration.

A relevant side condition (SSB\_RP and Io) in a requirement shall be increased by the amount Δ=L2-L1, where L1 is the reference sensitivity level specified in clause 7.3.2 of TS 38.101-1 [18], and L2 is the reference sensitivity level based on the requirements in clause 7.3C.2 of TS 38.101-1 [18], when the following conditions are fulfilled,

- a downlink component carrier is configured in NR band and is active,

- the upling is configured in the NR low operating band and is active,

- the uplink configuration is as specified in clause 7.3C.2 of TS 38.101-1 [18], and

- the exception requirements specified in clause 7.3C.2 of TS 38.101-1 [18] apply.

If the relaxation Δ specified in this clause applies, then the relaxation specified in clause B.3.4.1 should not be applied.

# B.4 Conditions for V2X

## B.4.1 Test parameters for GNSS signals

This clause defines the reference signal power levels of generated salellites for a corresponding GNSS, which will be used in V2X test cases.

Table B.4.1-1: GNSS Referenece Signal Power Parameters

| System | Parameters | Unit | Value |
| --- | --- | --- | --- |
|  | Number of generated satellites per system | - | 6 |
| GPS(1) | Reference signal power level for all satellites | dBm | -128.5 |
| Galileo | Reference signal power level for all satellites | dBm | -127 |
| GLONASS | Reference signal power level for all satellites | dBm | -131 |
| BDS | Reference signal power level for all satellites | dBm | -133 |
| NOTE 1: "GPS" here means GPS L1 C/A, Modernized GPS, or both, dependent on UE capabilities.  NOTE 2: The DUT UE does not need to support all systems. The DUT UE shall support at least one system and will be test for the supported systems. | | | |

## B.4.2 Conditions for PSBCH-RSRP Accuracy Requirements

This clause defines the following conditions for PSBCH-RSRP measurement accuracy requirements applicable for a corresponding operating band.

The conditions are defined in Table B.4.2-1 for FR1.

Table B.4.2-1: Conditions for PSBCH-RSRP measurements in FR1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | NR V2X operating band groups Note1 | Minimum S-SSB\_RP | | | S-SSB Ês/Iot |
| dBm/SCSS-SSB | | | dB |
| SCSS-SSB = 15kHz | SCSS-SSB = 30kHz | SCSS-SSB = 60kHz |
| NR\_TDD\_FR1\_B | -126.5 | -123.5 | -120.5 | ≥ -6 |
| NR\_TDD\_FR1\_J | -122.5 | -119.5 | -116.5 |
| NOTE 1: NR V2X operating band groups are as defined in Section 3.5 for the corresponding NR operating bands. | | | | | |

## B.4.3 Conditions for Selection/Reselection to Intra-frequency SyncRef UE

This clause defines the S-SSB\_RP and S-SSB Ês/Iot applicable for a corresponding operating band.

The conditions for selection/reselection to intra-frequency SyncRef UE are defined in Table B.4.3-1 for FR1.

Table B.4.3-1: V2X synchronization measurements in FR1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | NR V2X operating band groups Note1 | Minimum S-SSB\_RP | | | S-SSB Ês/Iot |
| dBm/SCSS-SSB | | | dB |
| SCSS-SSB = 15kHz | SCSS-SSB = 30kHz | SCSS-SSB = 60kHz |
| NR\_TDD\_FR1\_B | -120.5 | -117.5 | -114.5 | ≥ 0 |
| NR\_TDD\_FR1\_J | -116.5 | -113.5 | -110.5 | ≥ 0 |
| NOTE 1: NR V2X operating band groups are as defined in Section 3.5 for the corresponding NR operating bands.  NOTE 2: The SyncRef UE transmission frequency shall be accurate to within ±5 PPM compared to the absolute frequency. | | | | | |

## B.4.4 Conditions for L1 SL-RSRP Accuracy Requirements

This clause defines the following condtions for L1 SL-RSRP measurement accuracy requirements applicable for a corresponding operating band.

The conditions are defined in Table B.4.4-1 for FR1.

Table B.4.4-1: Conditions for L1 SL-RSRP measurements in FR1

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Parameter | NR V2X operating band groups Note1 | Minimum L1 SL-RSRP | | | Ês/Iot |
| dBm/SCS | | | dB |
| SCS= 15kHz | SCS= 30kHz | SCS = 60kHz |
| NR\_TDD\_FR1\_B | -120.5 | -117.5 | -114.5 | ≥ 0 |
| NR\_TDD\_FR1\_J | -116.5 | -113.5 | -110.5 |
| NOTE 1: NR V2X operating band groups are as defined in Section 3.5 for the corresponding NR operating bands.  NOTE 2: The parameter Ês/Iot is the Ês/Iot of PSCCH-DMRS and/or PSSCH-DMRS.  NOTE 3: The SCS is for PSCCH and/or PSSCH. | | | | | |

Annex C (informative):  
Change history

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Change history** | | | | | | | |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
| 2017-05 | RAN4#83 | R4-1706324 |  |  |  | Specification skeleton | 0.0.1 |
| 2017-09 |  |  |  |  |  | Email approved | 0.1.0 |
| 2017-09 | RAN4-NR AH #3 | R4-1709413 |  |  |  | Capture TPs approved in the meeting | 0.2.0 |
| 2017-10 | RAN4#84-Bis | R4-1711985 |  |  |  | Capture TPs approved in the meeting | 0.3.0 |
| 2017-12 | RAN4#85 | R4-1714546 |  |  |  | Capture TPs approved in RAN4#85 | 0.4.0 |
| 2017-12 | RAN#78 | RP-172407 |  |  |  | v1.0.0 submitted for plenary approval | 1.0.0 |
| 2017-12 | RAN#78 |  |  |  |  | Approved by plenary – Rel-15 spec under change control | 15.0.0 |
| 2018-03 | RAN#79 | RP-180264 | 0032 |  | B | CR to TS38.133 | 15.1.0 |
| 2018-06 | RAN#80 | RP-181075 | 0037 |  | B | CR to TS 38.133: Implementation of endorsed draft CRs from RAN4 #86bis and RAN4 #87 | 15.2.0 |
| 2018-09 | RAN#81 | RP-181896 | 0043 |  | B | CR to TS 38.133: Implementation of endorsed draft CRs from RAN4-AH-1807 and RAN4 #88 | 15.3.0 |
| 2018-12 | RAN#82 | RP-182763 | 0057 | 3 | B | CR to TS 38.133: Implementation of endorsed draft CRs from RAN4-88bis and RAN4-89 | 15.4.0 |
| 2019-03 | RAN#83 | RP-190569 | 0064 | 1 | B | CR to TS 38.133: Implementation of endorsed draft CRs from RAN4#90 | 15.5.0 |
| 2019-06 | RAN#84 | RP-191240 | 0072 | 1 | F | CR to TS 38.133: Implementation of endorsed draft CRs from RAN4#90bis and RAN4#91 | 15.6.0 |
| 2019-06 | RAN#84 | RP-191248 | 0066 |  | B | Introduction of band n48 | 16.0.0 |
| 2019-06 | RAN#84 | RP-191242 | 0067 |  | B | Introduction of band n14 - CR to TS 38.133 | 16.0.0 |
| 2019-06 | RAN#84 | RP-191246 | 0068 |  | B | Introduction of band n30 - CR to TS 38.133 | 16.0.0 |
| 2019-06 | RAN#84 | RP-191244 | 0069 |  | B | introduce n18 into TS38.133 | 16.0.0 |
| 2019-06 | RAN#84 | RP-191250 | 0070 | 1 | B | n65 introduction to 38.133 | 16.0.0 |
| 2019-09 | RAN#85 | RP-192034 | 0077 |  | B | n29 introduction to 38.133 | 16.1.0 |
| 2019-09 | RAN#85 | RP-192022 | 0085 |  | A | CR to TS 38.133: Implementation of endorsed draft CRs from RAN4#92 (Rel-16)  - Mirrors changes in R4-1910356 for Rel-15 TS 38.133 | 16.1.0 |
| 2019-12 | RAN#86 | RP-192997 | 0093 |  | A | Specification of UE antenna gain range | 16.2.0 |
| 2019-12 | RAN#86 | RP-192992 | 0095 | 1 | A | Add RRM Test case setup for 1 AoA in Rx beam peak and 1 in non Rx beam peak | 16.2.0 |
| 2019-12 | RAN#86 | RP-192997 | 0097 |  | A | Update of Parameters, Test case A.7.7.1.1 FR2 Intra-frequency SS-RSRP accuracy | 16.2.0 |
| 2019-12 | RAN#86 | RP-192997 | 0099 |  | A | Update of Parameters, Test case A.5.7.1.1 FR2 Intra-frequency SS-RSRP accuracy | 16.2.0 |
| 2019-12 | RAN#86 | RP-192997 | 0101 |  | A | Update of Parameters, Test case A.7.7.1.2 FR2 Inter-frequency SS-RSRP accuracy | 16.2.0 |
| 2019-12 | RAN#86 | RP-192997 | 0103 |  | A | Update of Parameters, Test case A.5.7.1.2 FR2 Inter-frequency SS-RSRP accuracy | 16.2.0 |
| 2019-12 | RAN#86 | RP-192992 | 0105 |  | A | Correction to Random access test case in FR1 for PSCell in EN-DC | 16.2.0 |
| 2019-12 | RAN#86 | RP-193040 | 0107 |  | A | CR on handover 38.133 - R16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-192994 | 0112 | 1 | A | CR on the BWP switch test cases EN-DC FR1 (clause A.4.5.6) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192994 | 0113 | 1 | A | CR on the BWP switch test cases EN-DC FR2 (clause A.5.5.6) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192994 | 0114 | 1 | A | CR on the BWP switch test cases SA FR1 (clause A.6.5.6) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192994 | 0115 | 1 | A | CR on the BWP switch test cases SA FR2 (clause A.7.5.6) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193042 | 0117 |  | A | CR to TS38.133 on correction for BWP switching with SCS changing (Section 8.2.1.2.7, 8.2.2.2.5 and 8.6.2) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193040 | 0121 |  | A | CR on handover RRM requirement (clause 6.1.1.5) (R16) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192994 | 0123 |  | A | CR on test cases for EN-DC FR2 inter-frequency measurement (clause A.5.6.2) (R16) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192994 | 0127 | 1 | A | CR on test cases for Redirection from NR in FR2 to NR in FR2 (clause A.7.3.2.3) (R16) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192994 | 0129 | 1 | A | CR on test cases for FR2 handover (clause A.7.3.1) (R16) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193042 | 0131 |  | A | CR to 38.133 on TCI state switching (Section 8.10) (R16) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193009 | 0133 |  | F | CR on measurement gap applicability requirement for SRVCC | 16.2.0 |
| 2019-12 | RAN#86 | RP-192994 | 0137 |  | A | CR on TC with monitoring PDCCH not in first 3 OFDM symbols R16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-193021 | 0139 |  | F | CR to add n90 in the NR operating bands in FR1 (3.5.2) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193040 | 0148 | 1 | A | CR on inter-RAT measurement in TS38.133 (clause 9.4.2, 9.4.3) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193042 | 0151 |  | A | CR to 38.133 R16 Add the missing units to DRX cycle values (Cat A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193005 | 0152 | 1 | B | CR for Abbreviations for cross link interference (clause 3) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193005 | 0153 | 1 | B | CR for cross link interference measurements (clause 9) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193041 | 0156 |  | A | CR on NR MTTD and MRTD definition for R16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-193042 | 0157 | 1 | A | Editorial correction for SCell activation and deactivation delay | 16.2.0 |
| 2019-12 | RAN#86 | RP-193039 | 0159 |  | A | CR for SCell activation delay in FR2 | 16.2.0 |
| 2019-12 | RAN#86 | RP-193040 | 0161 |  | A | CR for scheduling restriction due to L1-RSRP measurement | 16.2.0 |
| 2019-12 | RAN#86 | RP-192993 | 0167 |  | A | CR on SSB setting for new gap and SMTC setting (Section A.3.10) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192995 | 0169 |  | A | CR on TS38.133 for EN-DC SS-SINR tests with PSCell in FR1 (Section A.4.7.3) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192995 | 0171 |  | A | CR on TS38.133 for SA SS-SINR tests with PCell in FR1 (Section A.6.7.3) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192993 | 0185 |  | A | CR on cell-reselection test cases for NR SA FR2 R16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-192995 | 0187 |  | A | endorsed CR on intra-frequency measurement and reporting for EN-DC FR2 R16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-192996 | 0189 |  | A | endorsed CR on intra-frequency measurement and reporting for NR SA FR2 R16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-192996 | 0191 |  | A | endorsed CR on RLM scheduling restrictions for EN-DC FR2 R16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-192996 | 0193 |  | A | endorsed CR on RLM scheduling restrictions for NR SA FR2 R16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-192992 | 0201 |  | A | Correction to PRACH configuration index in test cases\_r16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-193009 | 0205 |  | B | CR on UMTS inter-RAT measurement requirements | 16.2.0 |
| 2019-12 | RAN#86 | RP-193009 | 0206 |  | B | CR on CSSF for SRVCC | 16.2.0 |
| 2019-12 | RAN#86 | RP-193009 | 0207 |  | B | CR on measurement capability for NR- UMTS for SRVCC | 16.2.0 |
| 2019-12 | RAN#86 | RP-193039 | 0209 |  | A | Correction on the TCI state switching (clause 8.10) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193039 | 0219 |  | A | CR for 38133 editorial for clause 8.1,8.8,8.9,8.10,8.11 in Rel-16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-193039 | 0220 |  | A | CR for 38133 editorial for clause 8.5 in Rel-16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-193039 | 0221 |  | A | CR for 38133 editorial for clause 9.3 in Rel-16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-193040 | 0222 |  | A | CR on 38133 for removal the duplicated reference in clause 2 | 16.2.0 |
| 2019-12 | RAN#86 | RP-193040 | 0223 |  | A | CR on 38133 for clause 11 in Rel-16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-192994 | 0225 | 1 | A | CR on TC of UE transmit timing (A.4.4.1.1, A.5.4.1.1, A.6.4.1.1, A.7.4.1.1) Rel-16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-193042 | 0230 |  | A | Update on requirements related to inter-band EN-DC and NE-DC synchronous requirements | 16.2.0 |
| 2019-12 | RAN#86 | RP-193008 | 0231 | 1 | B | MRTD and MTTD requirements for asynchronous NR-NR DC | 16.2.0 |
| 2019-12 | RAN#86 | RP-192995 | 0233 | 1 | A | Editorial corrections to measurement accuracy tests | 16.2.0 |
| 2019-12 | RAN#86 | RP-192992 | 0235 |  | A | Corrections to SS-RSRQ and SS-SINR OTA tests with SA | 16.2.0 |
| 2019-12 | RAN#86 | RP-192992 | 0237 | 1 | A | Corrections to SS-RSRQ and SS-SINR OTA tests with EN-DC | 16.2.0 |
| 2019-12 | RAN#86 | RP-193042 | 0239 | 1 | A | Editorial corrections to clause 9.2 | 16.2.0 |
| 2019-12 | RAN#86 | RP-193009 | 0240 |  | B | Introduction of handover requirements for SRVCC in clause 6.1.2 | 16.2.0 |
| 2019-12 | RAN#86 | RP-192992 | 0242 |  | A | Corrections to band applicability of measurement accuracy tests | 16.2.0 |
| 2019-12 | RAN#86 | RP-192996 | 0244 |  | A | Introduction of bandwidth limited OCNG for OTA testing | 16.2.0 |
| 2019-12 | RAN#86 | RP-192992 | 0248 |  | A | Corrections to test cases for SA FR2 inter-frequency measurement (clause A.7.6.2) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193041 | 0250 |  | A | CR to 38.133 NR reporting criteria | 16.2.0 |
| 2019-12 | RAN#86 | RP-192993 | 0264 |  | A | CR on correcting CSI-RS based BFD and link recovery tests for EN-DC in FR1 | 16.2.0 |
| 2019-12 | RAN#86 | RP-192993 | 0266 |  | A | CR on correcting CSI-RS based BFD and link recovery tests for SA in FR1 | 16.2.0 |
| 2019-12 | RAN#86 | RP-192993 | 0268 |  | A | CR on correcting CSI-RS based BFD and link recovery tests for EN-DC in FR2 | 16.2.0 |
| 2019-12 | RAN#86 | RP-192993 | 0270 |  | A | CR on correcting CSI-RS based BFD and link recovery tests for SA in FR2 | 16.2.0 |
| 2019-12 | RAN#86 | RP-193004 | 0274 | 1 | B | CR on introducing L1-SINR mapping in TS38.133 R16 | 16.2.0 |
| 2019-12 | RAN#86 | RP-193040 | 0276 |  | A | CR on delay uncertainty of RRC Release with redirection requirements in TS 38.133 (Cat A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193040 | 0278 |  | A | CR on known condition of PSCell addition requirement in NE-DC (Cat A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193041 | 0280 |  | A | CR on known condition of PSCell addition requirement in NR DC (Cat A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193041 | 0282 |  | A | CR on RRC Re-establishment requirements in TS 38.133 (Cat A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193041 | 0284 |  | A | CR on scope of interruption requirements of EN-DC in TS 38.133 (Cat A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193041 | 0286 |  | A | CR on scope of MTTD requirements in TS 38.133 (Cat A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192994 | 0288 |  | A | CR on SSB-based RLM test case for EN-DC FR1 (Cat A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192994 | 0290 |  | A | CR on SSB-based RLM test case for NR SA FR1 (Cat A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193042 | 0292 |  | A | Editorial CR on clause 8.2 (Cat A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193041 | 0296 |  | A | CR on NR inter-frequency identification (Cat A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193041 | 0298 |  | A | CR on NR intra-frequency measurements (Cat A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193039 | 0312 |  | A | Correction on CSSF within measurement gap (clause 9.1.5.2) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193041 | 0314 |  | A | CR on RLM scheduling restriction (clause 8.1.7) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193041 | 0316 |  | A | CR on SCell activation requirements (clause 8.3.2) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193042 | 0318 |  | A | CR to add QCL definition (clause 3.6) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192993 | 0320 |  | A | CR on power offset in TRS RMC (A.3.17) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192995 | 0322 |  | A | CR to introduce new PDCCH RMC (A.3.1.3.2) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192997 | 0324 |  | A | Maintenance CR for measurement accuracy (clause 10.1) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192996 | 0326 |  | A | FR1 CSI-RS RLM test OOS/IS non-DRX for EN-DC (clause A.4.5.1) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192996 | 0328 |  | A | FR2 CSI-RS RLM test OOS/IS non-DRX for EN-DC (clause A.4.5.1) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192996 | 0330 |  | A | FR1 CSI-RS RLM test OOS/IS non-DRX for SA (clause A.6.5.1) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192996 | 0332 |  | A | FR2 CSI-RS RLM test OOS/IS non-DRX for SA (clause A.6.5.1) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192997 | 0334 |  | A | L1-RSRP delay test FR1 EN-DC (clause A.4.6.3) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192997 | 0336 |  | A | L1-RSRP delay test FR2 EN-DC (clause A.5.6.3) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192997 | 0338 |  | A | L1-RSRP delay test FR1 SA (clause A.6.6.4) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192997 | 0340 |  | A | L1-RSRP delay test FR2 SA (clause A.7.6.3) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192996 | 0344 |  | A | L1-RSRP accuracy test FR2 EN-DC (clause A.5.7.4) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192996 | 0346 |  | A | L1-RSRP accuracy test FR2 SA (clause A.7.7.4) (cat-A) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193005 | 0347 | 1 | B | CR to introduce CLI measurement accuracy requirements | 16.2.0 |
| 2019-12 | RAN#86 | RP-193008 | 0348 |  | B | CR on measurement gap interruption due to async NR-DC | 16.2.0 |
| 2019-12 | RAN#86 | RP-193008 | 0349 |  | B | CR on Interruptions at PSCell/SCell addition/release in async NR-DC | 16.2.0 |
| 2019-12 | RAN#86 | RP-193008 | 0350 |  | B | Introducing euCA related interruption requirements for EN-DC in 38.133 (clause 8.2.1) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193008 | 0351 |  | B | Introducing euCA related interruption requirements for NE-DC in 38.133 (clause 8.2.3) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193008 | 0352 | 1 | B | CR on direct SCell activation delay | 16.2.0 |
| 2019-12 | RAN#86 | RP-193039 | 0358 |  | A | CR 38.133 (8.3.2) Amendment of requirements depending on T\_SMTC\_Max | 16.2.0 |
| 2019-12 | RAN#86 | RP-193039 | 0360 |  | A | CR 38.133 (8.3.3) Correction of SCell deactivation delay | 16.2.0 |
| 2019-12 | RAN#86 | RP-192992 | 0362 | 1 | A | CR 38.133 (A.7.5.7) TCs for PSCell addition and release delay | 16.2.0 |
| 2019-12 | RAN#86 | RP-192995 | 0366 |  | A | CR to TS 38.133: New common clause with OTA related definitions for FR2 testing (Rel-16) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192995 | 0368 |  | A | CR to TS 38.133: Configuration of NR FR1 cell in NR FR1-FR2 tests (Rel-16) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192995 | 0370 |  | A | CR to TS 38.133: Clarificatins to Antenna Configurations for FR2 (Rel-16) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192995 | 0372 |  | A | CR to TS 38.133: Corrections to CORESET RMCs (Rel-16) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192995 | 0374 |  | A | CR to TS 38.133: Corrections to FR2 test configurations (Rel-16) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193042 | 0376 | 1 | A | Editorial updates (clause 9.4) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193039 | 0378 |  | A | Correction in interruption requirements (clause 8.2) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193042 | 0380 | 1 | A | Editorial updates (Annex B) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193040 | 0382 |  | A | CR on 38133 for MRTD and MTTD in intra-band EN-DC | 16.2.0 |
| 2019-12 | RAN#86 | RP-193039 | 0390 |  | A | Correction to the starting point of the DRX cycle length interval | 16.2.0 |
| 2019-12 | RAN#86 | RP-192992 | 0391 |  | A | CR for MAC-CE based TCI State switch for ENDC (Section A.5.5.8) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192993 | 0392 |  | A | CR for MAC-CE based TCI State switch for NR SA (Section A.7.5.7) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192993 | 0393 |  | A | CR for RRC based TCI State switch for NR SA (Section A.7.5.7) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192993 | 0394 |  | A | CR for RRC based TCI State switch for EN-DC (Section A.5.5.8) | 16.2.0 |
| 2019-12 | RAN#86 | RP-192992 | 0395 |  | A | CR for FR1 handover test cases (Section A.6.3.1.1, A.6.3.1.2, A.6.3.1.3) | 16.2.0 |
| 2019-12 | RAN#86 | RP-193041 | 0396 |  | A | CR on MTTD for intra-band EN-DC | 16.2.0 |
| 2019-12 | RAN#86 | RP-193040 | 0398 |  | A | CR on corrections on NR intra frequency measurement reporting requirements (Section 9.2.4) | 16.2.0 |
| 2020-03 | RAN#87 | RP-200401 | 0405 | 1 | A | [CR] handover requirements 38.133 R16 (Cat A) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0412 | 1 | A | [CR] SCell activation delay 38.133 R16 (Cat A) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0417 |  | A | Corrections to RRM Test case A.7.1.1.2 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0419 |  | A | Correction to Active UL BWP for SA intra-frequency event triggered reporting with per-UE gaps | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0421 |  | A | Correction to FR1-E-UTRA Inter-RAT cell re-selection test cases | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0423 |  | A | Removal of Time offset between PCell and PSCell in SA RRM Test cases | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0425 |  | A | Correction to SRS periodicity and Offset for UL transit timing with DRx config | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0427 |  | A | Update of Test Requirements, FR2 Intra-frequency SS-RSRP accuracy Test cases | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0429 |  | A | Update of Test requirements, FR2 Inter-frequency SS-RSRP accuracy Test cases | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0439 | 1 | A | CR on test cases for SA FR2 inter-frequency measurement R16 (section A.7.6.2) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0441 |  | A | Editorial corrections for 38.133 Core Part R16 (Cat A) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0445 | 1 | A | Editorial corrections for 38.133 Perf Part R16 (Cat A) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0454 |  | A | Editorial correction for active TCI state switching delay | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0462 | 1 | A | Corrections for BWP switch delay R16 (Cat A) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0464 |  | A | CR for reference correction on L1-RSRP measurement period (section 9.5.3) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0466 |  | A | CR for measurement restriction in FR2 across CCs (section 8.1.2.3, 8.1.3.3, 8.5.2.3, 8.5.3.3, 8.5.5.3, 8.5.6.3, 9.5.5.1, 9.5.5.2) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0468 |  | A | CR for SSB based candidate beam detection (section 8.5.5.2) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0488 |  | A | CR to TS 38.133: Corrections to FR1-FR2 event triggered test cases Annex A.5 (Rel-16) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0490 |  | A | CR to TS 38.133: Corrections to FR1-FR2 event triggered test cases Annex A.7 (Rel-16) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0492 |  | A | CR to TS 38.133: Clarifications to AoA setup and AoA cell assignement Annex A.5 (Rel-16) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0494 |  | A | CR to TS 38.133: Clarifications to AoA setup Annex A.8 (Rel-16) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0496 |  | A | CR to TS 38.133: Addition of TC A.4.7.2.2 (Rel-16) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0500 |  | A | Editorial correction of EN-DC FR1 L1-RSRP measurement for beam reporting | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0502 |  | A | Editorial correction of NR SA FR1 L1-RSRP measurement for beam reporting | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0509 |  | A | CR on removing one-shot timing adjustment requirements (Cat A) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0516 |  | A | Correction to BWP switching delay\_r16 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0518 |  | A | Correction to inter-RAT measurement on LTE serving carrrier\_r16 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0520 |  | A | Correction to configurations for TRS\_r16 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0522 |  | A | Correction to FR1 SA inter-RAT measurement TCs\_r16  NOTE The CR is not implemented because the corresponding Cat F CR is not implementable. | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0524 |  | A | Correction to interruption TCs\_r16  NOTE The CR is not implemented because the corresponding Cat F CR is not implementable. | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0528 |  | A | Correction to RF channels configuration\_r16 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0530 |  | A | Correction to RRC release with redirection TCs\_r16 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0532 |  | A | Correction to UL reconfiguration delay TCs\_r16 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0538 |  | A | CR on SSB RLM test cases EN-DC R16 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0540 |  | A | CR on SSB RLM test cases SA R16 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0542 |  | A | CR on cell reselection test cases for FR2 SA R16 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0544 |  | A | OCNG pattern for TDM-ed SSB R16 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0564 |  | A | NR editorial correction | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0580 |  | A | CR 38.133 (8.11) Corrections to PSCell change delay requirements | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0587 |  | A | PRACH configurations in FR1 SSB based RLM tests | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0589 |  | A | PRACH configurations in FR1 SSB based BFR tests | 16.3.0 |
| 2020-03 | RAN#87 | RP-200375 | 0437 | 1 | B | CR for Conditional PSCell addition/change RRM requirement | 16.3.0 |
| 2020-03 | RAN#87 | RP-200381 | 0440 |  | B | n26 introduction to 38.133 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200374 | 0452 | 1 | B | CR on interruption requirements for NR V2X | 16.3.0 |
| 2020-03 | RAN#87 | RP-200372 | 0455 |  | B | CR on RRM requirement for maximum MIMO layer adaptation | 16.3.0 |
| 2020-03 | RAN#87 | RP-200389 | 0460 | 1 | F | introduce n18 into TS38.133 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200374 | 0473 | 1 | B | CR of NR V2X RRM(introduction & reliability of GNSS signal) | 16.3.0 |
| 2020-03 | RAN#87 | RP-200374 | 0476 | 2 | B | CR on NR V2X initiation SLSS 38.133 -R16 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0479 |  | F | CR to 38.133 NR reporting criteria | 16.3.0 |
| 2020-03 | RAN#87 | RP-200382 | 0486 |  | B | Introduction of n53 into 38.133 | 16.3.0 |
| 2020-03 | RAN#87 | RP-200371 | 0498 |  | B | Updates to SA NR interruption requirements for NR-U | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0510 |  | F | CR on inter-band EN-DC and NE-DC synchronous requirements | 16.3.0 |
| 2020-03 | RAN#87 | RP-200375 | 0511 | 1 | B | CR on DAPS handover requirements | 16.3.0 |
| 2020-03 | RAN#87 | RP-200374 | 0512 |  | B | CR on introducing UE sidelink timing requirements for NR V2X | 16.3.0 |
| 2020-03 | RAN#87 | RP-200370 | 0545 | 1 | F | CR on CLI measurement requirements | 16.3.0 |
| 2020-03 | RAN#87 | RP-200370 | 0546 | 1 | F | CR on CLI measurement accuracy requirements | 16.3.0 |
| 2020-03 | RAN#87 | RP-200406 | 0547 |  | B | CR on Interruptions at SCell activation/deactivation in async NR-DC | 16.3.0 |
| 2020-03 | RAN#87 | RP-200406 | 0548 | 1 | F | CR on direct SCell activation delay | 16.3.0 |
| 2020-03 | RAN#87 | RP-200376 | 0551 | 1 | F | Correction on handover requirements for SRVCC | 16.3.0 |
| 2020-03 | RAN#87 | RP-200371 | 0558 | 1 | B | CR to 38.133 to address NR-U inter-RAT measurements | 16.3.0 |
| 2020-03 | RAN#87 | RP-200401 | 0578 |  | F | CR 38.133 (8.3.2) Correction of error in Rel-16 SCell activation | 16.3.0 |
| 2020-03 | RAN#87 | RP-200370 | 0582 |  | B | CR for conditions for cross link interference measurements (section B) | 16.3.0 |
| 2020-06 | RAN#88 | RP-200987 | 0595 |  | A | [CR] Editorial corrections for 38.133 R16 Core Part - Cat A | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0596 |  | F | [CR] Editorial corrections for 38.133 R16 Core Part - Cat F | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0598 |  | A | [CR] Editorial corrections for 38.133 R16 Perf Part - Cat A | 16.4.0 |
| 2020-06 | RAN#88 | RP-200966 | 0599 |  | F | [CR] Delay requirements for direct SCell activation | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0600 |  | F | [CR] Editorial corrections for 38.133 R16 Perf Part - Cat F | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0602 |  | A | CR to Intra-frequency handover from FR1 to FR1 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0606 |  | A | CR to A.6.1.2.1 Cell reselection to higher priority E-UTRAN | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0608 |  | A | Correction to General test parameters in A.6.6.1.2 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0620 |  | A | CR on CSSF correction for R16 TS38.133 | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0625 | 1 | B | CR on multiple SCell activation deactivation requirement for R16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0626 | 1 | B | CR on multiple SCell activation interruption requirement for R16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0629 |  | A | CR on Active TCI State Switching requirements - Rel16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-201055 | 0632 | 2 | F | Rapportuer CR for TS38.133 | 16.4.0 |
| 2020-06 | RAN#88 | RP-201048 | 0635 | 2 | B | CR on minimum requirement at transition period for UE power saving | 16.4.0 |
| 2020-06 | RAN#88 | RP-200958 | 0636 | 1 | F | CR on interruption requirements for NR V2X | 16.4.0 |
| 2020-06 | RAN#88 | RP-200975 | 0641 | 1 | B | CR on cell identification requirements for NR HST | 16.4.0 |
| 2020-06 | RAN#88 | RP-201044 | 0642 | 2 | B | CR on PRS-RSRP measurement report mapping | 16.4.0 |
| 2020-06 | RAN#88 | RP-201044 | 0645 | 1 | B | CR on SRS RSRP measurement report mapping | 16.4.0 |
| 2020-06 | RAN#88 | RP-200973 | 0646 | 2 | B | CR to TS38.133 on introduction of L1-SINR Measurement Requirement (Section 3.3 and 9) | 16.4.0 |
| 2020-06 | RAN#88 | RP-200973 | 0648 | 1 | B | CR to TS38.133 on introduction of SCell BFRQ Procedure (Section 8.5) | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0651 |  | A | Add UE Beam assumption for RRM Test cases in A.7.3, A.7.4, A.7.7 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0653 |  | A | Add UE Beam assumption for RRM Test cases in A.5.3, A.5.4, A.5.7 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0655 |  | A | Update of FR2 RLM Test cases with 2 Angles of Arrival | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0657 |  | F | Update of Tx Timing Test cases | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0659 |  | A | Update of FR2 RLM and BFD-LR Test cases | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0661 |  | A | Update of FR2 SS-RSRP Test cases | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0663 | 1 | A | CR on TCI state switch | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0665 |  | A | CR on PDSCH RMC | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0668 | 1 | B | CR on active spatial relation switch | 16.4.0 |
| 2020-06 | RAN#88 | RP-200976 | 0671 | 1 | B | CR to TS 38.133: CHO RRM requirement | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0672 | 1 | B | CR to TS 38.133: RRM requirement for UE-specific CBW change delay | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0673 |  | B | CR to TS 38.133: RRM requirement for interruption due to UE-specific CBW change | 16.4.0 |
| 2020-06 | RAN#88 | RP-200969 | 0678 | 1 | B | CR to TS 38.133: introducing 2-step RACH core requirements | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0680 |  | A | Correction of CFRA RSRP threshold | 16.4.0 |
| 2020-06 | RAN#88 | RP-200970 | 0682 |  | B | CR for event triggered reporting tests for CLI | 16.4.0 |
| 2020-06 | RAN#88 | RP-200958 | 0685 |  | B | CR of NR V2X abbreviations | 16.4.0 |
| 2020-06 | RAN#88 | RP-200958 | 0686 | 1 | B | CR of interruption for switching between NR SL and LTE SL | 16.4.0 |
| 2020-06 | RAN#88 | RP-200958 | 0687 | 2 | F | CR of NR V2X editorial correction | 16.4.0 |
| 2020-06 | RAN#88 | RP-200971 | 0689 | 1 | B | 38.133 CR on cell re-selection requirements for Rel-16 NR HST | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0690 | 1 | B | CR on introducing inter-frequency measurements without measurement gap (9.1.5, 9.1.6, 9.3.1, 9.3.4, 9.3.5) | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0696 |  | A | CR on SMTC period for beam management requirements | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0698 |  | A | CR for CSI-RS based L1-RSRP measurement period | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0700 |  | A | CR on RACH test cases with CSI-RS resource R16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0704 |  | A | CR on TS38.133 for modification of the layer 3 and layer 1 measurement sharing factor when both SSB and RSSI symbol to be measured are considered | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0706 |  | A | CR on TS38.133 for modification on number of cells and number of SSB to be measured for FR2 intra-frequency measurement | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0708 |  | A | [CR] TCI state switch delay 38.133 R16 Cat A | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0709 | 1 | F | LTE CGI measurements with autonomous gaps for 38.133 | 16.4.0 |
| 2020-06 | RAN#88 | RP-201042 | 0710 | 3 | B | Updates to general section for NR-U in 38.133 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200976 | 0711 | 1 | F | Correction to DAPS HO requirements in 38.133 | 16.4.0 |
| 2020-06 | RAN#88 | RP-201049 | 0712 | 2 | F | SRVCC test case for event triggered reporting | 16.4.0 |
| 2020-06 | RAN#88 | RP-201049 | 0713 |  | F | Gap applicability errors corrected for SRVCC | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0715 |  | A | Correction of NR SA FR2 inter-freq measurement reporting | 16.4.0 |
| 2020-06 | RAN#88 | RP-200968 | 0717 |  | F | NTA\_offset setting for NR coexistence with NB-IoT | 16.4.0 |
| 2020-06 | RAN#88 | RP-201042 | 0718 | 2 | B | CR to TS 38.133: adding NR-U Handover. | 16.4.0 |
| 2020-06 | RAN#88 | RP-200975 | 0723 | 1 | B | CR on cell re-selection requirement for NR-EUTRAN measurement in TS38.133 | 16.4.0 |
| 2020-06 | RAN#88 | RP-201042 | 0725 | 1 | B | CR: Introduction of L1-RSRP measurement requirements with CCA | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0727 |  | A | CR: Correction of L1-RSRP measurement period | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0729 |  | A | CR to TS 38.133: Correction to CSI-RS configurations in A.3.14 (Rel-16) | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0731 |  | A | CR to TS 38.133: Correction to SMTC configuration in measurement accuracy tests (Rel-16) | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0733 |  | A | CR to TS 38.133: Clarifications to AoA setup Annex A.5 (Rel-16) | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0735 |  | A | CR to TS 38.133: Clarifications to AoA setup Annex A.7 (Rel-16) | 16.4.0 |
| 2020-06 | RAN#88 | RP-201048 | 0736 |  | F | CR for maximum MIMO layer adaptation | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0738 | 1 | F | Applicability of QCL | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0741 | 1 | B | CR to 38.133 on SRS carrier switching interruption requirements | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0742 | 1 | B | CR to 38.133 on impact to measurement requirements due to LTE SRS carrier switching | 16.4.0 |
| 2020-06 | RAN#88 | RP-200969 | 0743 | 1 | B | CR to 38.133 on UE transmit timing requirements for 2-step RACH | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0744 | 1 | F | CR to 38.133 on intra frequency measurements without gaps | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0748 |  | A | CR on Psharingfactor\_r16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0750 |  | A | CR on E-UTRAN Serving Cell Parameters\_r16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0752 |  | A | CR on Modified parameters for BFD TCs with 4Rx antenna\_r16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0754 |  | A | CR on BFD TCs\_r16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0756 |  | A | CR on UL carrier RRC reconfiguration Delay TC\_r16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0758 |  | A | CR to FR1 SCell activation delay test cases\_r16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0760 |  | A | CR to inter-frequency measurement TCs\_r16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0762 | 1 | F | CR to interruption TCs\_r16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0763 | 1 | F | CR to FR1 SA inter-RAT measurement TCs\_r16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0764 | 1 | B | CR on introduction of RRM requirements for BWP switching delay on multiple CCs | 16.4.0 |
| 2020-06 | RAN#88 | RP-201042 | 0767 | 1 | B | CR on introduction of Active TCI state switching delay with CCA Requirements for NR-U | 16.4.0 |
| 2020-06 | RAN#88 | RP-201042 | 0768 | 2 | B | CR on introduction of reporting criteria for NR-U | 16.4.0 |
| 2020-06 | RAN#88 | RP-201042 | 0770 | 1 | B | CR on introduction of RRC\_INACTIVE state moblity requirements for NR-U | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0775 |  | A | CR on interruption due to Acitve BWP switch (Cat A) | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0779 |  | A | CR on UE transmit timing (Cat A) | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0781 |  | A | Editoral CR on TS 38.133 Rel-16 (Cat A) | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0783 |  | A | CR on RRC Connection Release with Redirection (Cat A) | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0785 |  | A | CR on RRC Re-establishment test cases (Cat A) | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0787 |  | A | CR on Timing advance test cases for EN-DC (Cat A) | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0789 |  | A | CR on Timing test cases for NR SA (Cat A) | 16.4.0 |
| 2020-06 | RAN#88 | RP-201045 | 0792 | 1 | B | CR on DL interruption Tx switching between two uplink carriers | 16.4.0 |
| 2020-06 | RAN#88 | RP-200975 | 0796 | 1 | B | Cell identification in connected mode for NR-EUTRAN measurement in HST | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0799 |  | A | Correction onTCI state switching R16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0801 |  | A | Accuracy of carrier aggregation in NR R16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-201049 | 0802 | 1 | B | Test case for NR to UTRA FDD Inter-RAT handover | 16.4.0 |
| 2020-06 | RAN#88 | RP-200976 | 0804 |  | F | CR on conditional PSCell change requirements | 16.4.0 |
| 2020-06 | RAN#88 | RP-200973 | 0806 | 1 | B | CR on SCell BFD and CBD requirements | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0808 | 1 | B | CR on interruption requirements for FR2 inter-band CA | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0809 |  | B | CR on scaling factor CSSFoutside\_gap for FR2 inter-band CA | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0810 | 1 | B | CR on scheduling availability requirements for FR2 inter-band CA | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0813 |  | A | CR 38.133 (8.10.5) Corrections to RRC-based TCI state change | 16.4.0 |
| 2020-06 | RAN#88 | RP-200966 | 0814 |  | F | CR 38.133 (8.3.4-5) Corrections to Direct SCell activation | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0816 |  | A | CR 38.133 (8.3.2) Corrections to SCell Activation delay requirements | 16.4.0 |
| 2020-06 | RAN#88 | RP-200966 | 0817 | 1 | F | CR 38.133 (8.3.4-5) Addition of interruption windows for Direct SCell Activation | 16.4.0 |
| 2020-06 | RAN#88 | RP-200978 | 0818 | 1 | B | CR to 38.133 for Introduction of band n259 | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0819 | 1 | B | CR on SCell activation requirements for FR2 inter-band CA | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0821 |  | A | CR on FR2 measurement requirements outside gaps R16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0823 |  | A | CR on inter-RAT RSTD requirements for NE-DC in 38.133 R16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0825 |  | A | CR on SCell activation requirements R16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0827 |  | A | CR on SSB based L1-RSRP measurement R16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0829 |  | A | CR on L1-RSRP delay tests for FR2 R16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0831 |  | A | CR to L1-RSRP accuracy TC for FR2 EN-DC R16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0833 |  | A | CR to L1-RSRP accuracy TC for FR2 SA R16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0835 |  | A | CR to TCI state switch TC R16 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200970 | 0836 |  | F | CR on CLI measurement requirements | 16.4.0 |
| 2020-06 | RAN#88 | RP-200970 | 0837 | 1 | F | CR on CLI measurement performance requirements | 16.4.0 |
| 2020-06 | RAN#88 | RP-200970 | 0838 |  | B | CR on test cases for SRS-RSRP measurement accuracy in FR1 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200970 | 0839 | 1 | B | CR on test cases for SRS-RSRP measurement accuracy in FR2 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200970 | 0840 |  | B | CR on test cases for CLI-RSSI measurement accuracy in FR1 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200970 | 0841 | 1 | B | CR on test cases for CLI-RSSI measurement accuracy in FR2 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200966 | 0843 |  | B | CR on interruption requirements for direct SCell activation for 38.133 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200966 | 0844 | 1 | B | CR on delay requirements for SCell dormancy | 16.4.0 |
| 2020-06 | RAN#88 | RP-200966 | 0845 | 1 | B | CR on interruption requirements for SCell dormancy | 16.4.0 |
| 2020-06 | RAN#88 | RP-201044 | 0847 | 1 | B | CR for gNB Rx-Tx time difference and UL-RTOA report mapping | 16.4.0 |
| 2020-06 | RAN#88 | RP-201044 | 0849 | 1 | B | CR for AoA/ZoA report mapping | 16.4.0 |
| 2020-06 | RAN#88 | RP-201048 | 0854 | 2 | B | Measurement requirements for UEs under power saving mode | 16.4.0 |
| 2020-06 | RAN#88 | RP-201044 | 0857 | 1 | B | NR E-CID reporting criteria requirements | 16.4.0 |
| 2020-06 | RAN#88 | RP-201044 | 0858 | 1 | B | NR E-CID measurement requirements | 16.4.0 |
| 2020-06 | RAN#88 | RP-201044 | 0862 | 1 | B | Positioning measurement accuracy requirements structure in section 10 | 16.4.0 |
| 2020-06 | RAN#88 | RP-201044 | 0863 | 2 | B | Reporting criteria for NR RSTD | 16.4.0 |
| 2020-06 | RAN#88 | RP-200987 | 0867 |  | A | Clarification on RLM | 16.4.0 |
| 2020-06 | RAN#88 | RP-201042 | 0869 |  | B | BWP switching interruption requirement due to consistent UL failure in 38.133 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200969 | 0871 | 1 | B | Applicability of 2-step RA and 4-step RA in RRM requirements in 38.133 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200975 | 0874 | 1 | B | CR to TS 38.133: NR HST beam management requirements | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0875 | 1 | B | CR on 38133 interruption requirements for BWP switching on multiple CCs | 16.4.0 |
| 2020-06 | RAN#88 | RP-200966 | 0879 | 1 | B | Big CR Introduction of UE requirement for MR-DC early measurement reporting in 38.133 | 16.4.0 |
| 2020-06 | RAN#88 | RP-201042 | 0885 |  | B | RRC release with redirection requirements in NR-U in 38.133 | 16.4.0 |
| 2020-06 | RAN#88 | RP-200988 | 0886 | 1 | A | Rapportuer CR for TS38.133 | 16.4.0 |
| 2020-06 | RAN#88 | RP-201047 | 0887 |  | B | CR: mandatory gap pattern | 16.4.0 |
| 2020-09 | RAN#88 | RP-201512 | 0889 |  | A | CR to Redirection from NR in FR1 to E-UTRAN | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0891 |  | A | CR to timing advance adjustment accuracy in FR1 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0895 |  | A | CR to SS-RSRQ Intra-Frequency and Inter-frequency FR1 measurement accuracy | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0897 |  | A | Update to FR2 240kHz SSB Configurations | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0899 |  | A | Update of FR2 Random Access Test cases | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0901 |  | A | Update to FR2 event-triggered reporting RRM Test cases in A.5.6 and A.7.6 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0903 |  | A | Update to FR2 SS-RSRP RRM Test cases in A.5.7 and A.7.7 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0905 |  | A | CR to EN-DC timing advance adjustment accuracy in FR2 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0907 |  | A | CR to configuration of CSI-RS for tracking | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0909 |  | A | Update of RRC-based Active BWP Switch test cases | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0911 |  | A | Update to FR2 Annex B RRM side conditions | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0913 |  | A | Add UE Beam assumption for RRM Test cases in A.5.5 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201496 | 0914 | 1 | B | Introduction of the P-MPR 2 bits report mapping in 38.133 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0922 |  | A | Add UE Beam assumption for RRM Test cases in A.7.5 Rel-16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201489 | 0924 | 1 | F | Maintenance CR for 2-step RA | 16.5.0 |
| 2020-09 | RAN#88 | RP-201491 | 0925 | 2 | B | CR to TS 38.133: PRS RSTD requirements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201498 | 0928 | 1 | F | CR on capabilities for support of event triggering and reporting criteria | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0931 |  | F | CR for TS38.133 Rel-16, Corrction for SCell activation delay requirement | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0933 |  | A | CR for TS38.133 Rel-16, Correction for RRM core requirements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0935 |  | A | CR for TS38.133 Rel-16, Correction for test cases of BWP switching | 16.5.0 |
| 2020-09 | RAN#88 | RP-201498 | 0937 | 1 | B | CR on CSI-RS based intra-frequency measurement requirement (Introduction, requirement applicability and number of cell and beams) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201500 | 0939 | 1 | B | CR on uplink spatial relation switch delay (section 8.12) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 0940 | 1 | B | Introduction of SCell activation/deactivation delay requirements for SCells operating with CCA | 16.5.0 |
| 2020-09 | RAN#88 | RP-201491 | 0941 | 2 | B | Revision of CSSF within gap to include NR positioning measurements with gap sharing | 16.5.0 |
| 2020-09 | RAN#88 | RP-201491 | 0942 | 3 | B | Introduction of new MG patterns for NR positioning | 16.5.0 |
| 2020-09 | RAN#88 | RP-201491 | 0943 | 2 | B | Introduction of UE Rx-Tx time difference measurement requirements for NR positioning | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0946 |  | A | CR on TS38.133 for handover test cases | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0948 |  | A | CR on TS38.133 for introducing the PDSCH RMC configuration in cell re-selection test cases | 16.5.0 |
| 2020-09 | RAN#88 | RP-201493 | 0950 | 2 | F | CR on TS38.133 for dual active protocol stack handover (Section 6.1.3) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201507 | 0952 |  | F | CR on TS38.133 for intra-frequency measurement definition (Section 9.2.1) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0956 |  | A | CR on FR2 measurement capability for R16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 0957 |  | B | CR on UE measurement capability of NR-U for R16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201507 | 0958 | 1 | B | CR on RRM requirement based on dual DRX for FR1+FR2 CA | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 0959 |  | F | Update NR Frequency Band Groups to include Band n30 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 0960 |  | F | Update NR Frequency Band Groups to include Band n14 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 0961 |  | F | CR for Table number mismatch for CLI performance tests | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0963 |  | A | CR on Inter-RAT RSTD measurements (section 9.4.4) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0965 |  | A | CR on active BWP switch in R16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201500 | 0968 | 1 | F | CR on multiple SCells activation (section 8.3.7) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201496 | 0969 | 1 | F | CR on MRTD and MTTD for FR2 inter-band CA | 16.5.0 |
| 2020-09 | RAN#88 | RP-201498 | 0970 | 1 | B | CR on MRTD for FR2 inter-band CA | 16.5.0 |
| 2020-09 | RAN#88 | RP-201498 | 0971 | 1 | B | 38.133 CR on UE measurement capability on the number of frequency layers to be monitored for CSI-RS measurement | 16.5.0 |
| 2020-09 | RAN#88 | RP-201497 | 0972 |  | F | 38.133 CR on cell re-selection requirements for Rel-16 NR HST | 16.5.0 |
| 2020-09 | RAN#88 | RP-201492 | 0973 | 1 | F | CR of missed requirements based on the agreed CRs in RAN4#95-e | 16.5.0 |
| 2020-09 | RAN#88 | RP-201492 | 0974 | 1 | F | CR of interruption requirements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201500 | 0976 | 1 | F | CR on definition of inter-frequency measurements without measurement gap (9.3.1) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201500 | 0984 |  | F | CR on BWP switch on multiple CCs | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0986 |  | A | CR for SCell activation delay in FR2 in R16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 0988 |  | A | CR on TCI state switch delay in R16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 0991 | 1 | B | CR for timing requirement for NR-U | 16.5.0 |
| 2020-09 | RAN#88 | RP-201488 | 0992 | 1 | B | CR for introduction of pathloss reference signal switching delay | 16.5.0 |
| 2020-09 | RAN#88 | RP-201488 | 0993 | 1 | F | CR for L1-SINR requirement | 16.5.0 |
| 2020-09 | RAN#88 | RP-201498 | 0996 | 2 | B | CR on introduction, applicability and capability for CSI-RS inter-frequency measurement requirements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201500 | 0999 | 1 | B | Impact of CGI reading on L1 and L3 measurement | 16.5.0 |
| 2020-09 | RAN#88 | RP-201498 | 1003 | 1 | B | 38.133 CR on introduction of CSI-RS based measurement | 16.5.0 |
| 2020-09 | RAN#88 | RP-201488 | 1006 |  | F | Correction of L1-SINR reporting requirements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 1007 | 2 | B | CR: Beam management requirements with CCA | 16.5.0 |
| 2020-09 | RAN#88 | RP-201507 | 1008 |  | F | [CR] Corrections to DAPS Handover | 16.5.0 |
| 2020-09 | RAN#88 | RP-201500 | 1010 | 2 | F | CR for FR2 inter-band CA requirements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 1011 | 1 | D | CR to TS 38.133 - Handover requirements in NR-U | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 1012 | 2 | B | CR to TS 38.133 to address NR-U inter-frequency measurements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1015 | 1 | F | CR 38.133 (8.3.2-3) Corrections to SCell activation delay requirements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201494 | 1016 | 1 | B | CR 38.133 (8.3.9-8.3.11) Direct SCell activation delay for multiple downlink SCells | 16.5.0 |
| 2020-09 | RAN#88 | RP-201494 | 1017 | 2 | F | CR 38.133 SCell dormancy switching of multiple SCells | 16.5.0 |
| 2020-09 | RAN#88 | RP-201494 | 1018 |  | B | CR on delay requirements for SCell dormancy | 16.5.0 |
| 2020-09 | RAN#88 | RP-201498 | 1020 | 1 | B | CR on inter-frequency CSI-RS L3 measurement requirements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1023 |  | A | Clarification of SNR values in RLM Test cases | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1025 |  | A | CR to TS 38.133: Corrections to CSI-RS configurations in A.3.14 (Rel-16) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1027 |  | A | CR to TS 38.133: Corrections to event triggered test cases (Rel-16) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1029 |  | A | CR to TS 38.133: Corrections to inter-RAT test cases (Rel-16) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1031 |  | A | CR to TS 38.133: Corrections to AoA setup information in some test cases (Rel-16) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1033 |  | A | CR on maintaining handover tests in Rel-16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201500 | 1039 | 1 | F | CR on maintaining measurement restriction requirements for NR CA | 16.5.0 |
| 2020-09 | RAN#88 | RP-201500 | 1041 | 3 | F | CR on BWP switching delay on mulitple CCs | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 1042 | 2 | F | CR on active TCI state switching for NR-U | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 1043 | 2 | B | CR on introduction of intra-frequency measurements requirements for NR-U | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 1044 | 1 | B | CR on introduction of Active BWP switching delay requirements for NR-U | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 1045 | 1 | B | CR on introduction of RRC\_IDLE state moblity requirements for NR-U | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 1046 | 1 | B | Discussion on RRC re-establishment for NR-U | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1048 |  | A | CR on reporting criteria for EN-DC in 38.133 R15 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1050 |  | A | CR on test cases for Active TCI state switch delay R15 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1052 |  | A | Addition of new default configurations for RMC scheduling\_r16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1054 |  | A | Correction to beam failure detection and link recovery test cases\_r16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1056 |  | A | Correction to BWP switching delay test cases\_r16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1058 |  | A | Correction to FR1 intra-frequency measurement with gap test cases\_r16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1060 |  | A | Correction to inter-RAT HO test cases\_r16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201498 | 1064 | 2 | B | CR on CSI-RS based intra-frequency measurement requirements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201500 | 1066 | 1 | F | Correction on the interruption requirements due to SRS carrier switching | 16.5.0 |
| 2020-09 | RAN#88 | RP-201500 | 1067 | 1 | F | CSSF for inter-frequency measurement without gap in FR2 inter-band CA sceneario | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1070 |  | A | CR on correction to CSSF within gap R16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1072 |  | A | CR on SCell activation requirements R16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1075 |  | A | CR on UL BWP configuration for RRM test cases R16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1077 |  | A | CR to add UE beam assumption for TC in A.5.6 R16 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 1078 |  | F | CR on reporting criteria for CLI | 16.5.0 |
| 2020-09 | RAN#88 | RP-201494 | 1080 | 1 | B | CR on direct SCell activation | 16.5.0 |
| 2020-09 | RAN#88 | RP-201494 | 1081 | 2 | F | CR on requirements for SCell dormancy | 16.5.0 |
| 2020-09 | RAN#88 | RP-201491 | 1082 | 1 | B | CR for general applicability of PRS measurement requirements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201491 | 1083 | 2 | B | CR for measurement requirements for PRS-RSRP | 16.5.0 |
| 2020-09 | RAN#88 | RP-201491 | 1085 | 2 | B | CR to add CSI-RS related reporting criteria for ECID | 16.5.0 |
| 2020-09 | RAN#88 | RP-201490 | 1088 | 2 | F | Correction CR to Rel-16 UE power saving requirements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 1090 |  | F | Correction to RACH delay in RRC release requirements in NR-U in 38.133 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1097 |  | A | CR to 38.133 correction to RRC based BWP switch delay requirements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1099 |  | A | CR to 38.133 correction to interruption requirements for per-FR gap in FR2 | 16.5.0 |
| 2020-09 | RAN#88 | RP-201500 | 1100 |  | B | CR to 38.133 on CGI reading of NR cell | 16.5.0 |
| 2020-09 | RAN#88 | RP-201497 | 1101 |  | F | CR to TS 38.133: Corrections to Table 9.4.3.3-2 in subclause 9.4.3.3 (Requirements when DRX is used) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201506 | 1102 | 2 | B | Introduction of RLM requirements for NR-U | 16.5.0 |
| 2020-09 | RAN#88 | RP-201491 | 1103 | 2 | B | Measurement report mapping and additional path reporting for UE Rx-Tx | 16.5.0 |
| 2020-09 | RAN#88 | RP-201491 | 1104 | 2 | B | Measurement report mapping and additional path reporting for RSTD | 16.5.0 |
| 2020-09 | RAN#88 | RP-201491 | 1106 | 1 | F | Reporting criteria for NR positioning measurements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201491 | 1107 |  | F | General introduction of NR positioning measurements | 16.5.0 |
| 2020-09 | RAN#88 | RP-201498 | 1108 | 1 | B | CR on scheduling restriction for CSI-RS based intra-frequency measurement | 16.5.0 |
| 2020-09 | RAN#88 | RP-201507 | 1111 |  | F | [CR] Replacing x in references with correct numbers (Core R16 Cat F) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1113 |  | A | [CR] Replacing x in references with correct numbers (Core R16 Cat A) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1114 |  | A | [CR] Replacing x in references with correct numbers (Perf R16 Cat A) | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1116 |  | A | Fine/rough beam assumption for idle mode and measurement procedure test case | 16.5.0 |
| 2020-09 | RAN#88 | RP-201512 | 1117 |  | A | CR on BWP switching delay requirements R16 | 16.5.0 |
| 2020-12 | RAN#90 | RP-202433 | 1108 | 4 | B | CR on scheduling restriction for CSI-RS based intra-frequency measurement | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1119 |  | A | RB allocation and Noc level in RLM Test cases | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1121 |  | A | Update FR2 event-triggered reporting Test cases in A.5.6, A.7.6 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1123 |  | A | 240kHz SSB SCS Configuration for FR2 SS-RSRP Test cases | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1125 |  | A | Correct UE beam assumption for Test Cases in A.5.6 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1127 |  | A | Aggregation level of CORESET for RMC scheduling | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1129 |  | A | Claify FR1 NSA SS-SINR measurement TCs | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1131 |  | A | FR1 Inter-frequency Event triggered Reporting tests in DRX | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1133 |  | A | E-UTRAN | 16.6.0 |
| 2020-12 | RAN#90 | RP-202419 | 1138 |  | F | CR for DAPS HO test applicability | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1139 |  | F | Maintenance CR on SA inter-frequency event triggered reporting tests for FR1 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202433 | 1140 | 1 | F | CR on CSSF with both CSI-RS and SSB | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1146 |  | A | CR on CSI-RS BW condition for BFD/CBD R16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1148 |  | A | CR on AP-CSI-RS based L1-RSRP measurement R16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202427 | 1152 | 1 | F | CR of NR V2X operating band group | 16.6.0 |
| 2020-12 | RAN#90 | RP-202436 | 1155 | 1 | F | CR on TS38.133 for dual active protocol stack handover | 16.6.0 |
| 2020-12 | RAN#90 | RP-202430 | 1156 | 2 | F | CR on TS38.133 interruption time for CA with non-aligned frame boundaries | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1158 |  | F | CR on TS38.133 for inter-frequency measurement requirement without gap | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1160 |  | A | CR on TS38.133 for cell activation and deactivation test case | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1162 |  | A | CR on TS38.133 for cell reselection test case | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1164 |  | A | CR on TS38.133 for active BWP switch test cases | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1165 |  | F | CR on TS38.133 for E-UTRAN | 16.6.0 |
| 2020-12 | RAN#90 | RP-202509 | 1166 |  | F | CR on TS38.133 for SCell activation and deactivation delay test cases | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1168 |  | A | CR for TS38.133 Rel-16, Correction for RRM core and test cases | 16.6.0 |
| 2020-12 | RAN#90 | RP-202433 | 1171 | 1 | F | CR on abbreviations about CSI-RS based measurement in 38.133. | 16.6.0 |
| 2020-12 | RAN#90 | RP-202442 | 1184 |  | F | CR to TS 38.133: Add information on the inter-band EN-DC and UL CA configurations with no DL interruption | 16.6.0 |
| 2020-12 | RAN#90 | RP-202433 | 1186 | 1 | F | CR on R16 CSI-RS based L3 measurements | 16.6.0 |
| 2020-12 | RAN#90 | RP-202419 | 1187 | 2 | B | Intra-band Inter-frequency sync DAPS handover test in SA for FR1 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202427 | 1191 | 1 | F | CR: Interruption requirement for NR V2X synchronization source chang | 16.6.0 |
| 2020-12 | RAN#90 | RP-202432 | 1193 |  | F | Fine/rough beam assumption for CLI performance test cases | 16.6.0 |
| 2020-12 | RAN#90 | RP-202435 | 1194 | 1 | F | 38.133 CR on CSSFintra for measurement period for intra-frequency measurements in connected mode for Rel-16 NR HST | 16.6.0 |
| 2020-12 | RAN#90 | RP-202486 | 1196 |  | A | CR on carrier frequency range of PCell/PSCell for the maximum number of RLM-RS resources | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1209 |  | A | Correction on beamFailureInstanceMaxCount for test cases of availability restriction during FR2 BFR in R16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1212 | 1 | F | Correction on unknown SCell activation in FR2. | 16.6.0 |
| 2020-12 | RAN#90 | RP-202415 | 1213 | 1 | B | Big CR on 2-step RA type RRM performance requirements | 16.6.0 |
| 2020-12 | RAN#90 | RP-202431 | 1214 | 1 | F | CR Maintenance 2-step RACH RRM requirements | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1216 |  | A | Correction of RRM tests | 16.6.0 |
| 2020-12 | RAN#90 | RP-202435 | 1217 | 1 | F | CR on IDLE state cell re-selection requirements for HST in 38.133 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1225 |  | A | Correction to types of requirements in annex A | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1227 |  | A | Corrections to frequency range in interfrequency measurement procedures tests | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1230 |  | A | Correction on TBD values in FR1+FR2 interfrequency RSRP accuracy tests | 16.6.0 |
| 2020-12 | RAN#90 | RP-202486 | 1232 |  | A | Addition of symbol definitions | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1236 |  | A | Square bracket removal in 38.133 section A.1 to A.5 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1238 |  | A | Square bracket removal in 38.133 section A.6 to A.8 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202419 | 1240 | 1 | B | Conditional handover test cases for NR | 16.6.0 |
| 2020-12 | RAN#90 | RP-202414 | 1241 |  | B | Updates to general section for NR-U in 38.133 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202486 | 1250 |  | A | CR on MO merge | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1252 | 1 | F | CR to TS 38.133 on DCI based BWP switch requirements for cross carrier scheduling | 16.6.0 |
| 2020-12 | RAN#90 | RP-202441 | 1254 | 1 | B | CR on PRS-RSRP report mapping | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1259 |  | A | Correction to CSI-RS RMC configuration R16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1261 |  | A | Correction to cell reselection test cases R16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1263 |  | A | Correction to inter-RAT handover test cases R16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1265 |  | A | Correction to NR measurement under LTE SA test cases R16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1267 |  | A | Correction to inter-RAT SFTD measurement test cases R16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1271 |  | A | CR on maintaining BFD/CBD measurements test cases in TS38.133 R16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1273 |  | F | CR on maintaining L1-RSRP measurements test cases R16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202446 | 1275 | 1 | F | Correction CR to Rel-16 UE power saving requirements | 16.6.0 |
| 2020-12 | RAN#90 | RP-202442 | 1276 |  | F | Correction on DL interruption on Tx Switching between two uplink carriers | 16.6.0 |
| 2020-12 | RAN#90 | RP-202433 | 1277 | 1 | F | CR on CSI-RS based intra-frequency measurement requirements | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1281 |  | F | Correction on RRC based spatial relation switch delay | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1282 |  | F | Correction on SA inter-RAT measurement FR1 test case | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1283 | 1 | F | CR on BWP switching delay on mulitple CCs | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1284 | 1 | F | CR on interruption due to active BWP switching on mulitple CCs | 16.6.0 |
| 2020-12 | RAN#90 | RP-202414 | 1288 | 1 | F | CR on TCI state switching requirements for NR-U | 16.6.0 |
| 2020-12 | RAN#90 | RP-202414 | 1291 |  | F | CR on intra-frequency measurement requirements for NR-U | 16.6.0 |
| 2020-12 | RAN#90 | RP-202486 | 1296 |  | A | CR on RRC-based BWP switch requirements\_R16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1298 |  | A | CR on RRC-based active TCI state switch test case Rel-16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202425 | 1299 |  | F | Update NR Frequency Band Groups to include Band n48 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202439 | 1300 |  | F | Update NR Frequency Band Groups to include Band n65 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202446 | 1305 |  | F | CR to 38.133: Correction to relaxed measurement requirements | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1306 | 1 | F | CR to 38.133: Correction to relaxed measurement requirements | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1307 | 1 | F | CR to 38.133: Correction to SRS carrier based switching requirements | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1308 | 1 | F | CR to 38.133: Correction to mandatory gap pattern | 16.6.0 |
| 2020-12 | RAN#90 | RP-202509 | 1309 |  | F | [CR] NR Perf Maintenance R16 Cat F | 16.6.0 |
| 2020-12 | RAN#90 | RP-202486 | 1311 |  | A | [CR] Specify RRC processing delay in TCI state switching delay (Cat A) | 16.6.0 |
| 2020-12 | RAN#90 | RP-202486 | 1317 |  | A | CR on SCell activation requirements R16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1319 |  | A | CR on FR2 unkown SCell activation test cases R16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1321 |  | A | CR on BWP in L1-RSRP delay and accuracy test cases R16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202430 | 1322 | 1 | F | CR on BWP switching and SCell dormancy | 16.6.0 |
| 2020-12 | RAN#90 | RP-202441 | 1324 | 1 | F | CR to update PRS-RSRP measurement requirements | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1328 | 1 | F | CR on CGI reading requirements 38.133 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202509 | 1330 |  | F | [CR] Specify RRC processing delay in TCI state switching delay for R16 NR-U | 16.6.0 |
| 2020-12 | RAN#90 | RP-202442 | 1331 |  | F | Correction of CR0972 implementation | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1333 |  | F | CR: Correction of CFRA test in FR2 SA | 16.6.0 |
| 2020-12 | RAN#90 | RP-202434 | 1334 | 1 | F | CR: Clarification of L1-SINR reporting with CSI-RS based CMR and dedicated IMR configured | 16.6.0 |
| 2020-12 | RAN#90 | RP-202486 | 1336 |  | A | Introducing reference to the source of the Lmax and NRLM. | 16.6.0 |
| 2020-12 | RAN#90 | RP-202430 | 1338 | 2 | F | CR on UE requirement for MR-DC early measurement reporting in 38.133 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1340 |  | F | CR on measurement restrictions for FR2 inter-band CA | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1342 |  | A | CR to TS 38.133: Corrections to inter-RAT FR1 test cases (Rel-16) | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1344 |  | A | CR to TS 38.133: Corrections to inter-RAT FR2 test cases (Rel-16) | 16.6.0 |
| 2020-12 | RAN#90 | RP-202436 | 1346 |  | F | CR 38.133 Corrections to Conditional PSCell Change delay requirement | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1347 |  | F | CR 38.133 Removal of brackets for Multiple SCell activation | 16.6.0 |
| 2020-12 | RAN#90 | RP-202430 | 1348 | 1 | F | CR 38.133 Removal of brackets for SCell Dormancy and Direct SCell Activation | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1350 |  | A | CR 38.133 Correction to test case for TCI state switching (Rel-16) | 16.6.0 |
| 2020-12 | RAN#90 | RP-202418 | 1358 | 1 | F | gNB timing positioning measurement report mapping update for k | 16.6.0 |
| 2020-12 | RAN#90 | RP-202446 | 1360 | 1 | F | Corrections to UE power saving requirements | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1364 |  | A | Removal of annex B.2.6 on one shot timing adjustment in 38.133 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1366 |  | F | Correction to NR FR1 DL active BWP switch of Cell with non-DRX in SA (A.6.5.6.2.1) | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1367 | 1 | F | Correction to RRC based non-simultaneous multiple CC BWP | 16.6.0 |
| 2020-12 | RAN#90 | RP-202414 | 1369 |  | F | Requirements for known cell in RRC re-establishment with CCA | 16.6.0 |
| 2020-12 | RAN#90 | RP-202435 | 1370 |  | F | CR to TS 38.133: Corrections to Tables 9.5.4.1-1 and 9.5.4.2-1. | 16.6.0 |
| 2020-12 | RAN#90 | RP-202486 | 1372 | 1 | A | CR to 38.133 on Active BWP switch and Active TCI State Switching requirements - Rel16 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202441 | 1375 | 2 | F | UE positioning measurements: RSTD | 16.6.0 |
| 2020-12 | RAN#90 | RP-202414 | 1384 | 1 | F | Terminology updates for NR-U | 16.6.0 |
| 2020-12 | RAN#90 | RP-202414 | 1387 |  | F | Clause numbering correction | 16.6.0 |
| 2020-12 | RAN#90 | RP-202414 | 1390 | 1 | F | Measurement requirements for NR-U | 16.6.0 |
| 2020-12 | RAN#90 | RP-202444 | 1391 |  | F | Correction in NR SRS carrier-based switching requirements | 16.6.0 |
| 2020-12 | RAN#90 | RP-202419 | 1393 | 1 | B | Introduction of intra-frequency sync and async DAPS HO test cases in FR1 | 16.6.0 |
| 2020-12 | RAN#90 | RP-202430 | 1400 | 1 | F | CR to Multi-SCell activation for FR1 intra-band contiguous CA | 16.6.0 |
| 2020-12 | RAN#90 | RP-202430 | 1401 |  | F | CR to Staring point of an Interruption window at Direct SCell activation | 16.6.0 |
| 2020-12 | RAN#90 | RP-202414 | 1403 | 1 | F | Interruption windows and applicability of Scell activation/deactivation requirements for SCells operating with CCA | 16.6.0 |
| 2020-12 | RAN#90 | RP-202419 | 1406 |  | B | CR on inter-band DAPS handover tests | 16.6.0 |
| 2020-12 | RAN#90 | RP-202414 | 1407 |  | F | Correction to timing requirements in NR-U | 16.6.0 |
| 2020-12 | RAN#90 | RP-202417 | 1409 |  | B | Big CR: Introduction of Rel-16 NR UE Power Saving RRM Performance requirements (TS 38.133) | 16.6.0 |
| 2020-12 | RAN#90 | RP-202421 | 1410 |  | B | Big CR: Introduction of Rel-16 NR FR1 RF WI RRM performance requirements | 16.6.0 |
| 2020-12 | RAN#90 | RP-202422 | 1411 |  | B | Big CR: NR HST RRM performance requirements | 16.6.0 |
| 2020-12 | RAN#90 | RP-202487 | 1413 |  | A | [CR] NR Perf Maintenance R16 Cat A | 16.6.0 |
| 2021-03 | RAN#91 | RP-210116 | 1417 |  | A | [CR] RRM test case maintenance R16 Cat A | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1423 |  | A | Update FR2 Reference channels and OCNG for FR2 RRM Test cases | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1426 |  | F | CR to FR1 SA SS-SINR measurement TCs | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1429 |  | A | CR on E-UTRA carrier for EN-DC event triggered reporting tests | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1432 |  | A | Add missing FR2 Test case setups and Beam assumptions | 16.7.0 |
| 2021-03 | RAN#91 | RP-210091 | 1436 |  | F | [CR] Core maintenance for 38.133 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210071 | 1445 |  | F | CR on maintenance for inter-band FR2 CA RRM R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210071 | 1447 | 1 | F | CR on UE behavior for UE specific CBW change R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210091 | 1449 | 1 | B | CR on IDLE/INACTIVE RRM requirement with SMTC2-LP R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210070 | 1455 | 1 | F | CR to 38.133 on Link Recovery requirements (R16) | 16.7.0 |
| 2021-03 | RAN#91 | RP-210070 | 1457 | 1 | F | CR to 38.133 on Pathloss activation delay requirements (R16) | 16.7.0 |
| 2021-03 | RAN#91 | RP-210091 | 1464 | 1 | F | Interruption requirements maintenance in NR-DC (R16) | 16.7.0 |
| 2021-03 | RAN#91 | RP-210077 | 1466 | 1 | F | CR on HST core part maintenance | 16.7.0 |
| 2021-03 | RAN#91 | RP-210076 | 1470 | 1 | F | CR on CSI-RS based L3 measurement | 16.7.0 |
| 2021-03 | RAN#91 | RP-210081 | 1477 | 1 | F | CR on PRS RSTD measurement requirements | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1495 |  | A | Correction to cell reselection test case | 16.7.0 |
| 2021-03 | RAN#91 | RP-210066 | 1497 | 1 | F | Correction to cell reselection test case for UE Power saving | 16.7.0 |
| 2021-03 | RAN#91 | RP-210073 | 1501 |  | F | 2-step RACH RRM performance requirements corrections | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1504 |  | F | Update of DRX configuration in FR1 Event-triggered Test cases | 16.7.0 |
| 2021-03 | RAN#91 | RP-210072 | 1506 | 1 | B | Big CR-Introduction of NR V2X RRM performance requirements (Rel-16) | 16.7.0 |
| 2021-03 | RAN#91 | RP-210070 | 1510 |  | F | Correction on the measurement restriction for CSI-IM resource in R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1513 |  | A | Correction on PRACH configuration for FR2 Non-Contention based Random Access in R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1516 |  | A | Correction on PRACH configuration for Beam Failure Detection and Link Recovery Test in R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1519 |  | A | Correction on PRACH RMC for FR1 CSI-RS based Non-Contention based Random Access for BFR in R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210071 | 1521 | 1 | F | Correction on scheduling availability and measurement restriction on FR2 inter-band CA in R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210077 | 1526 | 1 | F | CR on HST RRM requirements in connected mode | 16.7.0 |
| 2021-03 | RAN#91 | RP-210070 | 1533 | 1 | F | CR to TS38.133 on L1-SINR measurement requirement | 16.7.0 |
| 2021-03 | RAN#91 | RP-210064 | 1535 |  | B | Big CR: Introduction of Rel-16 NR eMIMO RRM performance requirements and test cases | 16.7.0 |
| 2021-03 | RAN#91 | RP-210117 | 1538 |  | A | CR on Scell activation delay maintenance (R16) | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1546 |  | A | CR for test requirements correction of SA event triggered reporting tests for FR1 inter-frequency measurements with SSB time index detection when DRX is used | 16.7.0 |
| 2021-03 | RAN#91 | RP-210117 | 1549 |  | A | CR on R15 remaining issues | 16.7.0 |
| 2021-03 | RAN#91 | RP-210072 | 1551 | 1 | B | CR on V2X interruption | 16.7.0 |
| 2021-03 | RAN#91 | RP-210091 | 1555 | 1 | F | CR for measurement period requirements correction | 16.7.0 |
| 2021-03 | RAN#91 | RP-210122 | 1559 | 1 | F | Update on interruption test cases for Tx switching R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210076 | 1561 | 1 | F | Maintenance CR for CSI-RS based L3 measurement requirements R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1564 |  | A | Correction on the power of the first preamble for random access in EN-DC and SA in R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1567 |  | A | Correction on the time for Scell activation and CSI-report in R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1570 |  | A | Correction on the Noc level in TS38.133 in R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210079 | 1577 | 1 | F | CR on TS38.133 for Pcell change | 16.7.0 |
| 2021-03 | RAN#91 | RP-210071 | 1585 | 1 | F | CR on TS38.133 for inter-frequency measurement requirement without gap | 16.7.0 |
| 2021-03 | RAN#91 | RP-210076 | 1596 | 2 | F | 38.133 CR on the CSI-RS based measurement requirements | 16.7.0 |
| 2021-03 | RAN#91 | RP-210122 | 1599 | 1 | B | Big CR: Introduction of Rel-16 NR RRM enhancements WI performance requirements and test cases (Rel-16) | 16.7.0 |
| 2021-03 | RAN#91 | RP-210084 | 1601 | 1 | B | CR: Introduction of random access requirements with CCA | 16.7.0 |
| 2021-03 | RAN#91 | RP-210084 | 1603 | 1 | F | CR: Beam management requirements with CCA | 16.7.0 |
| 2021-03 | RAN#91 | RP-210117 | 1606 |  | A | CR on the filter for beam failure indications in 38.133 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210081 | 1608 | 1 | F | CR to TS 38.133 on UE Rx-Tx time difference measurements (section 9.9.4) | 16.7.0 |
| 2021-03 | RAN#91 | RP-210091 | 1609 | 1 | F | Maintenance CR on interruption at EUTRA SRS carrier switching in 38.133 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210091 | 1610 | 1 | F | Maintenance CR on SCell activation delay requirement in TS38.133 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1615 |  | A | Correction to Aperiodic CSI-RS configurations R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1618 |  | A | Correction to radio link monitoring test cases R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1621 |  | A | Correction to beam failure recovery test cases R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1624 |  | A | Correction to L1-RSRP reporting delay test cases R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210084 | 1630 |  | F | CR on measurement requirements for NR-U | 16.7.0 |
| 2021-03 | RAN#91 | RP-210122 | 1635 |  | A | CR on maintaining Antenna configurations in TS38.133 R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210122 | 1638 |  | A | CR on test requirements for measurement performance tests R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210070 | 1642 | 1 | F | CR on maintaining L1-SINR measurent requirements Rel-16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210071 | 1647 |  | F | Correction on interruptions of SRS carrier switching | 16.7.0 |
| 2021-03 | RAN#91 | RP-210071 | 1651 | 1 | F | UL spatial relation switching to an unknown DL RS | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1654 |  | A | Correction on test cases of inter-frequency Measurements R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210122 | 1659 | 1 | F | Correction on test cases of DL interruptions at switching between two uplink carriers | 16.7.0 |
| 2021-03 | RAN#91 | RP-210081 | 1669 | 2 | F | CR to 38.133 correction on CCSF for NR measurements for positioning | 16.7.0 |
| 2021-03 | RAN#91 | RP-210072 | 1671 |  | F | CR to 38.133 correction on reselection of V2X synchronization reference source requirements | 16.7.0 |
| 2021-03 | RAN#91 | RP-210085 | 1673 | 1 | F | Correction on inter-RAT E-UTRAN cells for UE configured with relaxed measurement criterion | 16.7.0 |
| 2021-03 | RAN#91 | RP-210066 | 1674 | 1 | F | Test case for cell reselection to FR2 intra-frequency NR case for UE configured with relaxed measurement | 16.7.0 |
| 2021-03 | RAN#91 | RP-210076 | 1678 |  | F | Correction on CSSFoutsidegap | 16.7.0 |
| 2021-03 | RAN#91 | RP-210077 | 1682 |  | F | Correction on inter-RAT measurement in high speed scenario | 16.7.0 |
| 2021-03 | RAN#91 | RP-210084 | 1692 |  | F | Maintenance CR for NR-U core requirements | 16.7.0 |
| 2021-03 | RAN#91 | RP-210091 | 1696 |  | F | Correction of band group notation for FR2 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210087 | 1698 |  | F | Correction to Idle Mode CA/DC Measurements for Inactive mode | 16.7.0 |
| 2021-03 | RAN#91 | RP-210087 | 1700 |  | F | CR clarifying the UE measurement requirements for an SCell with dormant BWP | 16.7.0 |
| 2021-03 | RAN#91 | RP-210087 | 1702 |  | F | Correction to simultaneous DCI based BWP switch delay on multiple CCs | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1713 |  | A | CR to TS 38.133: Redundant and incorrect TCI state in tests with TRS (Rel-16) | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1716 |  | A | CR to TS 38.133: Corrections to TC A.4.5.7.1 (Rel-16) | 16.7.0 |
| 2021-03 | RAN#91 | RP-210071 | 1720 | 1 | F | CR 38.133 (8.6.2A) Clarification on DCI-triggered BWP switch on multiple CCs | 16.7.0 |
| 2021-03 | RAN#91 | RP-210084 | 1722 | 1 | F | Updates in RLM requirements for NR-U | 16.7.0 |
| 2021-03 | RAN#91 | RP-210084 | 1726 | 1 | F | Terminology updates for NR-U in 38.133 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210081 | 1732 | 2 | F | PRS-RSRP measurement requirements | 16.7.0 |
| 2021-03 | RAN#91 | RP-210084 | 1738 |  | F | Applicability of RA with CCA on RRM requirements in NR-U in 38.133 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210084 | 1743 |  | F | CR on Active TCI state switching for NR-U | 16.7.0 |
| 2021-03 | RAN#91 | RP-210071 | 1745 |  | F | CR on maintenance on BWP switch requirements on multiple CCs | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1750 |  | A | CR on test cases for inter-RAT measurement r16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210117 | 1753 |  | A | CR on SCell activation delay, cell idenfication requirements on deactivated SCell and inter-RAT ECID requirements for NE-DC R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1756 |  | A | CR on SCell activation TCs R16 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210087 | 1758 |  | F | CR on EMR requirement maintenance in 38.133 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210087 | 1760 | 1 | F | CR on SCell dormancy switching | 16.7.0 |
| 2021-03 | RAN#91 | RP-210071 | 1770 | 1 | F | CR on multiple SCell activation requirements | 16.7.0 |
| 2021-03 | RAN#91 | RP-210071 | 1772 | 1 | F | CR on CGI reading requirements 38.133 | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1780 |  | A | Cat-A CR to addition of TRS Configurations in Rel-16 Test Cases | 16.7.0 |
| 2021-03 | RAN#91 | RP-210091 | 1787 | 1 | F | Cat-F CR to addition of TRS Configurations in Rel-16 Test Case | 16.7.0 |
| 2021-03 | RAN#91 | RP-210116 | 1789 |  | A | CR on correcting SSB and RACH configuration in CSI-RS based beam failure detection and link recovery tests | 16.7.0 |
| 2021-03 | RAN#91 | RP-210084 | 1791 | 1 | F | CR on Interruptions during Scell activation in NR-U | 16.7.0 |
| 2021-03 | RAN#91 | RP-210076 | 1795 |  | F | CR on core requirement for CSI-RS L3 measurement | 16.7.0 |
| 2021-06 | RAN#92 | RP-211083 | 1808 |  | F | CR to A.3.14 CSI-RS configurations for nzp-CSI-RS-ResourceId values | 16.8.0 |
| 2021-06 | RAN#92 | RP-211083 | 1811 |  | A | CR to Interruptions during measurements on deactivated NR SCC | 16.8.0 |
| 2021-06 | RAN#92 | RP-211083 | 1814 |  | A | CR to CSI-RS based L1-RSRP measurement on resource set with repetition off TCs | 16.8.0 |
| 2021-06 | RAN#92 | RP-211084 | 1817 |  | A | CR to the notation of SMTC in the general test parameters of Re-establishment TCs | 16.8.0 |
| 2021-06 | RAN#92 | RP-211084 | 1820 |  | A | CR to BWP configuration for interruption test case. | 16.8.0 |
| 2021-06 | RAN#92 | RP-211080 | 1826 | 1 | F | Update of DRX configuration in Event-triggered Test cases | 16.8.0 |
| 2021-06 | RAN#92 | RP-211084 | 1832 |  | A | Update RRM Test cases where 66RBs gives insufficient dB range | 16.8.0 |
| 2021-06 | RAN#92 | RP-211084 | 1835 |  | A | Update Reference channels and OCNG for FR2 240kHz SSB SCS RRM Test cases | 16.8.0 |
| 2021-06 | RAN#92 | RP-211084 | 1838 |  | A | Cat-A CR to Cell Reselection Tests with Async Cells in Rel-16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211081 | 1840 | 1 | F | Cat-F CR to Cell Reselection Tests with Async Cells in Rel-16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211085 | 1843 |  | A | Cat-A CR to FR2 CORESET and Search Space RMC in Rel-16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211085 | 1846 |  | A | Cat-A CR to PDSCH RMC in Rel-16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211085 | 1849 |  | A | Cat-A CR to TRS Configuration in Rel-16 Test Case | 16.8.0 |
| 2021-06 | RAN#92 | RP-211081 | 1851 | 1 | F | FR1 Single SCell activation requirement with TCI activation [FR1\_SCell\_TCI\_Act] | 16.8.0 |
| 2021-06 | RAN#92 | RP-211085 | 1856 |  | A | Maintenance CR for test cases - R16 Cat A | 16.8.0 |
| 2021-06 | RAN#92 | RP-211102 | 1858 | 1 | F | Correction to cell reselection test case for HST | 16.8.0 |
| 2021-06 | RAN#92 | RP-211104 | 1860 |  | F | Correction to cell reselection test case for UE Power saving | 16.8.0 |
| 2021-06 | RAN#92 | RP-211085 | 1863 |  | A | CR on BFD and link recovery test cases | 16.8.0 |
| 2021-06 | RAN#92 | RP-211101 | 1865 | 1 | F | CR on CSI-RS intra-frequency requirement and scheduling restriction | 16.8.0 |
| 2021-06 | RAN#92 | RP-211101 | 1866 | 1 | F | CR on CSI-RS based measurement requirements | 16.8.0 |
| 2021-06 | RAN#92 | RP-211101 | 1869 |  | B | Big CR: Introduction of Rel-16 CSI-RS based L3 measurement RRM performance requirements | 16.8.0 |
| 2021-06 | RAN#92 | RP-211103 | 1870 |  | F | CR on PRS RSTD measurement requirements | 16.8.0 |
| 2021-06 | RAN#92 | RP-211101 | 1875 |  | F | CR for clarification on frequency layer merging R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211103 | 1877 | 1 | F | CR on legacy Rel-16 HST NR UE measurement requirements (R16) | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 1879 | 1 | F | CR on RRC based BWP switching on multiple CCs of EN-DC for FR1 (R16) | 16.8.0 |
| 2021-06 | RAN#92 | RP-211104 | 1881 |  | F | Correction on the power of the first preamble for 2-step RACH | 16.8.0 |
| 2021-06 | RAN#92 | RP-211086 | 1886 |  | A | Maintenance on CSSF for EN-DC and deactivated SCell measurement R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211095 | 1888 | 1 | F | CR on reference cell availability for NR-U R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211095 | 1890 |  | F | CR on SCell activation requirement for NR-U R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 1892 | 1 | F | CR on interruption for SCell addition/release R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211104 | 1901 |  | F | CR to 38.133 on Link recovery requirements - R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 1905 | 1 | F | CR to 38.133 on Uplink Spatial relation switch for PUCCH - R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 1906 | 2 | F | CR to introduce testcase for RRC based BWP switch on multiple CCs- SA in FR2 -R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211095 | 1909 |  | F | Terminology update for NR-U | 16.8.0 |
| 2021-06 | RAN#92 | RP-211102 | 1913 | 1 | F | CR on CSSFintra for HST measurement requirements | 16.8.0 |
| 2021-06 | RAN#92 | RP-211101 | 1920 |  | F | CR: RRM congestion control test cases for NR V2X | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 1921 | 1 | F | CR: CGI reading test | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 1922 | 1 | F | CR: UL spatial relation test | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 1923 | 1 | F | CR for test cases for simultaneous DCI and Timer based BWP switch on multiple CCs for NR SA | 16.8.0 |
| 2021-06 | RAN#92 | RP-211081 | 1929 | 1 | A | Correction on the SS-RSRP difference value for SS-RSRP measurement TC in R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211081 | 1932 | 1 | A | Correction on the CSI-reporting period for SCell activation delay in R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211086 | 1939 |  | A | CR on scheduling restriction of UE during intra-frequency measurements on FR2 in R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211119 | 1941 | 1 | F | CR on TS38.133 for direct Scell activation | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 1943 | 1 | D | CR on TS38.133 for typo modifications on intra frequency and inter frequency measurement requirement | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 1945 | 1 | F | CR to 38.133 correction on SRS carrier based switching core requirements | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 1947 | 1 | F | CR to 38.133 correction on SRS carrier based switching test cases | 16.8.0 |
| 2021-06 | RAN#92 | RP-211103 | 1953 | 1 | F | CR to 38.133 correction on CCSF for NR measurements for positioning | 16.8.0 |
| 2021-06 | RAN#92 | RP-211096 | 1955 |  | F | CR to 38.133 Introduction of Gain to PRS-RSRP measurement point for FR2 in Annex B | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 1958 | 1 | F | CR on TS38.133 inter-frequency without gap -r16  NOTE Part of the CR is not implemented because changes to clause 9.1.5.1 have no track marks. | 16.8.0 |
| 2021-06 | RAN#92 | RP-211101 | 1959 | 1 | F | CR to 38.133 Correction on core requirements for CSI-RS based measurement | 16.8.0 |
| 2021-06 | RAN#92 | RP-211105 | 1969 |  | F | CR to 38.133 Correction on the requirement of FR2 L1-SINR measurement accuracy (Rel-16) | 16.8.0 |
| 2021-06 | RAN#92 | RP-211102 | 1976 | 1 | F | CR on UE Rx-Tx time difference measurement period | 16.8.0 |
| 2021-06 | RAN#92 | RP-211087 | 1982 |  | A | CR to TS 38.133: Correction of TDD Configuration for several TCs (Rel-16) | 16.8.0 |
| 2021-06 | RAN#92 | RP-211087 | 1985 |  | A | CR to TS 38.133: Correction of OCNG pattern for several TCs (Rel-16) | 16.8.0 |
| 2021-06 | RAN#92 | RP-211087 | 1988 |  | A | CR to TS 38.133: Correction of IRAT TCs (Rel-16) | 16.8.0 |
| 2021-06 | RAN#92 | RP-211087 | 1991 |  | A | CR to TS 38.133: Corrections to SS-RSRP/RSRQ/SINR accuracy TCs (Rel 16) | 16.8.0 |
| 2021-06 | RAN#92 | RP-211087 | 1994 |  | A | CR to TS 38.133: Several corrections to TCs (Rel 16) | 16.8.0 |
| 2021-06 | RAN#92 | RP-211087 | 1996 |  | F | CR on maintaining condition requirements in TS38.133 R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211102 | 1998 | 1 | F | CR on maintaining L1-SINR measurement accuracy requirements R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211106 | 2000 |  | F | CR on maintaining L1-SINR measurement accuracy tests R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211106 | 2002 |  | F | CR on maintaining L1-SINR measurent requirements R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 2004 | 1 | F | CR on maintaining SCell activation and deactication delay test for FR2 inter-band CA R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211103 | 2006 | 1 | F | CR on maintaining sync conditions for intra-band DAPS handover R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211106 | 2008 |  | F | CR on maintaining interruptions for intra-band DAPS handover R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211095 | 2019 |  | F | CR on Active TCI state switching for NR-U R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211095 | 2021 |  | F | CR on RLM requirements NR-U R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211095 | 2023 |  | F | CR on beam management requirements for NR-U R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211095 | 2025 |  | F | CR on measurement requirements for NR-U R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211095 | 2027 |  | F | CR on CSSF for NR-U R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211098 | 2029 |  | F | CR on maintenance of BWP Switch on multiple CCs 38133 R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211087 | 2032 |  | A | CR on measurement on deactivated SCell and interruption to NR serving cells for measurements on deactivated NR SCell | 16.8.0 |
| 2021-06 | RAN#92 | RP-211101 | 2036 | 1 | F | CR on time validity of the detected associatedSSB | 16.8.0 |
| 2021-06 | RAN#92 | RP-211107 | 2040 |  | F | Correction on test cases for inter-RAT cell identification in connected mode for HST | 16.8.0 |
| 2021-06 | RAN#92 | RP-211101 | 2044 |  | F | Adding intra-frequency CSI-RS measurement in CSSF | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 2046 | 1 | F | Correction on SRS carrier switching | 16.8.0 |
| 2021-06 | RAN#92 | RP-211109 | 2054 |  | F | Correction of test case of link recovery with link recovery requests | 16.8.0 |
| 2021-06 | RAN#92 | RP-211088 | 2057 |  | A | Correction to CSI-RS reference configuration\_R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211088 | 2061 |  | A | Correction to reference configurations related to DLBWP.0.2\_R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211089 | 2064 |  | A | Correction to TRS reference configuration\_R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211089 | 2067 |  | A | Correction to FR1 test cases using DLBWP.0.2\_R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211089 | 2073 |  | A | Correction to interruption during measurement on deactivated SCell test cases\_R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211089 | 2075 |  | A | Correction of test parameters for SA inter-frequency event triggered reporting TCs | 16.8.0 |
| 2021-06 | RAN#92 | RP-211089 | 2077 |  | A | CR on Rel-15 SCell activation, SMTC determination and UL timing 38133 R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211119 | 2079 |  | F | CR on EMR requirements correction 38133 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211119 | 2081 |  | F | CR on direct SCell activation | 16.8.0 |
| 2021-06 | RAN#92 | RP-211119 | 2083 |  | F | CR on SCell dormancy requirements | 16.8.0 |
| 2021-06 | RAN#92 | RP-211109 | 2085 |  | F | CR on MG for PRS measurement 38.133 R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211103 | 2093 | 1 | F | CR on CSSF and measurement capability for PRS measurement 38.133 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 2095 | 1 | F | CR on SSB offset in multiple SCell activation | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 2097 | 1 | F | CR on SMTC alignment in multiple SCell activation | 16.8.0 |
| 2021-06 | RAN#92 | RP-211101 | 2099 | 1 | F | CR on CSI-RS measurement window | 16.8.0 |
| 2021-06 | RAN#92 | RP-211119 | 2104 | 1 | F | Big CR 38.133: Introduction of Rel-16 MR-DC Direct SCell activation and SCell dormancy RRM performance requirements  NOTE Part of the CR is not implemented because CCR.2.3 TDD” are already exist | 16.8.0 |
| 2021-06 | RAN#92 | RP-211090 | 2110 |  | A | CR on NR-DC PSCell addition and release delay in Rel16 - Cat A | 16.8.0 |
| 2021-06 | RAN#92 | RP-211090 | 2113 |  | A | Maintenance CR for RRM test cases in Rel16 - Cat A | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 2115 | 1 | F | CR on RRC-based BWP switch on multiple CCs in Rel16  NOTE The CR is not implemented because the corresponding Cat A CR is not implementable. | 16.8.0 |
| 2021-06 | RAN#92 | RP-211098 | 2116 |  | A | CR on RRC-based BWP switch on multiple CCs in Rel17 - Cat A  NOTE The CR is not implemented because the Cat A CR is not implementable. | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 2117 | 1 | F | CR on test case for RRC-based BWP switch on multiple CCs - TC3 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211102 | 2122 | 1 | F | Changes to cell reselection tests under power saving | 16.8.0 |
| 2021-06 | RAN#92 | RP-211119 | 2126 | 1 | F | CR for Direct SCell activation delay | 16.8.0 |
| 2021-06 | RAN#92 | RP-211103 | 2128 | 1 | F | CR to TS 38.133: Adding conditions for L1-SINR reporting (Annex B.2) | 16.8.0 |
| 2021-06 | RAN#92 | RP-211119 | 2130 | 1 | F | CR Correction of activation delay for Direct activated Scell | 16.8.0 |
| 2021-06 | RAN#92 | RP-211091 | 2138 |  | A | Correction to AoA setup in FR2 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211081 | 2140 | 1 | F | Correction to AoA setup and beam assumptions in FR2 tests in Rel-16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211102 | 2142 | 1 | F | Correction to beam assumptions in L1-SINR FR2 tests | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 2144 | 1 | F | Correction to beam assumptions in FR2 tests on Rel-16 Mandatory gaps | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 2146 | 1 | F | Correction to beam assumptions in FR2 tests on UL spatial relation | 16.8.0 |
| 2021-06 | RAN#92 | RP-211110 | 2148 |  | F | Correction to HO tests in FR2 under mobility enhancements | 16.8.0 |
| 2021-06 | RAN#92 | RP-211102 | 2152 | 1 | F | PRS-RSRP measurement requirements | 16.8.0 |
| 2021-06 | RAN#92 | RP-211095 | 2162 | 1 | F | Interruption during Scell activation requirements for SCells operating with CCA | 16.8.0 |
| 2021-06 | RAN#92 | RP-211095 | 2164 | 1 | F | SI reading time in RRC mobility control | 16.8.0 |
| 2021-06 | RAN#92 | RP-211095 | 2168 |  | F | Updates in SCell activation in NR-U | 16.8.0 |
| 2021-06 | RAN#92 | RP-211095 | 2170 |  | F | NR-U bands | 16.8.0 |
| 2021-06 | RAN#92 | RP-211095 | 2172 | 1 | F | Big CR: Introduction of Rel-16 NR-U RRM performance | 16.8.0 |
| 2021-06 | RAN#92 | RP-211119 | 2174 |  | F | CR for core requirement maintenance on direct SCell activation R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211119 | 2176 |  | B | Big CR: Introduction of Rel-16 MR-DC EMR RRM performance requirements (TS 38.133)  NOTE Part of the CR is not implemented because new clause have no reference point | 16.8.0 |
| 2021-06 | RAN#92 | RP-211097 | 2178 | 1 | F | CR on introducing RRC based Active BWP Switch on multiple CCs in EN-DC FR2 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211081 | 2180 |  | A | Core requirement maintenance on signal characteristics (R16) | 16.8.0 |
| 2021-06 | RAN#92 | RP-211102 | 2181 |  | F | Introduce the SCell beam failure recovery without the dedicated PUCCH resource in R16 | 16.8.0 |
| 2021-06 | RAN#92 | RP-211096 | 2183 |  | B | Big CR: Introduction of Rel-16 NR Positioning RRM performance requirements and test cases | 16.8.0 |
| 2021-09 | RAN#93 | RP-211922 | 2198 |  | F | Big CR to TS 38.133: NR\_newRAT-Core maintenance (Rel-16) | 16.9.0 |
| 2021-09 | RAN#93 | RP-211925 | 2201 |  | F | Big CR to TS 38.133: NR\_newRAT-Perf maintenance Part 1 (Rel-16) | 16.9.0 |
| 2021-09 | RAN#93 | RP-211925 | 2204 |  | F | Big CR to TS 38.133: NR\_newRAT-Perf maintenance Part 2 (Rel-16) | 16.9.0 |
| 2021-09 | RAN#93 | RP-211925 | 2207 |  | F | Big CR to TS 38.133: NR\_newRAT-Perf maintenance Part 3 (Rel-16) | 16.9.0 |
| 2021-09 | RAN#93 | RP-211890 | 2209 |  | F | Big CR to TS 38.133: NR\_unlic maintenance Part 1 (Rel-16) | 16.9.0 |
| 2021-09 | RAN#93 | RP-211890 | 2211 |  | F | Big CR to TS 38.133: NR\_unlic maintenance Part 2 (Rel-16) | 16.9.0 |
| 2021-09 | RAN#93 | RP-211893 | 2213 |  | F | Big CR to TS 38.133: NR\_pos maintenance (Rel-16) | 16.9.0 |
| 2021-09 | RAN#93 | RP-211891 | 2215 |  | F | Big CR to TS 38.133: Rel-16 WIs RRM maintenance Part 1 (Rel-16) | 16.9.0 |
| 2021-09 | RAN#93 | RP-211893 | 2217 |  | F | Big CR to TS 38.133: Rel-16 WIs RRM maintenance Part 2 (Rel-16) | 16.9.0 |
| 2021-12 | RAN#94 | RP-212854 | 2238 |  | A | Big CR to TS 38.133: NR\_newRAT-Core maintenance (Rel-16) | 16.10.0 |
| 2021-12 | RAN#94 | RP-212846 | 2241 |  | F | Big CR to TS 38.133: NR\_newRAT-Perf maintenance (Rel-16) | 16.10.0 |
| 2021-12 | RAN#94 | RP-212847 | 2243 |  | F | Big CR to TS 38.133: Rel-16 WIs RRM maintenance Part 1 (Rel-16) | 16.10.0 |
| 2021-12 | RAN#94 | RP-212849 | 2245 |  | F | Big CR to TS 38.133: Rel-16 WIs RRM maintenance Part 2 (Rel-16) | 16.10.0 |
| 2021-12 | RAN#94 | RP-212847 | 2247 |  | F | Big CR to TS 38.133: Rel-16 WIs RRM maintenance Part 3 (Rel-16) | 16.10.0 |
| 2021-12 | RAN#94 | RP-212847 | 2249 |  | F | Big CR to TS 38.133: Rel-16 WIs RRM maintenance Part 4 (Rel-16) | 16.10.0 |
| 2022-03 | RAN#95 | RP-220337 | 2271 |  | F | Big CR to TS 38.133: NR\_newRAT-Core maintenance (Rel-16) | 16.11.0 |
| 2022-03 | RAN#95 | RP-220337 | 2274 | 1 | F | Big CR to TS 38.133: NR\_newRAT-Perf maintenance (Rel-16) | 16.11.0 |
| 2022-03 | RAN#95 | RP-220334 | 2276 |  | F | Big CR to TS 38.133: Rel-16 WIs RRM maintenance Part 1 (Rel-16) | 16.11.0 |
| 2022-03 | RAN#95 | RP-220339 | 2278 |  | F | Big CR to TS 38.133: Rel-16 WIs RRM maintenance Part 2 (Rel-16) | 16.11.0 |
| 2022-03 | RAN#95 | RP-220339 | 2280 |  | F | Big CR to TS 38.133: Rel-16 WIs RRM maintenance Part 3 (Rel-16) | 16.11.0 |
| 2022-06 | RAN#96 | RP-221655 | 2405 |  | F | Big CR for TS 38.133 Core Maintenance Part-1 (Rel-16) | 16.12.0 |
| 2022-06 | RAN#96 | RP-221655 | 2408 |  | F | Big CR for TS 38.133 Core Maintenance Part-2 (Rel-16) | 16.12.0 |
| 2022-06 | RAN#96 | RP-221660 | 2411 |  | F | Big CR for TS 38.133 Perf Maintenance Part-1 (Rel-16) | 16.12.0 |
| 2022-06 | RAN#96 | RP-221660 | 2414 |  | F | Big CR for TS 38.133 Perf Maintenance Part-2 (Rel-16) | 16.12.0 |
| 2022-09 | RAN#97 | RP-222023 | 2569 |  | F | Big CR for 38.133 maintenance part1 (Rel-16) | 16.13.0 |
| 2022-09 | RAN#97 | RP-222559 | 2571 | 1 | F | Big CR for 38.133 maintenance part2 (Rel-16) | 16.13.0 |
| 2022-12 | RAN#98-e | RP-223297 | 2660 | 1 | F | CR to TS 38.133: Corrections to NR positioning and high speed train test cases (Rel 16) | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223290 | 2663 |  | A | CR on NR RRM maintenance R16 | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223291 | 2670 | 1 | D | Editorial CR on scheduling restrictions for L3 measurements in FR2 (Rel-16) | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223293 | 2675 | 1 | F | CR to CSI-RS, RLM and BWP switching in annex | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223292 | 2678 |  | A | Update on Scell activation and deactivation and Control Channel RMC for RLM FR2 (Rel-16) | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223292 | 2681 |  | A | Update to L1-RSRP test scenarios (Rel-16) | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223297 | 2685 | 1 | F | Modification on TS38.133 for Rel-16 | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223297 | 2690 |  | F | CR on positioning measurement accuracy requirements in R16 | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223292 | 2694 |  | A | R16 Cat-A CR testcase correction from R15 TS 38.133 | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223293 | 2696 | 1 | F | R16 Cat-F CR testcase correction from R16 TS 38.133 | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223292 | 2701 |  | A | CR on test case correction for timing advance | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223296 | 2704 |  | F | 38133 CR on SRS configuration for SRS carrier based switching | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223292 | 2710 |  | A | CR on TC for known PSCell addition in R16 | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223292 | 2713 |  | A | CR on TC for inter-RAT NR Cell reselection in R16 | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223296 | 2733 | 1 | F | Correction of L1 L3 measurenent measurement sharing factors for inter-frequency L3 measurement performed outside gaps in R16 | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223293 | 2748 | 2 | F | Correction on Aperiodic CSI-RS RMCs and RLM in-sync test cases for R16 | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223297 | 2756 | 1 | F | CR on positioning requirements R16 | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223296 | 2771 | 2 | F | Correction to Idle Mode CA/DC Measurement Tests in TS 38.133 | 16.14.0 |
| 2022-12 | RAN#98-e | RP-223297 | 2778 | 1 | F | CR on Rel-16 measurements and UE specific CBW switch maintenance | 16.14.0 |