**3GPP TSG-RAN4 Meeting #116  *R4-2509865***

**Bengaluru, India, 25th August 2025 - 29th August 2025**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
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|  | **38.101-3** | **CR** | **1410** | **rev** | **-** | **Current version:** | **17.18.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network |  | Core Network |  |

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| ***Title:*** | (DC\_R17\_1BLTE\_1BNR\_2DL2UL-Core) CR to correct and clarify the applicable RB allocations for 30kHz SCS when UE testing in clause 7.3B.1 - TS 38.101-3 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Anritsu Limited | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | DC\_R17\_1BLTE\_1BNR\_2DL2UL-Core | | | | |  | ***Date:*** | | | 2025-08-15 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **F** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) … Rel-17 (Release 17) Rel-18 (Release 18) Rel-19 (Release 19)  Rel-20 (Release 20)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Several changes are needed:   1. There is an error in Table 7.3B.1-1: (5, 12) should be corrected to (5, 10). The RB allocation for DFT-s-OFDM is “*the closest number lower or equal to CP-OFDM maximum RB allocation satisfying the following equation, partial RB allocations shall also conform to this equation :* ” as written in TR TR38.817-01. The corresponding CP-OFDM value in Table 5.3.2-1 being 11 RBs, 10 is the closest value being lower or equal satisfying that equation. 2. 2. It is not indicated why the RB values in Table 7.3A.1-1 (DFT-s-OFDM) are different from the values given in Table 5.3.2-1 (OFDM) and how they are determined. A note is added in Table 5.3.2-1 in order to indicate how are determined the DFT-s-OFDM UL RB values used for REFSENS. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | In Table 7.3B.1-1:  - Change (5, 12) to (5,10).  - Addition of a note: “*NOTE 1: The values are determined using the CP-OFDM values from Table 5.3.2-1. The corresponding RB allocations for DFT-s-OFDM as defined in the present table, should be equal to the closest integer number lower or equal to the corresponding (same SCS and bandwidth) CP-OFDM maximum RB allocation satisfying the following equation: (where X, Y and Z are non-negative integers)*”. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | For REFSENS level or REFSENS exception tests of CA and SUL, the UL test configurations based 30kHz SCS (targeted mainly for the operating bands above 2.2GHz) are wrongly specified. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 7.3B.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **x** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **x** |  | Test specifications | | | | TS 38.521-1 | | |
| ***(show related CRs)*** | |  | **x** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | Similar changes are required for TS 38.101-1, the corresponding CR is R4-2509862. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

<<Unchanged sections skipped>>

<<Start of change>>

## 7.3B Reference sensitivity level for DC

### 7.3B.1 General

For EN-DC, E-UTRA and NR single carrier, CA, and MIMO operation of REFSENS requirements defined in TS 38.101-1 [2], TS 38.101-2 [3] and TS 36.101 [4] apply to all downlink bands of EN-DC configurations listed in clause 5.5B, unless sensitivity degradation exception is allowed in this clause of this specification, clause 7.3 in TS 38.101-1 [2], clause 7.3 in TS 38.101-2 [3] or clause 7.3 in TS 36.101 [4]. Allowed exceptions specified in this clause of the specification, clause 7.3 in TS 38.101-1 [2], clause 7.3 in TS 38.101-2 [3] or clause 7.3 in TS 36.101 [4] also apply to any higher order EN-DC configuration combination containing one of the band combinations that exception is allowed for. Reference sensitivity exceptions are specified by applying maximum sensitivity degradation (MSD) into applicable REFSENS requirement. EN-DC REFSENS requirements shall be met for NR uplink transmissions using QPSK DFT-s-OFDM waveforms as defined in clause 7.3.2 [2]. Unless otherwise specified UL allocation uses the lowest SCS allowable for a given channel BW. Limits on configured maximum output power for the uplink according to clause 6.2B.4 shall apply.

In case of interband EN-DC the receiver REFSENS requirements in this clause do not apply for 1.4 and 3 MHz E-UTRA carriers. For the case of inter-band EN-DC with a single carrier per cell group and multi carrier per cell group, in addition to the E-UTRA and NR single carrier, CA, and MIMO operation of REFSENS requirements defined in TS 38.101-1 [2], TS 38.101-2 [3], and TS 36.101 [4], the REFSENS requirements specified therein also apply with both downlink carriers and both uplink carriers active unless sensitivity exceptions are allowed in this clause of this specification, clause 7.3 in TS 38.101-1 [2] or clause 7.3 in TS 36.101 [4].

For reference sensitivity exception test points where the specified carrier frequency does not correspond to a valid NR-ARFCN, the closest NR-ARFCN as specified in clause 5.4.2 applies.s

For operations with 4  or 8 or 8 Rx antenna ports in an E-UTRA band or 4 Rx antenna ports in an NR band, the MSD in the applicable bands shall be increased by the absolute value of ΔRIB,4R in Table 7.3.1-1a or ΔRIB,8R in Table 7.3.1-1aa of TS 36.101[4] for the E-UTRA band or ΔRIB,4R in Table 7.3.2-2 of TS 38.101-1 for the NR band when MSD > 0.

NOTE: For inter-band EN-DC, the reference sensitivity requirement with both uplink carriers active is allowed to be verified for only a single inter-band EN-DC configuration per NR band.

For reference sensitivity level tests or reference sensitivity exception tests specified in clause 7.3B, SCS=15kHz based UL test configuration for NR bands can be replaced by SCS=30kHz based UL test configuration. The equivalent substitution relationship for NR bands between different SCS UL test configuration is shown in table 7.3B.1-1 for the NR operating bands above 2.2GHz.

Table 7.3B.1-1: Equivalent substitution relationship between for NR bands different SCS UL test configuration

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| SCS (kHz) | (BW[MHz], Lcrb) | | | | | | | | | |
| 15 | (5, 25) | (10, 50) | (15, 75) | (20, 100) | (25, 128) | (30, 160) | (35, 180) | (40, 216) | (45, 240) | (50, 270) |
| 30 | (5,10) | (10, 24) | (15, 36) | (20, 50) | (25, 64) | (30, 75) | (35, 90) | (40, 100) | (45, 108) | (50, 128) |
| NOTE 1: The values are determined using the CP-OFDM values from Table 5.3.2-1. The corresponding RB allocations for DFT-s-OFDM as defined in the present table, should be equal to the closest integer number lower or equal to the corresponding (same SCS and bandwidth) CP-OFDM maximum RB allocation satisfying the following equation: (where X, Y and Z are non-negative integers). | | | | | | | | | | |

**<<Unchanged parts of the section skipped>>**

<<End of change>>