**3GPP TSG- Meeting #116R4-2512601**

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

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.104** | **CR** | **xxxx** | **rev** | **-** | **Current version:** | **19.1.0** |  |
|  | | | | | | | | |
| *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 |  | Radio Access Network | **X** | Core Network |  |

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| ***Title:*** | draftCR to TS 38.104 on introduction of LP-WUS radiated BS RF considerations | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Qualcomm Incorporated | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_LPWUS-Core | | | | |  | ***Date:*** | | | 2025-08-15 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-19 |
|  | *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:*** | | Introduction of FR2 related BS aspects for LP-WUS operation following endorsed draftCR in RAN4#115 (R4-2508772). | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Ensure that FR2-1 BS aspects are covered in the core specification. | | | | | | | | |
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| ***Consequences if not approved:*** | | FR2-1 LP-WUS support by BS will not be complete. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.2, 9.7.2.2, 9.7.3.1, 9.7.4.1, 9.7.5.1, 9.8.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

<<Start of change>>

## 5.2 *Operating bands*

NR is designed to operate in the *operating bands* defined in table 5.2-1 and 5.2-2.

NR operating band n1, n2, n3, n5, n7, n8, n20, n25, n26, n28, n34, n38, n39, n41, n67, n85 and n90 which are defined in Table 5.2-1, can be applied for HAPS operation.

NOTE: For HAPS operation, the UL and DL frequency ranges are identifed in Nos. 5.312B, 5.314A, 5.388A and 5.409A and under the conditions specified in Resolutions 213, 218 and 221 in the ITU Radio Regulations [28].

NR operating bands n1, n3, n34, n39, n41, n78, n79, which are defined in Table 5.2-1, can be applied for ATG operation.

NB-IoT is designed to operate in the NR operating bands n1, n2, n3, n5, n7, n8, n12, n13, n14, n18, n20, n25, n26, n28, n31, n41, n65, n66, n70, n71, n72, n74, n85, n87, n88, n90, n106 which are defined in Table 5.2-1.

LP-WUS is designed to operate in the NR operating bands defined in Table 5.2-1 for FR1 and Table 5.2-2 for FR2, excluding SUL and SDL bands as well as bands n46, n47, n96, and n102.

<Next Change>

#### 9.7.2.2 Minimum requirement for *BS type 1-O* and *BS type* 2-O

The OTA occupied bandwidth for each NR carrier shall be less than the *BS channel bandwidth*. For intra-band contiguous CA, the OTA occupied bandwidth shall be less than or equal to the *Aggregated BS Channel Bandwidth*.

If the BS supports LP-WUS operation, the occupied bandwidth for each NR carrier with LP-WUS shall be less than the *BS channel bandwidth*.

<Next Change>

#### 9.7.3.1 General

OTA Adjacent Channel Leakage power Ratio (ACLR) is the ratio of the filtered mean power centred on the assigned channel frequency to the filtered mean power centred on an adjacent channel frequency. The measured power is TRP.

The requirement shall be applied per RIB during the *transmitter ON period*.

The requirements shall also apply if the BS supports LP-WUS operation.

<Next Change>

#### 9.7.4.1 General

The OTA limits for operating band unwanted emissions are specified as TRP per RIB unless otherwise stated.

The requirements shall also apply if the BS supports LP-WUS operation.

<Next Change>

#### 9.7.5.1 General

Unless otherwise stated, all requirements are measured as mean power.

The OTA spurious emissions limits are specified as TRP per RIB unless otherwise stated.

The requirements shall also apply if the BS supports LP-WUS operation.

<Next Change>

### 9.8.1 General

The OTA transmitter intermodulation requirement is a measure of the capability of the transmitter unit to inhibit the generation of signals in its non-linear elements caused by presence of the wanted signal and an interfering signal reaching the transmitter unit via the RDN and antenna array from a co-located base station. The requirement shall apply during the *transmitter ON period* and the *transmitter transient period*.

The requirement shall apply at each RIB supporting transmission in the *operating band*.

The transmitter intermodulation level is the *total radiated power* of the intermodulation products when an interfering signal is injected into the *co-location reference antenna*.

The OTA transmitter intermodulation requirement is not applicable for *BS type 2-O*.

The requirements shall also apply if the BS supports LP-WUS operation.

<<End of change>>