**3GPP TSG-RAN WG4 Meeting # 111 *R4-2409952***

**Fukuoka City, JP, 20 May 2024 - 24 May 2024**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.113** | **CR** | **0078** | **rev** | **1** | **Current version:** | **15.19.0** |  |
|  | | | | | | | | |
| *For* ***[HELP](http://www.3gpp.org/3G_Specs/CRs.htm" \l "_blank)*** *on using this form: comprehensive instructions can be found at  <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:*** | (NR\_newRAT)CR to TS 38.113 BS EMC maintenance R15 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | ZTE Corporation, Sanechips | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_newRAT | | | | |  | ***Date:*** | | | 2024-05-06 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | F |  | | | | | ***Release:*** | | | Rel-15 |
|  | *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for change:*** | | The current version of TS38.113 have some incorrect references, empty void clauses and tables and out of date test configurations. This maintenance CR will fix these issues. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Editing the reference that is pointed to incorrect clauses in RF Spec. Updating the test configuration tables to align with RF Spec. Deleting some empty void tables and clauses. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Those incorrect references, out of date test configurations and empty clauses and tables will be remained. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.4, 4.5, 8, 9.1 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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 proposed changes>

4.4 Exclusion bands

4.4.1 Transmitter exclusion band

The*transmitter exclusion band* for BS is the frequency range over which no tests of radiated immunity of a transmitter are made. The *transmitter exclusion band* only applies to BS type 1-O.

The *transmitter exclusion band* is defined as:

FDL,low – ΔfOBUE<f < FDL,high + ΔfOBUE

Where:

Values of FDL,low and FDL,high are defined for each *operating band* in TS 38.104 [2], subclause 5.2.

The value of ΔfOBUE is derived considering the width of the *operating band*, and is defined in TS 38.104 [2], subclause 6.6.1.

For BS capable of multi-band operation, the total *transmitter exclusion band* is a combination of the *exclusion bands* for each *operating band* supported by BS.

NOTE 1: The *transmitter exclusion bands* do not apply for SUL bands.

NOTE 2: As the radiated immunity testing is defined in the frequency range 80 MHz to 6 GHz, there is no *transmitter exclusion band* defined for *BS type 2-O*.

<Start of next proposed changes>

4.5 BS test configurations

The present subclause defines the BS test configurations that shall be used for demonstrating conformance. A single NR carrier shall be used for testing of single-carrier capable BS.

Single carrier configuration (SC) tests shall be performed using signal with narrowest supported *BS channel bandwidth* with the smallest supported subcarrier spacing declared per *operating band* in TS 38.141-1 [3] subclause 4.6, and TS 38.141-2 [4] subclause 4.6.

For other NR base stations, the test configurations in table 4.5-1 and table 4.5-2 shall be used. The NR test configurations (NRTCx) are defined in TS 38.141-1 [3], subclause 4.7 for *BS type 1-C* and *BS type 1-H* and in TS 38.141-2 [4], subclause 4.7 for *BS type 1-O* and *BS type 2-O*.

**Table 4.5-1: Test configurations for *BS type 1-C* and *BS type 1-H***

| **BS test case** | **BS capable of multi-carrier and/or CA in a single band** | | | **BS capable of multi-band operation** | |
| --- | --- | --- | --- | --- | --- |
|  | **Contiguous spectrum capable BS** | **C and NC capable BS with identical parameters** | **C and NC capable BS with different parameters** | **BS capable of multi-band operation with common connector** | **BS capable of multi-band operation with separate connector** |
| Emission tests | NRTC1 | NRTC3 | NRTC1, NRTC3 | NRTC1/3 (Note 1), NRTC5 | NRTC1/3 (Note 1), NRTC5(Note 2) |
| Immunity tests | NRTC1 | NRTC3 | NRTC1, NRTC3 | NRTC5 | NRTC1/3 (Note 1), NRTC5(Note 3) |
| Note 1: NRTC1 and/or NRTC3 shall be applied in each supported operating band.  Note 2: For single-band operation test, other antenna connector(s) is (are) terminated.  Note 3: NRTC5 is only applicable for multi-band receiver. | | | | | |

**Table 4.5-2: Test configurations for *BS type 1-O***

| **BS test case** | **Single band RIB** | | | **Multi-band RIB** |
| --- | --- | --- | --- | --- |
|  | **Contiguous spectrum capable BS** | **C and NC capable BS with identical parameters** | **C and NC capable BS with different parameters** |
| Emission tests | NRTC1 | NRTC3 | NRTC1, NRTC3 | NRTC1/3 (Note), NRTC5 |
| Immunity tests | NRTC1 | NRTC3 | NRTC1, NRTC3 | NRTC5 |
| Note: NRTC1 and/or NRTC3 shall be applied in each supported operating band. | | | | |

**Table 4.5-3: Test configurations for *BS type 2-O***

| **BS test case** | **Single band RIB** | | |
| --- | --- | --- | --- |
|  | **Contiguous spectrum capable BS** | **C and NC capable BS with identical parameters** | **C and NC capable BS with different parameters** |
| Emission tests | NRTC1 | NRTC3 | NRTC1, NRTC3 |
| Immunity tests | NRTC1 | NRTC3 | NRTC1, NRTC3 |

<Start of next proposed changes>

8 Emission

8.1 Test configurations

This subclause defines the configurations for emission tests as follows:

- The equipment shall be tested under normal test conditions as specified in the functional standards;

- The test configuration shall be as close to normal intended use as possible;

- If the equipment is part of a system, or can be connected to ancillary equipment, then it shall be acceptable to test the equipment while connected to the minimum configuration of *ancillary equipment* necessary to exercise the ports;

- If the equipment has a large number of ports, then a sufficient number shall be selected to simulate actual operation conditions and to ensure that all the different types of termination are tested;

- The test conditions, test configuration and mode of operation shall be recorded in the test report;

- Ports which in normal operation are connected shall be connected to an *ancillary equipment* or to a representative piece of cable correctly terminated to simulate the input/output characteristics of the *ancillary equipment*; in case of *BS type 1-C* and *BS type 1-H*, *antenna port*s shall be correctly terminated;

- For *BS type 1-O* and *BS type 2-O* without *antenna ports* but intentionally radiating through the *antenna array*, the equipment shall be placed in a test setup suitable for the radiated power;

- Ports which are not connected to cables during normal operation, e.g. service connectors, programming connectors, temporary connectors etc. shall not be connected to any cables for the purpose of EMC testing. Where cables have to be connected to these ports, or interconnecting cables have to be extended in length in order to exercise the EUT, precautions shall be taken to ensure that the evaluation of the EUT is not affected by the addition or extension of these cables;

- The test arrangements for transmitter and receiver clauses of the transceiver are described separately for the sake of clarity. However, where possible the test of the transmitter clause and receiver clause of the EUT may be carried out simultaneously to reduce test time.

<End of proposed changes>