**3GPP T****SG-RAN WG4 Meeting #112 R4-2413501**

**Maastricht, Netherlands, August 19 – 23, 2024**

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| *CR-Form-v12.3* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  |  | **CR** | **0025** | **rev** | **1** | **Current version:** |  |  |
|  | | | | | | | | |
| *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:*** | CR to TS 38.115-2 with updates and corrections | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** |  | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | NR\_netcon\_repeater-Perf | | | | |  | ***Date:*** | | | 2024-08-09 |
|  |  | | | |  | |  | | |  |
| ***Category:*** |  |  | | | | | ***Release:*** | | | Rel-18 |
|  | *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:*** | | This is CR to repeater radiated test conformance specification TS 38.115-2 with corrections to NCR. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Clause 6.11.5: correction of IAB-MT PUCCH to NCR-MT.  In clauses 6.12, 6.13, 6.14, 6.15 there are some text highlits to be removed. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Specification will be missleading. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 6.11.5 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **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:*** | | This is revision of R4-2412904. | | | | | | | | |

<Start of changes>

6.11.5 Test requirements

For *NCR-MT type 2-O*, the EVM of each NR carrier for different modulation schemes on PDSCH or PUSCH shall be less than the limits in table 6.11.5-1.

**Table 6.11.5-1: EVM requirements for *NCR-MT type 2-O***

|  |  |
| --- | --- |
| **Modulation scheme for PDSCH or PUSCH** | **Required EVM (%)** |
| QPSK | 18.5 |
| 16QAM | 13.5 |
| 64QAM | 9 |
| 256QAM | 4.5 |
| NOTE: 256QAM is not supported by FR2-1 NCR-MT PUSCH | |

EVM requirements shall apply for each NR carrier over all allocated resource blocks and uplink slots for NCR-MT. PT-RS should be configured for localized setting for every fourth symbol for every second RB for NCR-MT. Different modulation schemes listed in table 6.6.3.5.2-1 shall be considered for rank 1.

For all bandwidths, the EVM measurement shall be performed for each NR carrier over all allocated resource blocks and uplink slots for NCR-MT within 10 ms measurement periods. The boundaries of the EVM measurement periods need not be aligned with radio frame boundaries.

Tables 6.11.5-2 and 6.11.5-3 below specify the EVM window length (*W*) for normal CP for *NCR-MT type 2-O*.

**Table 6.11.5-2: EVM window length for normal CP, FR2-1, 60 kHz SCS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Channel bandwidth (MHz)** | **FFT size** | **Cyclic prefix lengthen FFT samples** | **EVM window length *W*** | **Ratio of *W* to total CP length (Note)**  **(%)** |
| 50 | 1024 | 72 | 36 | 50 |
| 100 | 2048 | 144 | 72 | 50 |
| 200 | 4096 | 288 | 144 | 50 |
| NOTE: These percentages are informative and apply to all OFDM symbols within subframe except for symbol 0 of slot 0 and slot 2. Symbol 0 of slot 0 and slot 2 may have a longer CP and therefore a lower percentage. | | | | |

**Table 6.11.5-3: EVM window length for normal CP, FR2-1, 120 kHz SCS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Channel bandwidth (MHz)** | **FFT size** | **Cyclic prefix length in FFT samples** | **EVM window length *W*** | **Ratio of *W* to total CP length (Note)**  **(%)** |
| 50 | 512 | 36 | 18 | 50 |
| 100 | 1024 | 72 | 36 | 50 |
| 200 | 2048 | 144 | 72 | 50 |
| 400 | 4096 | 288 | 144 | 50 |
| NOTE: These percentages are informative and apply to all OFDM symbols within subframe except for symbol 0 of slot 0 and slot 4. Symbol 0 of slot 0 and slot 4 may have a longer CP and therefore a lower percentage. | | | | |

<Next changes>

6.12.5 Test requirements

For *NCR type 2-O* of WA class, the test requirement for OTA reference sensitivity requirement is defined in TS 38.176-2 [21], clause 7.3.5.

For *NCR type 2-O* of LA class, the test requirement for OTA reference sensitivity requirement is defined in TS 38.521-2 [20], clause 7.3.2.5.

This test requirement applies at MT RIB only.

<Next changes>

6.13.5 Test requirements

For *NCR type 2-O* of LA class, the test requirement for OTA maximum input level is defined in TS 38.521-2 [20], clause 7.4.5.

This test requirement applies at MT RIB only.

<Next changes>

6.14.5 Test requirements

For *NCR type 2-O* of WA class, the test requirement for OTA ACS is defined in TS 38.176-2 [21], clause 7.5.1.5.3.

For *NCR type 2-O* of LA class, the test requirement for OTA ACS is defined in TS 38.521-2 [20], clause 7.5.5.

This test requirement applies at MT RIB only.

<Next changes>

6.15.5 Test requirements

For *NCR type 2-O* of WA class, the test requirement for OTA blocking is defined in TS 38.176-2 [21], clause 7.5.2.5.3.

For *NCR type 2-O* of LA class, the test requirement for OTA blocking is defined in TS 38.521-2 [20], clause 7.6.2.5.

This test requirement applies at MT RIB only.

<Next changes>

6.16.5 Test requirements

For *NCR type 2-O* of WA class, the test requirement for OTA spurious emission is defined in TS 38.176-2 [21], clause 7.7.5.

For *NCR type 2-O* of LA class, the test requirement for OTA spurious emission is defined in TS 38.521-2 [20], clause 7.9.5.

This test requirement applies at MT RIB only.

<End of changes>