**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 canbe 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. |
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| ***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>