**3GPP TSG-RAN4 WG4 Meeting #112 *rev1-***

 **–**

|  |
| --- |
| *CR-Form-v12.3* |
| **DRAFT CHANGE REQUEST** |
|  |
|  | **38.101-1** | **CR** |  | **rev** | **1** | **Current version:** | **18.6.0** |  |
|  |
| *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)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network |  | Core Network |  |

|  |
| --- |
|  |
| ***Title:***  |  PC2 |
|  |  |
| ***Source to WG:*** | Skyworks Solutions, Inc., Qualcomm Inc., Nokia. |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | HPUE\_FR1\_TDD\_NR\_CADC\_SUL\_R18, HPUE\_FR1\_FDD\_NR\_CADC\_R18 |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** | **F** |  | ***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:*** | Principles were agreed in R4-2406701, R4-2410651 and further changes due to Rel 18.6.0 implementation are discussed in R4-2413063. |
|  |  |
| ***Summary of change:*** | * Removed “UL” from clause 7.3A.4 title since this clause includes both UL harmonic and Rx mixing MSD requirements.
* Modified PC2 UL harmonic MSD test points according to principles agreed in R4-2406701 and based on corrected PC3 MSD. Corrections less than 0.5dB are not implemented.

Merged PC2 UL harmonic MSD tables according to WF R4-2403628.Corrected issues with the introduction of new “voided” notes as discussed in R4-2413063. |
|  |  |
| ***Consequences if not approved:*** | Several errors and inconsistencies remain erroneous these MSD tables. |
|  |  |
| ***Clauses affected:*** | 7.3A.4 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR ... CR ...  |
| ***affected:*** | **X** |  |  Test specifications | TS38.521  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** | This is a revision of R4-2413022. |

**---Start of changes---**

7.3A.4 Reference sensitivity exceptions due to harmonic interference for CA

Sensitivity degradation is allowed for different combinations of UL configurations and DL channel bandwidths if a band in frequency range 1 is impacted by UL harmonic interference from another band which belongs to NR band in frequency range 1 of the same downlink CA configuration. Reference sensitivity exceptions and uplink/downlink configurations due to UL harmonic from a PC3 aggressor NR UL band for either single band uplink or PC3 or PC2 CA are specified in Table 7.3A.4-1. For these exceptions, only the listed test points in Table 7.3A.4-1 are needed to be tested.

**--- next change ---**

For a PC2 aggressor NR UL band for NR DL CA FR1, the maximum amount of REFSENS degradation is specified in Table 7.3A.4-2a.

**Table 7.3A.4-2a: Reference sensitivity exceptions and uplink/downlink configurations due to UL harmonic from a PC2 aggressor NR UL band for NR DL CA FR1**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **UL band** | **DL band** | **UL BW** | **SCS of UL band** | **UL RB Allocation** | **DL BW** | **MSD** | **MSD** | **UL/DL fc condition** | **UL/DL harmonic order** |
| **(MHz)** | **(kHz)** | **LCRB** | **(MHz)** | **(dB)** | **(dB)** |
| n3 | n78 | 5 | 15 | 12 | 10 | 27.1 | 32.3 | NOTE 2 | UL2/DL1direct-hit |
| n3 | n78 | 10 | 15 | 12 | 100 | 16.6 | 20.8 | NOTE 2 | UL2/DL1direct-hit |
| n25 | n77 | 5 | 15 | 12 | 10 | 26.9 | 31.9 | NOTE 2 | UL2/DL1direct-hit |
| n25 | n77 | 10 | 15 | 12 | 100 | 16.8 | 20.8 | NOTE 2 | UL2/DL1direct-hit |
|  |  |  |  |  |  |  |  |  |  |
| n71 | n2510,11 | 5 | 15 | 8  | 5 | 9.4 | 12.9 | NOTE 3 | UL3/DL1direct-hit |
| n71 | n2510,11 | 5 | 15 | 8  | 40 | 0.7 | 1.1 | NOTE 3 | UL3/DL1direct-hit |
| n71 | n41 | 5 | 15 | 6 | 10 | 13.6 | 17.8 | NOTE 4 | UL4/DL1direct-hit |
| n71 | n41 | 5 | 15 | 6 | 100 | 5.1 | 6.1 | NOTE 4 | UL4/DL1direct-hit |
| n66 | n77 | 5 | 15 | 12 | 10 | 26.9 | 31.9 | NOTE 2 | UL2/DL1direct-hit |
| n66 | n77 | 20 | 15 | 12 | 100 | 16.7 | 20.8 | NOTE 2 | UL2/DL1direct-hit |
|  |  |  |  |  |  |  |  |  |  |
| n71 | n77 | 5 | 15 | 5 | 10 | 13.2 | 17.4 | NOTE 5 | UL5/DL1direct-hit |
| n8 | n79 | 5 | 15 | 5 | 10 | 14.9 | 19 | NOTE 2 | UL5/DL1direct-hit |
| n8 | n79 | 5 | 15 | 5 | 100 | 6.2 | 8.4 | NOTE 2 | UL5/DL1direct-hit |
| n8 | n41 | 5 | 15 | 8 | 10 | 15.9 | 20 | NOTE 2 | UL3/DL1direct-hit |
| n8 | n41 | 5 | 15 | 8 | 100 | 6.5 | 9.5 | NOTE 2 | UL3/DL1direct-hit |
| NOTE 1: VoidNOTE 2: The requirements should be verified for UL NR-ARFCN of the aggressor (lower) band (superscript LB) such that  in MHz and  with carrier frequency in the victim (higher) band in MHz and the channel bandwidth configured in the lower band.NOTE 3: The requirements should be verified for UL NR ARFCN of the aggressor (lower) band (superscript LB) such that  in MHz and  with the carrier frequency in the victim (higher) band in MHz and the channel bandwidth configured in the low band.NOTE 4: The requirements should be verified for UL NR-ARFCN of the aggressor (lower) band (superscript LB) such that in MHz and  with carrier frequency in the victim (higher) band in MHz and  the channel bandwidth configured in the lower band.NOTE 5: The requirements should be verified for UL NR-ARFCN of the aggressor (lower) band (superscript LB) such that in MHz and  with carrier frequency in the victim (higher) band in MHz and  the channel bandwidth configured in the lower band.NOTE 6: The near-miss requirements are only applicable when direct-hit requirements do not apply. These requirements should be verified for downlink channel bandwidths no larger than 10 MHz and with a carrier frequency at MHz offset from  in the victim (higher band) with , whereandare the channel bandwidths configured in the aggressor (lower) and victim (higher) bands in MHz, respectively.NOTE 7: Applicable to UEs supporting PC2 with single Tx.NOTE 8: Applicable to UEs supporting PC2 with dual Tx.NOTE 9: These requirements apply when the upper edge frequency of the 5 MHz uplink channel in Band n71 is located at 668 MHz and the downlink channel in Band n25 is located with its upper edge at 1995 MHz.NOTE 10 The direct-hit requirements apply when there is at least one individual RE within the uplink transmission bandwidth of the aggressor (lower) band for which the 2nd / 3rd / 4th / 5th transmitter harmonic is within the downlink transmission bandwidth of a victim (higher) band. The requirements should be verified using RBstart = floor((NRB-LCRB)/2), where floor(x) is the greatest integer less than or equal to x, and where the UL parameters NRB and LCRB are respectively, the transmission bandwidth configuration and the number of RB’s for the specified UL band channel bandwidth and the UL band subcarrier spacing.NOTE 11: Void. |

**Table 7.3A.4-2b: Void**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |

**---End of changes---**