3GPP TSG-RAN WG4 Meeting #111 R4-2410545

Fukuoka, Japan, 20 May – 24 May, 2024

**Agenda Item:** 6.18.2

**Source:** CMCC, Huawei, HiSilicon, Murata Manufacturing Co Ltd., Skyworks Solutions Inc.

**Title:** (HPUE\_FR1\_TDD\_NR\_CADC\_SUL\_R18) TP for TR 38.850 to introduce PC2 CA\_n8A-n41A on n8 with TxD

**Document for:** Approval

1. Introduction

PC2 CA\_n8-n41 on UL n8 without TxD have been approved during last meeting.

In this contribution, we will analyze the MSD studies for PC2 CA\_n8-n41 on UL n8 with TxD.

1. Reference
2. . TR 38.850 Rel-18 High power UE (power class 2) for a single FR1 NR FDD band in UL of NR intra-band and inter-band CA/DC combinations with y bands downlink (y=1,2,3,4,5,6) and x bands uplink (x=1)
3. TP to TR 38.850

**<<Start of Change for TR 38.850>>**

5.x CA\_ n8A-n41A

5.x.1 UE maximum output power

**Table 5.5A.3.1-1: NR CA configurations and bandwidth combinations sets defined for inter-band CA (two bands)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **NR CA configuration** | **Uplink CA configuration or**  **single uplink carrier** | **NR Band** | **Channel bandwidth (MHz)** | **Bandwidth combination set** |
| CA\_n8A-n41A | n88  CA\_n8A-n41A | n8 | 5, 10, 15, 20 | 0 |
|  |  | n41 | 10, 15, 20, 40, 50, 60, 80, 90, 100 |  |
|  |  | n8 | 5, 10, 15, 20 | 1 |
|  |  | n41 | 10, 15, 20, 40, 50, 60 |  |
|  |  | n8 | See n8 channel bandwidths in Table 5.3.5-1 | 4 and 5 |
|  |  | n41 | See n41 channel bandwidths in Table 5.3.5-1 |  |
| NOTE 8: Power Class 2 is allowed for this uplink combination or single uplink carrier in this downlink/uplink combination  NOTE 9: Power Class 1.5 is allowed for this single uplink carrier in this downlink/uplink combination | | | | |

5.x.2 Reference sensitivity requirements

For PC3 CA\_n8A-n41A, there are harmonic MSD for this band combination:

3rd harmonic of band n8 UL fall into band n41 DL.

#### 5.x.2.1 Reference sensitivity requirements with PC2 on n8 without TxD

For CA\_n8-n41, this is the configuration and MSD for UL n8 with PC3 in TS 38.101-1.

**Table 5.x.2.1-1: Reference sensitivity exceptions and uplink/downlink configurations due to UL harmonic from a PC3 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 | UL/DL fc condition | UL/DL harmonic order |
| (MHz) | (kHz) | LCRB | (MHz) | (dB) |
| n8 | n41 | 5 | 15 | 16 (RBstart=0) | 10 | 13 | NOTE 3 | UL3/DL1  direct-hit |
| n8 | n41 | 5 | 15 | 25 (RBstart=0) | 100 | 3.5 | NOTE 3 | UL3/DL1  direct-hit |
| 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. | | | | | | | | |

PC2 MSD for PC2 UL n8 without TxD is specified as below.

**Table 5.x.2.1-2: Reference sensitivity exceptions and uplink/downlink configurations due to UL harmonic from a PC2 aggressor NR UL band for NR DL CA FR1 for UE not supporting Tx Diversity**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UL band | DL band | UL BW | SCS of UL band | UL RB Allocation | DL BW | MSD | UL/DL fc condition | UL/DL harmonic order |
| (MHz) | (kHz) | LCRB | (MHz) | (dB) |
| n8 | n41 | 5 | 15 | 16 (RBstart=0) | 10 | 15.9 | NOTE X | UL3/DL1  direct-hit |
| n8 | n41 | 5 | 15 | 25 (RBstart=0) | 100 | 6.2 | NOTE X | UL3/DL1  direct-hit |
| NOTE X: 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. | | | | | | | | |

#### 5.x.2.2 Reference sensitivity requirements with PC2 on n8 with TxD

PC2 MSD for PC2 UL n8 without TxD is specified as below.

**Table 5.x.2.1-2: Reference sensitivity exceptions and uplink/downlink configurations due to UL harmonic from a PC2 aggressor NR UL band for NR DL CA FR1 for UE supporting Tx Diversity**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| UL band | DL band | UL BW | SCS of UL band | UL RB Allocation | DL BW | MSD | UL/DL fc condition | UL/DL harmonic order |
| (MHz) | (kHz) | LCRB | (MHz) | (dB) |
| n8 | n41 | 5 | 15 | 16 (RBstart=0) | 10 | 19.3 | NOTE X | UL3/DL1  direct-hit |
| n8 | n41 | 5 | 15 | 25 (RBstart=0) | 100 | 8.3 | NOTE X | UL3/DL1  direct-hit |
| NOTE X: 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. | | | | | | | | |

### 5.3.4 ∆TIB and ∆RIB values

Void

**<<End Change for TR 38.850>>**