3GPP TSG-RAN WG4 Meeting # 97-e R4-201xxxx

Electronic Meeting, 2nd – 13th November, 2020

**Source:** Huawei, HiSilicon

**Title:** TP to TR 38.717.02-01 for CA\_n8A-n28A

**Agenda item:** 10.2.2

**Document for:** Approval

# Background

This contribution provides text proposal on the NR CA band combination CA\_n8A-n28A as defined in New WID on NR Inter-band Carrier Aggregation/Dual Connectivity for 2 bands DL with x bands UL (x=1,2) RP-201539 [1].

# Text Proposal

##### ---Start of changes---

## 6.X CA\_n8-n28

### 6.X.1 Common for 1 band UL and 2 bands UL CA

#### 6.X.1.1 Operating bands for CA

Table 6.X.1.1-1: CA band combination CA\_n8A-n28A

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NR CA Band Combination** | **NR Band** | **Uplink (UL) band** | | | **Downlink (DL) band** | | | **Duplex**  **mode** |
| **BS receive / UE transmit** | | | **BS transmit / UE receive** | | |
| **FUL\_low – FUL\_high** | | | **FDL\_low – FDL\_high** | | |
| CA\_n8-n28 | n8 | 880 MHz | – | 915 MHz | 925 MHz | – | 960 MHz | FDD |
| n28 | 703 MHz | – | 748 MHz | 758 MHz | – | 803 MHz | FDD |

#### 6.X.1.2 Channel bandwidths per operating band for CA

Table 6.X.1.2-1: Supported bandwidths per CA band combination CA\_n8A-n28A

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **CA operating / channel bandwidth [MHz]** | | | | | | | | | | | | | | | | | |
| **NR CA Configuration** | | **UL Configuration** | **NR Band** | **SCS [kHz]** | **5** | **10** | **15** | **20** | **25** | **30** | **40** | **50** | **60** | **70** | **80** | **90** | **100** | **Bandwidth combination set** |
| CA\_n8A-n28A | | - | n8 | 15 | Yes | Yes | Yes | Yes |  |  |  |  |  |  |  |  |  | 0 |
| 30 |  | Yes | Yes | Yes |  |  |  |  |  |  |  |  |  |
| 60 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| n28 | 15 | Yes | Yes | Yes | Yes |  | Yes |  |  |  |  |  |  |  |
| 30 |  | Yes | Yes | Yes |  | Yes |  |  |  |  |  |  |  |
| 60 |  |  |  |  |  |  |  |  |  |  |  |  |  |

#### 6.X.1.3 UE Co-existence studies

Table 6.X.1.3-1/2 summarizes frequency ranges where harmonics and/or harmonics mixing occur for CA\_n8-n28.

**Table 6.X.1.3-1: Impact of UL/DL Harmonic**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **2nd Harmonic** | | **3rd Harmonic** | | **4th Harmonic** | |
| **Band** | **UL Low Band Edge** | UL High Band Edge | DL Low Band Edge | DL High Band Edge | UL Low Band Edge | UL High Band Edge | UL Low Band Edge | UL High Band Edge | UL Low Band Edge | UL High Band Edge |
| n8 | 880 | 915 | 925 | 960 | 1760 | 1830 | 2640 | 2745 | 3520 | 3660 |
| n28 | 703 | 748 | 758 | 803 | 1406 | 1496 | 2109 | 2244 | 2812 | 2992 |

Based on above table, there is no harmonic interference.

**Table 6.X.1.3-2: Impact of UL/DL Harmonic mixing**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **2nd Harmonic** | | **3rd Harmonic** | | **4th Harmonic** | |
| **Band** | **UL Low Band Edge** | UL High Band Edge | DL Low Band Edge | DL High Band Edge | DL Low Band Edge | DL High Band Edge | DL Low Band Edge | DL High Band Edge | DL Low Band Edge | DL High Band Edge |
| n8 | 880 | 915 | 925 | 960 | 1850 | 1920 | 2775 | 2880 | 3700 | 3840 |
| n28 | 703 | 748 | 758 | 803 | 1516 | 1606 | 2274 | 2409 | 3032 | 3212 |

Based on above table, there is no harmonic mixing issue.

#### 6.X.1.4 ∆TIB and ∆RIB values

For CA\_n8A-n28A, the ΔTIB,c and ΔRIB are given in the tables below reusing the values of DC\_8\_n28.

Table 6.X.1.4-1: ΔTIB,c

| Inter-band CA Configuration | NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| CA\_n8-n28 | n8 | 0.6 |
| n28 | 0.5 |
|  | | |

Table 6.X.1.4-2: ΔRIB

| Inter-band CA Configuration | NR Band | ΔRIB [dB] |
| --- | --- | --- |
| CA\_n8-n28 | n8 | 0.2 |
| n28 | 0.2 |
|  | | |

#### 6.X.1.5 REFSENs requirements

There is no MSD exception requirement for CA\_n8-n28.

#### 6.X.1.6 OOB blocking exception requirements

There is no OOB blocking exception requirement for CA\_n8-n28.

##### ---End of changes---

# Reference

[1] RP-201539, “Rel-17 NR Inter-band Carrier Aggregation/Dual Connectivity for 2 bands DL with x bands UL (x=1,2)”, ZTE Corporation