3GPP TSG-RAN WG4 Meeting # 98-e R4-2101600

Electronic Meeting, 25th January– 5th Febuary, 2021

**Source:** Huawei, HiSilicon

**Title:** TP for TR 38.717-02-01 CA\_n3A-n39A

**Agenda item:** 9.2.2

**Document for:** Approval

# Background

This contribution provides text proposal on the NR CA band combination CA\_n3A-n39A 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-202199 [1].

# Text Proposal

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

## 6.X CA\_n3-n39

### 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\_n3A-n39A

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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\_n3-n391 | n3 | 1710 MHz | – | 1785 MHz | 1805 MHz | – | 1880 MHz | FDD |
| n39 | 1880 MHz | – | 1920 MHz | 1880 MHz | – | 1920 MHz | TDD |
| Note 1: UL carrier shall be supported in Band n3 only. | | | | | | | | |

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

Table 6.X.1.2-1: Supported bandwidths per CA band combination CA\_n3A-n39A

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| NR CA configuration | Uplink CA configuration | NR Band | Channel bandwidth (MHz) (NOTE 3) | | | | | | | | | | | | | Bandwidth combination set |
|  |  |  | 5 | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |  |
| CA\_n3A-n39A | - | n3 | 5 | 10 | 15 | 20 | 25 | 30 |  |  |  |  |  |  |  | 0 |
|  |  | n39 | 5 | 10 | 15 | 20 | 25 | 30 | 40 |  |  |  |  |  |  |  |

#### 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\_n3-n39.

**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 |
| n3 | 1710 | 1785 | 1805 | 1880 | 3420 | 3570 | 5130 | 5355 | 6840 | 7140 |
| n39 | 1880 | 1920 | 1880 | 1920 | 3760 | 3840 | 5640 | 5760 | 7520 | 7680 |

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 |
| n3 | 1710 | 1785 | 1805 | 1880 | 3610 | 3760 | 5415 | 5640 | 7220 | 7520 |
| n39 | 1880 | 1920 | 1880 | 1920 | 3760 | 3840 | 5640 | 5760 | 7520 | 7680 |

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

#### 6.X.1.4 ∆TIB and ∆RIB values

For CA\_n3A-n39A, the ΔTIB,c and ΔRIB are given in the tables below reusing the values of DC\_8\_n20.

Table 6.X.1.4-1: ΔTIB,c

| Inter-band CA Configuration | NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| CA\_n3-n39 | n3 | 0.3 |
| n39 | 0.3 |
|  | | |

Table 6.X.1.4-2: ΔRIB

| Inter-band CA Configuration | NR Band | ΔRIB [dB] |
| --- | --- | --- |
| CA\_n3-n39 | n3 | 0 |
| n39 | 0 |
|  | | |

#### 6.X.1.5 REFSENs requirements

There is no MSD exception requirement for CA\_n3-n39.

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

There is no MSD exception requirement for CA\_n3-n39.

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

# Reference

[1] RP-202199, “Rel-17 NR Inter-band Carrier Aggregation/Dual Connectivity for 2 bands DL with x bands UL (x=1,2)”, ZTE Corporation