**3GPP TSG-RAN WG4 Meeting # 102-e R4-2203815**

**Electronic Meeting, February 21 – March 3, 2022**

**Title: TP to TR** **38.717-05-01: CA\_n2-n5-n48-n66-n77**

**Source: Verizon, Samsung**

**Agenda item: 9.13.2**

**Document for:** **Approval**

# 1 Introduction

RAN4 approved **R4-2200722**, a text proposal for CA\_n2-n5-n48-n66-n77 combination, in the #101-bis-e meeting. This contribution is to add an additional configuration of CA\_n2-n5-n48-n66-n77 combination into 38.717-05-01.

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## 5.1 CA\_n2-n5-n48-n66-n77

### 5.1.1 Operating bands for CA

Table 5.1.1-1: CA band combination of NR 5DL/1UL

|  |  |  |  |
| --- | --- | --- | --- |
| NR operating band | Uplink (UL) *operating band* BS receive / UE transmit  FUL\_low  – FUL\_high | Downlink (DL) *operating band* BS transmit / UE receive  FDL\_low – FDL\_high | Duplex Mode |
| n2 | 1850 MHz – 1910 MHz | 1930 MHz – 1990 MHz | FDD |
| n5 | 824 MHz – 849 MHz | 869 MHz – 894 MHz | FDD |
| n48 | 3550 MHz – 3700 MHz | 3550 MHz – 3700 MHz | TDD |
| n66 | 1710 MHz – 1780 MHz | 2110 MHz – 2200 MHz | FDD |
| n7712 | 3300 MHz – 4200 MHz | 3300 MHz – 4200 MHz | TDD |
| NOTE 12: In the USA this band is restricted to 3450 – 3550 MHz and 3700 – 3980 MHz | | | |

### 5.1.2 Channel bandwidths per operating band for CA

Table 5.1.2-1: Supported bandwidths per CA band combination of NR 5DL/1UL

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CA operating / channel bandwidth [MHz]** | | | | | | | | | | | | | | | | | |
| **NR CA Configuration** | **UL Configurations** | **NR Band** | **SCS [kHz]** | **5** | **10** | **15** | **20** | **25** | **30** | **40** | **50** | **60** | **70** | **80** | **90** | **100** | **BCS** |
| CA\_n2A-n5A-n48A-n66A-n77A | CA\_n2A-n5A  CA\_n2A-n48A  CA\_n2A-n66A  CA\_n2A-n77A  CA\_n5A-n48A  CA\_n5A-n66A  CA\_n5A-n77A  CA\_n48A-n66A  CA\_n66A-n77A | n2 | 15 | 5 | 10 | 15 | 20 |  |  |  |  |  |  |  |  |  | 0 |
| n5 | 15 | 5 | 10 | 15 | 20 |  |  |  |  |  |  |  |  |  |
| n48 | 15 | 5 | 10 | 15 | 20 |  |  | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| n66 | 15 | 5 | 10 | 15 | 20 | 25 | 30 | 40 |  |  |  |  |  |  |
| n77 | 15 |  | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| CA\_n2A-n5A-n48B-n66A-n77A | CA\_n2A-n5A  CA\_n2A-n48A  CA\_n2A-n66A  CA\_n2A-n77A  CA\_n5A-n48A  CA\_n5A-n66A  CA\_n5A-n77A  CA\_n48A-n66A  CA\_n66A-n77A  CA\_n48B | n2 | 15 | 5 | 10 | 15 | 20 |  |  |  |  |  |  |  |  |  | 0 |
| n5 | 15 | 5 | 10 | 15 | 20 |  |  |  |  |  |  |  |  |  |
| n48 | See CA\_n48B Bandwidth Combination Set 2 in Table 5.5A.1-1 | | | | | | | | | | | | | |
| n66 | 15 | 5 | 10 | 15 | 20 | 25 | 30 | 40 |  |  |  |  |  |  |
| n77 | 15 |  | 10 | 15 | 20 | 25 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| CA\_n2A-n5A-n48A-n66A-n77C | CA\_n2A-n5A  CA\_n2A-n48A  CA\_n2A-n66A  CA\_n2A-n77A  CA\_n5A-n48A  CA\_n5A-n66A  CA\_n5A-n77A  CA\_n48A-n66A  CA\_n66A-n77A  CA\_n77C | n2 | 15 | 5 | 10 | 15 | 20 |  |  |  |  |  |  |  |  |  | 0 |
| n5 | 15 | 5 | 10 | 15 | 20 |  |  |  |  |  |  |  |  |  |
| n48 | 15 | 5 | 10 | 15 | 20 |  | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| n66 | 15 | 5 | 10 | 15 | 20 | 25 | 30 | 40 |  |  |  |  |  |  |
| n77 | See CA\_n77C Bandwidth Combination Set 0 in Table 5.5A.1-1 | | | | | | | | | | | | | |
| n2 | 15 | 5 | 10 | 15 | 20 |  |  |  |  |  |  |  |  |  | 1 |
| n5 | 15 | 5 | 10 | 15 | 20 |  |  |  |  |  |  |  |  |  |
| n48 | 15 | 5 | 10 | 15 | 20 |  | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100 |
| n66 | 15 | 5 | 10 | 15 | 20 | 25 | 30 | 40 |  |  |  |  |  |  |
| n77 | See CA\_n77C Bandwidth Combination Set 1 in Table 5.5A.1-1 | | | | | | | | | | | | | |

### 5.1.3 ∆TIB and ∆RIB values

For CA\_n2-n5-n48-n66-n77, the ΔTIB,c and ΔRIB,c values are derived from DC\_2-5\_n48 and DC\_2-66\_n77.

Table 5.1.3-1: ΔTIB,c

| Inter-band CA Configuration | NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| CA\_n2-n5-n48-n66-n77 | n2 | 0.6 |
| n5 | 0.3 |
| n48 | 0.8 |
| n66 | 0.6 |
| n77 | 0.8 |

Table 5.1.3-2: ΔRIB

| Inter-band CA Configuration | NR Band | ΔRIB [dB] |
| --- | --- | --- |
| CA\_n2-n5-n48-n66-n77 | n2 | 0.2 |
| n5 | 0 |
| n48 | 0.5 |
| n66 | 0.2 |
| n77 | 0.5 |

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