**3GPP TSG-RAN WG4 Meeting # 111 R4-2410554**

**Fukuoka Meeting, May 20th – May 24th, 2024**

**Title: TP to TR 38.850 to add HP-NRCA n7-n78**

**Source: Nokia, BT plc**

**Agenda item: 6.18.2**

**Document for: Approval**

# 1 Introduction

This contribution is a text proposal for TR38.850 for adding PC2 of n7 in CA\_n7A-n78A and CA\_n7A-n78(2A).

This contribution is a text proposal to introduce PC2 n7 for DL CA\_n7A-n78A and DL CA\_n7A-n78(2A).

There is no cross-band isolation MSD for PC3 n7 for DL CA\_n7A-n78A and DL CA\_n7A-n78(2A) and there’s no uplink harmonic while the harmonic mixing MSD is omitted in the PC3 combinations since DL frequency is >2GHz and the DL harmonic is 2nd order. Decisions were made in past that these do not constitute MSD.

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5.x CA\_n7-n78

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 carrier10** | **NR Band** | **Channel bandwidth (MHz)** | **Bandwidth combination set** |
| CA\_n7A-n78A | n78  n788,9  CA\_n7A-n78A8 | n7 | 5, 10, 15, 20 | 0 |
|  |  | n78 | 10, 15, 20, 40, 50, 60, 80, 90, 100 |  |
|  |  | n7 | 5, 10, 15, 20, 25, 30, 40, 50 | 1 |
|  |  | n78 | 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100 |  |
|  |  | n7 | n7 channel bandwidths in Table 5.3.5-1 | 4 and 5 |
|  |  | n78 | n78 channel bandwidths in Table 5.3.5-1 |  |
| CA\_n7A-n78(2A) | n78  n788,9  CA\_n7A-n78A8  CA\_n78(2A)8 | n7 | 5, 10, 15, 20, 25, 30, 40, 50 | 0 |
|  |  | n78 | CA\_n78(2A)\_BCS0 |  |
|  |  | n7 | 5, 10, 15, 20, 25, 30, 40, 50 | 1 |
|  |  | n78 | CA\_n78(2A)\_BCS2 |  |
|  |  | n7 | See n7 channel bandwidths in Table 5.3.5-1 | 4 and 5 |
|  |  | n78 | CA\_n78(2A)\_BCS4 and 5 |  |
| NOTE 8: Minimum requirements for Power Class 2 are applicable for this uplink combination with 1Tx antenna connector in each band or single uplink carrier with up to 2Tx antenna connectors in this downlink/uplink combination  NOTE 10: Only single uplink carriers with power class other than PC3 are listed. | | | | |

5.x.2 REFSENS requirements

Analysis of REFSENS exceptions or MSD requirements is needed due to higher power uplink.

#### 5.x.2.0 General

For PC3, CA\_n7A-n78A and CA\_n7A-n78(2A) has no cross-band isolation MSD for UL n7.

For PC3, CA\_n7A-n78A and CA\_n7A-n78(2A) but harmonic mixing of UL3/DL2 is present for UL n7.

#### 5.x.2.1 Reference sensitivity requirements with PC2 on n7 without TxD

The harmonic mixing interference of n7 falls into Rx frequencies of n78, but this is not recorded in PC3, so some arguments must exist why UL3/DL2 was not included. Similar there’s no harm mixing for CA\_n7A-n77A either, so there must be an argument that UL3/DL2 have been omitted, while the UL2/DL3 of n77 is defined. An earlier harmonic mixing rule must have been considered:

Rule a thumb for harmonic mixing:

nxDL=mxUL

n=1,3,5 but n=2 should be considered for DL freq>2GHz

Therefore, no MSD in PC2 is declared either.

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