3GPP TSG-RAN WG4 Meeting # 98-e R4-2100269

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

Source: Verizon, Ericsson, MediaTek, LGE

Title: TP for TR 37.826 for DC\_13\_n77

Agenda item: 9.20.2

Document for: Approval

# **Introduction**

This contribution is a text proposal for TR 37.826 to include DC\_13\_n77 according to the request in [1]. And, the associated requirements in this TP are kept on the same of RAN4 agreed proposals [2].

# **Reference**

[1] RP-20xxxx, Revised WID on High power UE (power class 2) for EN-DC with 1 LTE band + 1 NR TDD band

[2] R4-1900534, Power class 2 UE for FDD-TDD EN-DC, MediaTek

# **Text Proposal**

**<Start of Text Proposal>**

## 6.x DC\_13A\_n77A

### 6.x.1 Transmitter Characteristics

#### 6.x.1.1 Maximum Output Power

Table 6.x.1.1-1: Maximum output power for inter-band EN-DC (two bands)

| **EN-DC combination** | Power class 2 (dBm) | Tolerance (dB) |
| --- | --- | --- |
| DC\_13A\_n77A | 266 | +2/-3 |
| NOTE 6: The UE supports PC3 within E-UTRA cell group, and supports either PC3 or PC2 within NR cell group. Power class support within each individual cell group is signalled separately by the UE. | | |

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#### 6.x.1.2 Co-existence study

According to the PC3 DC\_13A\_n77A study, the 5th harmonic mixing products from band 13 may fall into band n77 UL frequency range. And, the 5th IMD products generated from dual uplinks of band 13 and n77 UL may fall into the band 13 Rx frequency range. Thus, addition MSD for IMD 5 should be considered to mitigate the impact of the interference for PC2 DC\_13A\_n77A combination.

### 6.x.2 Receiver Characteristics

#### 6.x.2.1 MSD test points for intermodulation interference due to dual uplink operation for PC2 EN-DC in NR FR1 involving two bands

#### 6.x.2.1.1 Power class 2 Case A

The MSD due to receiver harmonic mixing for the PC2 Case A are same as PC3 DC\_13A\_n77A.

The additional MSD due to intermodulation for PC2 DC\_13A\_n77A are defined in table 6.x.2.1.1-1.

Table 6.x.2.1.1-1: MSD test points for PCell due to dual uplink operation for PC2 EN-DC in NR FR1 (two bands)

| NR or E-UTRA Band / Channel bandwidth / NRB / MSD | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| EN-DC Configuration | EUTRA or NR band | UL Fc  (MHz) | UL/DL BW  (MHz) | UL  LCRB | DL Fc (MHz) | **MSD for PC2** | IMD order |
| DC\_13A\_n77A | 13 | 782 | 5 | 20 | 751 | 15.37 | IMD5 |
| n77 | 3879 | 10 | 50 | 3879 | N/A | N/A |

#### 6.x.2.1.2 Power class 2 Case B

The additional MSD due to receiver harmonic mixing for the PC2 Case B DC\_13A\_n77A are defined in table 6.x.2.1.2-1.

Table 6.x.2.1.2-1: MSD exceptions (MSD) due to receiver harmonic mixing for EN-DC in NR FR1

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **E-UTRA or NR Band / Channel bandwidth of the affected DL band / MSD** | | | | | | | | | | | | |
| **UL band** | **DL band** | **5**  **MHz** | **10**  **MHz** | **15**  **MHz** | **20**  **MHz** | **25**  **MHz** | **40**  **MHz** | **50**  **MHz** | **60**  **MHz** | **70**  **MHz** | **80**  **MHz** | **100**  **MHz** |
| **dB** | **dB** | **dB** | **dB** | **dB** | **dB** | **dB** | **dB** | **dB** | **dB** | **dB** |
| n77 | 132 | 34 | 31 |  |  |  |  |  |  |  |  |  |
| NOTE 2: The requirements should be verified for UL NR-ARFCN of the aggressor (high) band (superscript HB) such that in MHz and  with carrier frequency in the victim (lower) band in MHz and  the channel bandwidth configured in the higher band. | | | | | | | | | | | | |

The additional MSD due to intermodulation for PC2 Case B DC\_13A\_n77A are same as the Case A defined in table 6.x.2.1.1-1.

#### 6.x.2.3 OOB blocking exception requirements

Since band 13 is a low band and n77 is a wide band, the OOBB exception is needed.

Table 6.x.2.3-1: EN-DC band combination with exceptions allowed

|  |
| --- |
| EN-DC band combination |
| DC\_13\_n77 |

**<End of Text Proposal>**