**3GPP TSG-RAN WG4 Meeting #98-e R4-2102068**

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

**Source:** Ericsson, Rogers

**Title:** TP to TR 37.717.11-21: Addition of DC configurations for DC\_2\_n2-n78

**Agenda item:** 9.7.2

**Document for:** Approval

# Background

This text proposal for TR 37.717-11-21 [1] to add DC\_2\_n2-n78 configurations as defined in WID [2].

# Text Proposal

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

## 6.x DC\_2\_n2-n78

### 6.x.1 Operating bands for DC

Table 6.x.1-1: DC band combination of LTE 1DL/1UL + inter-band NR 2DL/1UL

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| E-UTRA and NR DC Band combination | E-UTRA and NR DC 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 | | |
| DC\_2\_n2-n78 | 2 | 1850 MHz | – | 1910 MHz | 1930 MHz | – | 1990 MHz | FDD |
| n2 | 1850 MHz | – | 1910 MHz | 1930 MHz | – | 1990 MHz | FDD |
| n78 | 1710 MHz | – | 1780 MHz | 2110 MHz | – | 2200 MHz | FDD |

### 6.x.2 Channel bandwidths per operating band for DC

Table 6.x.2-1: Supported bandwidths per DC LTE 1DL/1UL + inter-band NR 2DL/1UL

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **DC operating / channel bandwidth [MHz]** | | | | | | | | | | | | | | | | | |
| **E-UTRA and NR DC Configuration** | **UL Configurations** | **E-UTRA and NR Band** | **SCS**  **[kHz]** | **5** | **10** | **15** | **20** | **25** | **30** | **40** | **50** | **60** | **70** | **80** | **90** | **100** | **Max aggreg. BW DL [MHz]** |
| DC\_2A\_n2A-n78A | DC\_2A\_ n78A | 2 | 15 | Yes | Yes | Yes | Yes |  |  |  |  |  |  |  |  |  | 140 |
| n2 | 15 | Yes | Yes | Yes | Yes |  |  |  |  |  |  |  |  |  |
| 30 |  | Yes | Yes | Yes |  |  |  |  |  |  |  |  |  |
| 60 |  | Yes | Yes | Yes |  |  |  |  |  |  |  |  |  |
| n78 | 15 |  | Yes | Yes | Yes | Yes | Yes | Yes | Yes |  |  |  |  |  |
| 30 |  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes |
| 60 |  | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes |
| NOTE 4: This UE channel bandwidth is optional in this release of the specification. | | | | | | | | | | | | | | | | | |

### 6.x.3 Co-existence studies

Based on co-existence studies, IMD2, IMD4 and IMD5 generated by dual uplink of 2\_n78 may fall into own Rx of band n2.

### 6.x.4 ∆TIB and ∆RIB values

For DC\_2\_n2-n78, the ΔTIB,c and ΔRIB,c values are derived from DC\_2\_n78 and are given in the tables below.

Table 6.x.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_2\_n2-n78 | 2 | 0.6 |
| n2 | 0.6 |
| n78 | 0.8 |

Table 6.x.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| DC\_2\_n2-n78 | 2 | 0.2 |
| n2 | 0.2 |
| n78 | 0.5 |

### 6.x.5 MSD

Based on Table 5.3-1 in TR 37.717-11-21, there are IMD2, IMD3 and IMD5 generated by dual uplink of 2\_n78 may fall into own Rx of band n2. MSD of DC\_2A\_n78A is reused.

The required MSD levels and test configuration are shown in the following Table.

Table 6.x.5-1: Reference sensitivity exceptions for Scell due to dual uplink operation for DC in NR FR1 (three bands)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DC bands | UL DC | IMD | | UL Fc  (MHz) | UL BW (MHz) | UL  RB # | DL Fc  (MHz) | DL BW  (MHz) | MSD  (dB) |
| DC\_2A\_n2A-n78A | B2 | IMD23 | |2\*fn78 -fB2| | 1852.5 | 5 | 25 | 1932.5 | 5 | **N/A** |
| n2 | 1862.5 | 5 | 25 | 1942.5 | 5 | **26** |
| n78 | 3795 | 10 | 50 | 3795 | 10 | **N/A** |
| DC\_2A\_n2A-n78A | B2 | IMD43 | |3\*fB2 -fn78| | 1885 | 5 | 25 | 1965 | 5 | **N/A** |
| n2 | 1865 | 5 | 25 | 1945 | 5 | **8.0** |
| n78 | 3710 | 10 | 50 | 3710 | 10 | **N/A** |
| NOTE 3: This band is subject to IMD5 also which MSD is not specified. | | | | | | | | | |

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

# Reference

[1] R4-2014304, TR37.717-11-21 v0.2.0 for DC LTE x Bands DL\_1UL (x=1,2,3,4) and 2 NR bands DL\_1UL basket WI\_r2, LG Electronics

[2] RP-202292, Revised WID on DC of x bands (x=1,2,3,4) LTE inter-band CA (xDL/1UL) and 2 bands NR inter-band CA (2DL/1UL) in Rel-17, LG Electronics