**3GPP TSG-RAN WG4 Meeting #98-e R4-2102070**

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

**Source:** Ericsson, Rogers

**Title:** TP to TR 37.717.11-21: Addition of DC configurations for DC\_71\_n2-n78

**Agenda item:** 9.7.2

**Document for:** Approval

# Background

This text proposal for TR 37.717-11-21 [1] to add DC\_71\_n2-n78 configurations as defined in WID [2].

# Text Proposal

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

## 6.77 DC\_71\_n2-n78

### 6.77.1 Operating bands for DC

Table 6.77.1-1: 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\_71\_n2-n78 | 71 | 663 MHz | – | 698 MHz | 617 MHz | – | 652 MHz | FDD |
| n2 | 1850 MHz | – | 1910 MHz | 1930 MHz | – | 1990 MHz | FDD |
| n78 | 3300 MHz | – | 3800 MHz | 3300 MHz | – | 3800 MHz | TDD |

### 6.77.2 Channel bandwidths per operating band for DC

Table 6.77.2-1: 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\_71A\_n2A-n78A | DC\_71A\_n2A DC\_71A\_ n78A | 71 | 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. | | | | | | | | | | | | | | | | | |

### 6.77.3 Co-existence studies

Based on co-existence studies, IMD3 generated by dual uplink of 71\_n2 may fall into own Rx of band n78.

Based on co-existence studies, IMD3 generated by dual uplink of 71\_n78 may fall into own Rx of band n2.

### 6.77.4 ∆TIB and ∆RIB values

For DC\_71\_n2-n78, the ΔTIB,c and ΔRIB,c values are derived from DC\_2-71\_n78 and are given in the tables below.

Table 6.77.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_71\_n2-n78 | 71 | 0.6 |
| n2 | 0.6 |
| n78 | 0.8 |

Table 6.77.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| DC\_71\_n2-n78 | 71 | 0.2 |
| n2 | 0.2 |
| n78 | 0.5 |

### 6.77.5 MSD

Based on Table 5.3-1 in TR 37.717-11-21, there is IMD3 produced by Band 71 and NR band n2 that impact the reference sensitivity of NR band n78.

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

Table 6.77.5-1: 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\_71A\_n2A-n78A | n2 | IMD3 | |fn2 +2\*fB71| | 1907.5 | 5 | 25 | 1987.5 | 5 | **N/A** |
| B71 | 695.5 | 5 | 25 | 649.5 | 5 |
| n78 | 3305 | 10 | 50 | 3305 | 10 | **8.0** |
| n2 | IMD3 | |fn78 -2\*fB71| | 1874 | 5 | 25 | 1954 | 5 | **16.5** |
| B71 | 693 | 5 | 25 | 647 | 5 | **N/A** |
| n78 | 3340 | 10 | 50 | 3340 | 10 |

##### ---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