3GPP TSG-RAN WG4 Meeting # 95-e R4-2006697

Electronic Meeting, 25th May – 5th June, 2020

Source: Verizon, Samsung

Title: TP for TR 38.716-02-00: CA\_n77-n261

Agenda item: 8.2.3

Document for: Approval

# **Introduction**

In RAN 87-e meeting, the revised WID “Rel-16 NR Inter-band Carrier Aggregation/Dual Connectivity for 2 bands DL with x bands UL (x=1,2)” [1] was approved. This contribution is a text proposal for TR 38.716-02-00 to include CA\_n77A-n261 CA band combination.

# **Reference**

[1] RP-200168 [RAN 87-e] Revised WID for NR CA\_DC 2 band DL with up to 2 band UL, ZTE

# **Text Proposal**

……..

**8 FR1+FR2 Carrier Aggregation: Specific Band Combination Part**

**<Start of Text Proposal>**

## 8.17 CA\_n77-n261

### 8.17.1 Common for 1 band UL and 2 bands UL CA

#### 8.17.1.1 Operating bands for CA

**Table 8.17.1.1-1: CA band combination of band n77+n261**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **NR 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** | | |
| n77 | 3300 MHz | – | 4200 MHz | 3300 MHz | – | 4200 MHz | TDD |
| n261 | 27500 MHz | – | 28350 MHz | 27500 MHz | – | 28350 MHz | TDD |

#### 8.17.1.2 Channel bandwidths per operating band for CA

**Table 8.17.1.2-1: Supported bandwidths per CA band combination of band n77+n261**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **NR CA configuration / Bandwidth combination set** | | | | | | | | | | | | | | | | | | | | | | |
| **NR CA configuration** | **NR Uplink CA configuration** | **NR Band** | **SCS**  **(kHz)** | **5**  **MHz** | **10**  **MHz** | **15**  **MHz** | **20**  **MHz** | | **25 MHz** | **30 MHz** | | **40**  **MHz** | **50**  **MHz** | **60**  **MHz** | **70 MHz** | **80**  **MHz** | **90**  **MHz** | **100 MHz** | **200 MHz** | | **400 MHz** | **BCS** |
| CA\_n77A-n261A | CA\_n77A-n261A | n77 | 15 |  | Yes | Yes | Yes | |  |  | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | |  |  | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes |  | |  |
| 60 |  | Yes | Yes | Yes | |  |  | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes |  | |  |
| n261 | 60 |  |  |  |  | |  |  | |  | Yes |  |  |  |  | Yes | Yes | |  |
| 120 |  |  |  |  | |  |  | |  | Yes |  |  |  |  | Yes | Yes | | Yes |
| CA\_n77A-n261D | CA\_n77A-n261A CA\_n77A-n261D | n77 | 15 |  | Yes | Yes | Yes | |  |  | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | |  |  | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes |  | |  |
| 60 |  | Yes | Yes | Yes | |  |  | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes |  | |  |
| n261 | See CA\_n261D in Table 5.5A.1-2 in TS 38.101-2 | | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261G | CA\_n77A-n261A CA\_n77A-n261G | n77 | 15 |  | Yes | Yes | Yes | |  |  | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | |  |  | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes |  | |  |
| 60 |  | Yes | Yes | Yes | |  |  | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes |  | |  |
| n261 | See CA\_n261G in Table 5.5A.1-2 in TS 38.101-2 | | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261H | CA\_n77A-n261A  CA\_n77A-n261G CA\_n77A-n261H | n77 | 15 |  | Yes | Yes | Yes | |  |  | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | |  |  | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes |  | |  |
| 60 |  | Yes | Yes | Yes | |  |  | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes |  | |  |
| n261 | See CA\_n261H in Table 5.5A.1-2 in TS 38.101-2 | | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261I | CA\_n77A-n261A  CA\_n77A-n261G  CA\_n77A-n261H CA\_n77A-n261I | n77 | 15 |  | Yes | Yes | Yes | |  |  | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | |  |  | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes |  | |  |
| 60 |  | Yes | Yes | Yes | |  |  | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes |  | |  |
| n261 | See CA\_n261I in Table 5.5A.1-2 in TS 38.101-2 | | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261J | CA\_n77A-n261A  CA\_n77A-n261G  CA\_n77A-n261H CA\_n77A-n261I  CA\_n77A-n261J | n77 | 15 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| 60 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| n261 |  | See CA\_n261J in Table 5.5A.1-1 in TS 38.101-2 | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261K | CA\_n77A-n261A  CA\_n77A-n261G  CA\_n77A-n261H CA\_n77A-n261I  CA\_n77A-n261J  CA\_n77A-n261K | n77 | 15 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| 60 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| n261 |  | See CA\_n261K in Table 5.5A.1-1 in TS 38.101-2 | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261L | CA\_n77A-n261A  CA\_n77A-n261G  CA\_n77A-n261H CA\_n77A-n261I  CA\_n77A-n261J  CA\_n77A-n261K  CA\_n77A-n261L | n77 | 15 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| 60 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| n261 | See CA\_n261L in Table 5.5A.1-1 in TS 38.101-2 | | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261M | CA\_n77A-n261A  CA\_n77A-n261G  CA\_n77A-n261H CA\_n77A-n261I  CA\_n77A-n261J  CA\_n77A-n261K  CA\_n77A-n261L  CA\_n77A-n261M | n77 | 15 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| 60 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| n261 | See CA\_n261M in Table 5.5A.1-1 in TS 38.101-2 | | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261(2A) | CA\_n77A-n261A | n77 | 15 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| 60 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| n261 | See CA\_n261(2A) in Table 5.5A.2-1 in TS 38.101-2 | | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261(2G) | CA\_n77A-n261A | n77 | 15 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| 60 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| n261 | See CA\_n261(2G) in Table 5.5A.2-1 in TS 38.101-2 | | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261(2H) | CA\_n77A-n261A | n77 | 15 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| 60 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| n261 | See CA\_n261(2H) in Table 5.5A.2-1 in TS 38.101-2 | | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261(2I) | CA\_n77A-n261A | n77 | 15 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| 60 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| n261 | See CA\_n261(2I) in Table 5.5A.2-1 in TS 38.101-2 | | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261(3A) | CA\_n77A-n261A | n77 | 15 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| 60 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| n261 | See CA\_n261(3A) in Table 5.5A.2-1 in TS 38.101-2 | | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261(4A) | CA\_n77A-n261A | n77 | 15 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| 60 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| n261 | See CA\_n261(4A) in Table 5.5A.2-1 in TS 38.101-2 | | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261(A-G) | CA\_n77A-n261A | n77 | 15 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| 60 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| n261 | See CA\_n261(A-G) in Table 5.5A.2-2 in TS 38.101-2 | | | | | | | | | | | |  | | | | | | |
| CA\_n77A-n261(A-H) | CA\_n77A-n261A | n77 | 15 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| 60 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| n261 | See CA\_n261(A-H) in Table 5.5A.2-2 in TS 38.101-2 | | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261(A-I) | CA\_n77A-n261A | n77 | 15 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes |  |  |  |  |  |  | |  | 0 |
| 30 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| 60 |  | Yes | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | Yes | |  |
| n261 | See CA\_n261(A-I) in Table 5.5A.2-2 in TS 38.101-2 | | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261(G-H) | CA\_n77A-n261A | n77 | 15 |  | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes |  |  |  |  |  | |  |  | 0 |
| 30 |  | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | | Yes |  |
| 60 |  | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | | Yes |  |
| n261 |  | See CA\_n261(G-H) in Table 5.5A.2-2 in TS 38.101-2 | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261(G-I) | CA\_n77A-n261A | n77 | 15 |  | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes |  |  |  |  |  | |  |  | 0 |
| 30 |  | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | | Yes |  |
| 60 |  | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | | Yes |  |
| n261 |  | See CA\_n261(G-I) in Table 5.5A.2-1 in TS 38.101-2 | | | | | | | | | | | | | | | | | |
| CA\_n77A-n261(H-I) | CA\_n77A-n261A | n77 | 15 |  | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes |  |  |  |  |  | |  |  | 0 |
| 30 |  | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | | Yes |  |
| 60 |  | Yes | Yes | | Yes | Yes | | Yes | Yes | Yes | Yes | Yes4 | Yes | Yes | Yes | | Yes |  |
| n261 |  | See CA\_n261(H-I) in Table 5.5A.2-2 in TS 38.101-2 | | | | | | | | | | | | | | | | | |
| NOTE 4: This UE channel bandwidth is optional in this release of the specification. (From Table 5.3.5-1 of 38.101-1) | | | | | | | | | | | | | | | | | | | | | | |

#### 8.17.1.3 Co-existence studies

Table 8.17.1.3-1 gives the UL 2nd, 3rd, 4th, 5th, 6th, 7th harmonic for CA\_n77A-n261A.

Table 8.x.1.3-1: Band n77 and Band n261 UL harmonics products

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **UE UL carriers** | **fx\_low** | **fx\_high** | **fy\_low** | **fy\_high** |
| UL frequency (MHz) | 3300 | 4200 | 27500 | 28350 |
| 2nd harmonics frequency limits | 2\*fx\_low | 2\*fx\_high | 2\* fy\_low | 2\* fy\_high |
| 2nd harmonics frequency limits (MHz) | 6600 | 8400 | 55000 | 56700 |
| 3rd harmonics frequency limits | 3\*fx\_low | 3\*fx\_high | 3\* fy\_low | 3\* fy\_high |
| 3rd harmonics frequency limits (MHz) | 9900 | 12600 | 82500 | 85050 |
| 4th harmonics frequency limits | 4\*fx\_low | 4\*fx\_high | 4\*fy\_low | 4\*fy\_high |
| 4th harmonics frequency limits (MHz) | 13200 | 16800 | 110000 | 113400 |
| 5th harmonics frequency limits | 5\*fx\_low | 5\*fx\_high | 5\* fy\_low | 5\* fy\_high |
| 5th harmonics frequency limits (MHz) | 16500 | 21000 | 137500 | 141750 |
| 6th harmonics frequency limits | 6\*fx\_low | 6\*fx\_high | 6\*fy\_low | 6\*fy\_high |
| 6th harmonics frequency limits(MHz) | 19800 | 25200 | 165000 | 170100 |
| 7th harmonics frequency limits | 7\*fx\_low | 7\*fx\_high | 7\*fy\_low | 7\*fy\_high |
| 7th harmonics frequency limits(MHz) | 23100 | 29400 | 192500 | 198450 |

In analysis, it could be seen,

* The 7th harmonic produced by UL band n77 may fall into band n261DL.

#### 8.17.1.4 ∆TIB and ∆RIB values

For CA\_n77A-n261A, the ΔTIB,c and ΔRIB values are given in the tables below.

Table 8.17.4-1: ΔTIB,c

| Inter-band CA Configuration | NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| CA\_n77-n261 | n77 | 0 |
| n261 | 0 |

Table 8.17.4-2: ΔRIB

| Inter-band CA Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| CA\_n77-n261 | n77 | 0 |
| n261 | 0 |

#### 8.17.1.5 REFSENS requirements

There are no specific REFSENS requirements for this configuration.

### 8.17.2 Specific for 2 bands UL CA

#### 8.17.2.1 UE co-existence studies

Table 8.17.2.1-1 lists Band n77 +Band n261 2UL bands CA 2nd, 3rd, 4th and 5th order IMD for the UE-to-UE coexistence analysis.

**Table 8.17.2.1-1: Band n77 and Band n261 2UL bands IMD products**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **UE UL carriers** | **fx\_low** | **fx\_high** | **fy\_low** | **fy\_high** |
| UL frequency (MHz) | 3300 | 4200 | 27500 | 28350 |
| Two tone 2nd order IMD products | fy\_low – fx\_high | fy\_high – fx\_low | fx\_low + fy\_low | fx\_high + fy\_high |
| IMD frequency limits (MHz) | 23300 | 25050 | 30800 | 32550 |
| Two-tone 3rd order IMD products | |2\*fx\_low – fy\_high| | |2\*fx\_high – fy\_low| | 2\*fy\_low – fx\_high | 2\*fy\_high – fx\_low |
| IMD frequency limits (MHz) | 21750 | 19100 | 50800 | 53400 |
| Two-tone 3rd order IMD products | 2\*fx\_low + fy\_low | 2\*fx\_high + fy\_high | 2\*fy\_low + fx\_low | 2\*fy\_high + fx\_high |
| IMD frequency limits (MHz) | 34100 | 36750 | 58300 | 60900 |
| Two-tone 4th order IMD products | |3\*fx\_low – fy\_high| | |3\*fx\_high – fy\_low| | 3\*fy\_low – fx\_high | 3\*fy\_high – fx\_low |
| IMD frequency limits (MHz) | 18450 | 14900 | 78300 | 81750 |
| Two-tone 4th order IMD products | 3\*fx\_low + fy\_low | 3\*fx\_high + fy\_high | 3\*fy\_low + fx\_low | 3\*fy\_high + fx\_high |
| IMD frequency limits (MHz) | 37400 | 40950 | 85800 | 89250 |
| Two-tone 4th order IMD products | |2\*fx\_low – 2\*fy\_high| | |2\*fx\_high – 2\*fy\_low| | 2\*fx\_low + 2\*fy\_low | 2\*fx\_high + 2\*fy\_high |
| IMD frequency limits (MHz) | 50100 | 46600 | 61600 | 65100 |
| Two-tone 5th order IMD products | |fx\_low – 4\*fy\_high| | |fx\_high – 4\*fy\_low| | |fy\_low – 4\*fx\_high| | |fy\_high – 4\*fx\_low| |
| IMD frequency limits (MHz) | 110100 | 105800 | 10700 | 15150 |
| Two-tone 5th order IMD products | |fx\_low + 4\*fy\_low| | |fx\_high + 4\*fy\_high| | |fy\_low + 4\*fx\_low| | |fy\_high + 4\*fx\_high| |
| IMD frequency limits (MHz) | 113300 | 117600 | 40700 | 45150 |
| Two-tone 5th order IMD products | |2\*fx\_low – 3\*fy\_high| | |2\*fx\_high – 3\*fy\_low| | |2\*fy\_low – 3\*fx\_high| | |2\*fy\_high – 3\*fx\_low| |
| IMD frequency limits (MHz) | 78450 | 74100 | 42400 | 46800 |
| Two-tone 5th order IMD products | |2\*fx\_low + 3\*fy\_low| | |2\*fx\_high + 3\*fy\_high| | |2\*fy\_low + 3\*fx\_low| | |2\*fy\_high + 3\*fx\_high| |
| IMD frequency limits (MHz) | 89100 | 93450 | 64900 | 69300 |

In analysis, it could be seen, there are no harmonic or IMD issues affecting own Rx frequencies of either band n77 or n261.

Table 8.17.2.1-2 lists the protected bands required for the 2UL bands CA configuration.

**Table 8.17.2.1-2: Protected bands for the 2UL bands CA configuration**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **UL NR CA Configuration** | **Spurious emission** | | | | | | |
| **Protected band** | **Frequency range (MHz)** | | | **Maximum Level (dBm)** | **MBW (MHz)** | **NOTE** |
| CA\_n77A-n261A | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 21, 26, 28, 29, 34, 39, 40, 41, 65, 70, 71 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | PHS |

#### 

#### 8.17.2.2 REFSENS requirements

There are no need for additional REFSENS requirements for this configuration.

**<Start of Text Proposal>**

……..

## **9 2 bands Dual Connectivity: Specific Band Combination Part**

**<Start of Text Proposal>**

## 9.x DC\_n77-n261

### 9.x.1 Operating bands for DC\_n77-n261

**Table 9.x.1-1: Inter-band NR DC operating bands**

|  |  |
| --- | --- |
| **NR DC Band** | **NR Band** |
| DC\_n77-n261 | n77, n261 |

### 9.x.2 Configurations for DC\_n77-n261

**Table 9.x.2-1: Inter-band NR DC configurations**

| **NR DC**  **configuration** | **Uplink NR DC**  **configuration** |
| --- | --- |
| DC\_n77A-n261A | DC\_n77A-n261A |
| DC\_n77A-n261D | DC\_n77A-n261A  DC\_n77A-n261D |
| DC\_n77A-n261G | DC\_n77A-n261A  DC\_n77A-n261G |
| DC\_n77A-n261H | DC\_n77A-n261A  DC\_n77A-n261G  DC\_n77A-n261H |
| DC\_n77A-n261I | DC\_n77A-n261A  DC\_n77A-n261G  DC\_n77A-n261H  DC\_n77A-n261I |
| DC\_n77A-n261J | DC\_n77A-n261A  DC\_n77A-n261G  DC\_n77A-n261H  DC\_n77A-n261I  DC\_n77A-n261J |
| DC\_n77A-n261K | DC\_n77A-n261A  DC\_n77A-n261G  DC\_n77A-n261H  DC\_n77A-n261I  DC\_n77A-n261J  DC\_n77A-n261K |
| DC\_n77A-n261L | DC\_n77A-n261A  DC\_n77A-n261G  DC\_n77A-n261H  DC\_n77A-n261I  DC\_n77A-n261J  DC\_n77A-n261K  DC\_n77A-n261L |
| DC\_n77A-n261M | DC\_n77A-n261A  DC\_n77A-n261G  DC\_n77A-n261H  DC\_n77A-n261I  DC\_n77A-n261J  DC\_n77A-n261K  DC\_n77A-n261L  DC\_n77A-n261M |
| DC\_n77A-n261(2A) | DC\_n77A-n261A |
| DC\_n77A-n261(2G) | DC\_n77A-n261A |
| DC\_n77A-n261(2H) | DC\_n77A-n261A |
| DC\_n77A-n261(2I) | DC\_n77A-n261A |
| DC\_n77A-n261(3A) | DC\_n77A-n261A |
| DC\_n77A-n261(4A) | DC\_n77A-n261A |
| DC\_n77A-n261(A-G) | DC\_n77A-n261A |
| DC\_n77A-n261(A-H) | DC\_n77A-n261A |
| DC\_n77A-n261(A-I) | DC\_n77A-n261A |
| DC\_n77A-n261(G-H) | DC\_n77A-n261A |
| DC\_n77A-n261(G-I) | DC\_n77A-n261A |
| DC\_n77A-n261(H-I) | DC\_n77A-n261A |

**<Start of Text Proposal>**