**3GPP TSG-RAN4 Meeting #95-e *draft R4-2006890***

**Online, , 25th May 2020 - 5th Jun 2020**

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| *CR-Form-v12.0* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **38.101-3** | **CR** | **0255** | **rev** | **-** | **Current version:** | **16.3.0** |  |
|  | | | | | | | | |
| *For* [***HELP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network |  | Core Network |  |

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|  | | | | | | | | | | |
| ***Title:*** | Big CR on introduction of completed EN-DC of 1 band LTE and 1 band NR | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | CHTTL | | | | | | | | | |
| ***Source to TSG:*** | R4 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | DC\_R16\_1BLTE\_1BNR\_2DL2UL-Core | | | | |  | ***Date:*** | | | 2020-05-15 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-16 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) Rel-12 (Release 12) Rel-13 (Release 13) Rel-14 (Release 14) Rel-15 (Release 15) Rel-16 (Release 16)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Completed DC configurations in RAN4#94bis-e and RAN4#95-e are specified. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | EN-DC configuration specific requirements are specified.  Changes in RAN4#94bis-e:  Adding support of the completed combinations:  DC\_41A\_n3A  DC\_41C\_n3A with UL DC up to DC\_41C\_n3A  DC\_41A\_n28A  DC\_41C\_n28A with UL DC up to DC\_41C\_n28A  DC\_41A\_n78(2A)  DC\_41C\_n78(2A) with UL DC up to DC\_41C\_n78A  DC\_(n)41AB  New BCS for DC\_(n)41AA, DC\_(n)41CA, DC\_41A\_n41A  DC\_42A\_n77(2A)  DC\_42C\_n77(2A)  DC\_42A\_n28A  DC\_1A\_n20A  DC\_8A\_n20A  DC\_1A\_n71A  DC\_1A\_n71B  DC\_3A\_n71A  DC\_3A\_n71B  DC\_28A\_n78(2A)  DC\_20A\_n78(2A)  DC\_41D\_n78A  DC\_(n)38AA  New BCS for DC\_(n)41DA  DC\_7A\_n40A  DC\_39A\_n79C  DC\_41A\_n79C  DC\_66A\_n7(2A)  DC\_7A-7A\_n78(2A)  DC\_66A-66A\_n78(2A)  DC\_12A\_n41A  DC\_28A\_n40A  DC\_(n)5AA  DC\_(n)12AA  DC\_66B\_n5A  DC\_66C\_n5A  DC\_39A\_n257A/D/E/F/G/H/I/J/K/L/M  Corrections:  R4-2005140 Updated TP to TR 37.716-11-11: DC\_3A\_n8A  R4-2005122 Correction TP for TR 37.716-11-11: DC\_B28\_n50, DC\_11\_n3, DC\_28\_n5  Changes in RAN4#95-e:  Adding support of the completed combinations:  DC\_48A-48A\_n71A  DC\_48A-48A-48A\_n71A  DC\_42C\_n28A with UL DC up to DC\_42C\_n28A  DC\_11A\_n28A  DC\_13A\_n2A  DC\_14A\_n2A  DC\_14A\_n66A  DC\_7A\_n20A  DC\_2A\_n2A  DC\_5A\_n5A  DC\_13A\_n5A  DC\_48C\_n261A with UL DC\_48C\_n261A  DC\_48D\_n261A with UL DC\_48C\_n261A  DC\_48D\_n261(2A) with UL DC\_48C\_n261A  DC\_48D\_n261(2A) with UL DC\_48C\_n261A  Corrections:  R4-2006877 Draft CR to 38.101-3 on the correction of DC\_48D\_n48A  R4-2006926 TP for TR 37.716-11-11: some corrections for TR 37.716-11-11  R4-2007012 Draft CR to TS 38.101-3: Editorial corrections on the MSD values due to cross bands isolation for DC\_1-n3 and DC\_3-n41  Remove [] of MSD for DC\_2A\_n48A IMD, delta T/R for DC\_4\_n41 | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Completed DC configurations are not specified. | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 5.3.B.1, 5.5B.2, 5.5B.4, 5.5B.5.1, 6.2B.1, 6.2B.4.2.3.1, 6.5B.3.3.2, 7.3B.2.1, 7.3B.2.3, 7.3B.3.2, 7.3B.3.3, Annex I | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  |  | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | | **x** |  | Test specifications | | | | 38.521-3 | | |
| ***(show related CRs)*** | |  |  | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | |  | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

## << Start of changes >>

### 5.3B.1 Intra-band EN-DC in FR1

#### 5.3B.1.1 General

The requirements for intra-band EN-DC in this specification are defined for EN-DC configurations with associated bandwidth combination sets.

For each EN-DC configuration, requirements are specified for all bandwidth combinations contained in a *bandwidth combination set*, which is indicated per supported band combination in the UE radio access capability. A UE can indicate support of several bandwidth combination sets per band combination.

#### 5.3B.1.2 BCS for Intra-band contiguous EN-DC

For intra-band contiguous EN-DC, an EN-DC configuration is a single operating band supporting an intra-band contiguous EN-DC bandwidth class.

Bandwidth combination sets for intra-band contiguous EN-DC are specified in Table 5.3B.1.2-1.

Table 5.3B.1.2-1: EN-DC configurations and bandwidth combination sets defined for intra-band contiguous EN-DC

| E-UTRA – NR configuration / Bandwidth combination set | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| Downlink  EN-DC configuration | Uplink EN-DC configurations | Component carriers in order of increasing carrier frequency | | | Maximum aggregated  bandwidth (MHz) | Bandwidth combination set |
| Channel bandwidths for E-UTRA carrier (MHz) | Channel bandwidths for NR carrier (MHz) | Channel bandwidths for E-UTRA carrier (MHz) |
| DC\_(n)5AA | DC\_(n)5AA4 | 5, 10 | 5, 10, 15, 20 |  | 25 | 0 |
|  | 5, 10, 15, 20 | 5, 10 |
| DC\_(n)12AA | DC\_(n)12AA4 | 5, 10 | 5, 10 |  | 15 | 0 |
|  | 5, 10 | 5, 10 |
| DC\_(n)38AA | DC\_(n)38AA4 | 5, 10, 15, 20 | 5, 10, 15, 20, 40 |  | 50 | 0 |
|  | 5, 10, 15, 20, 40 | 5, 10, 15, 20 |
| DC\_(n)41AA | DC\_(n)41AA | 20 | 40, 60, 80,100 |  | 120 | 0 |
|  | 40, 60, 80,100 | 20 |
| 20 | 40, 50, 60, 80,100 |  | 120 | 1 |
|  | 40, 50, 60, 80,100 | 20 |
| 20 | 10, 20, 30, 40, 50, 60, 80,100 |  | 120 | 2 |
|  | 10, 20, 30, 40, 50, 60, 80,100 | 20 |
| 10 | 20, 30, 40, 50, 60, 80,100 |  |
|  | 20, 30, 40, 50, 60, 80,100 | 10 |
| DC\_(n)41AB | DC\_(n)41AA,  DC\_41A\_n41A | 10 | 20+20 |  | 70 | 0 |
|  | 20+20 | 10 |
| 20 | 10+20 |  |
|  | 10+20 | 20 |
| 20 | 20+30 |  |
|  | 20+30 | 20 |
| DC\_(n)41CA | DC\_(n)41AA1, DC\_41A\_n41A2 | 20+20 | 40, 60, 80,100 |  | 140 | 0 |
|  | 40, 60, 80,100 | 20+20 |
| 20+20 | 40, 50, 60, 80,100 |  | 140 | 1 |
|  | 40, 50, 60, 80,100 | 20+20 |
| 20+20 | 10, 20, 30, 40, 50, 60, 80,100 |  | 140 | 2 |
|  | 10, 20, 30, 40, 50, 60, 80,100 | 20+20 |
| 10+20 | 10, 20, 30, 40, 50, 60, 80,100 |  |
|  | 10, 20, 30, 40, 50, 60, 80,100 | 10+20 |
| DC\_(n)41DA | DC\_(n)41AA1, DC\_41A\_n41A2 | 20+20+20 | 40, 60, 80,100 |  | 160 | 0 |
|  | 40, 60, 80,100 | 20+20+20 |
| 20+20+20 | 40, 50, 60, 80,100 |  | 160 | 1 |
|  | 40, 50, 60, 80,100 | 20+20+20 |
| 20+20+20 | 30, 40, 50, 60, 80,100 |  | 160 | 2 |
|  | 30, 40, 50, 60, 80,100 | 20+20+20 |
| 20+20+15 | 30, 40, 50, 60, 80,100 |  |
|  | 30, 40, 50, 60, 80,100 | 20+20+15 |
| DC\_(n)48AA5 | DC\_(n)48AA4 | 5, 10, 15, 20 | 5, 10, 15, 20, 40 |  | 60 | 0 |
|  | 5, 10, 15, 20, 40 | 5, 10, 15, 20 |
| DC\_(n)48CA5 | DC\_(n)48AA4  DC\_48A\_n48A4 | See CA\_48C Bandwidth Combination Set 0 in TS 36.101 Table 5.6A.1-1 | 5, 10, 15, 20, 40 |  | 80 | 0 |
|  | 5, 10, 15, 20, 40 | See CA\_48C Bandwidth Combination Set 0 in TS 36.101 Table 5.6A.1-1 |
| DC\_(n)48DA5 | DC\_(n)48AA4  DC\_48A\_n48A4 | See CA\_48D Bandwidth Combination Set 0 in TS 36.101 Table 5.6A.1-1 | 5, 10, 15, 20, 40 |  | 100 | 0 |
|  | 5, 10, 15, 20, 40 | See CA\_48D Bandwidth Combination Set 0 in TS 36.101 Table 5.6A.1-1 |
| DC\_(n)71AA | DC\_(n)71AA3 | 15 | 5 |  | 20 | 0 |
| 10 | 5, 10 |  |
| 5 | 5, 10, 15 |  |
|  | 5 | 15 |
|  | 5, 10 | 10 |
|  | 5, 10, 15 | 5 |
| 5 | 5,10,15,20 |  | 253 | 1 |
| 10 | 5,10,15 |  |
| 15 | 5,10 |  |
|  | 5,10,15,20 | 5 |
|  | 5,10,15 | 10 |
|  | 5,10 | 15 |
| NOTE 1: Void  NOTE 2: Void  NOTE 3: For maximum DL aggregated bandwidth of 25 MHz the asymmetric UL and DL channel bandwidth combination of Table 5.3.6-1 in TS 38.101-1 [2] is used with a maximum UL contiguous aggregated bandwidth of 20 MHz. Furthermore, a restriction is imposed on bandwidth combinations so that only a subset of BCS1 is allowed to be used on the uplink, and this subset is equivalent to BCS0.  NOTE4: Only single switched UL is supported.  NOTE5: The minimum requirements only apply for non-simultaneous Tx/Rx between all carriers. | | | | | | |

#### 5.3B.1.3 BCS for Intra-band non-contiguous EN-DC

For intra-band non-contiguous EN-DC, an EN-DC configuration is a single operating band supporting E-UTRA and NR carriers, where E-UTRA configuration is indicated by using E-UTRA CA bandwidth class as defined in TS 36.101 [4] and NR configuration is indicated by using NR CA bandwidth class as defined in TS 38.101-1 [2].

Requirements for intra-band non-contiguous EN-DC are defined for the EN-DC configurations and bandwidth combination sets specified in Table 5.3B.1.3-1.

Table 5.3B.1.3-1: EN-DC configurations and bandwidth combination sets defined for intra-band non-contiguous EN-DC

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| E-UTRA – NR configuration / Bandwidth combination set | | | | | | |
| Downlink  EN-DC configuration | Uplink EN-DC configurations | Component carriers in order of increasing carrier frequency | | | Maximum aggregated  bandwidth (MHz) | Bandwidth combination set |
| Channel bandwidths for E-UTRA carrier (MHz) | Channel bandwidths for NR carrier (MHz) | Channel bandwidths for E-UTRA carrier (MHz) |
| DC\_2A\_n2A | DC\_2A\_n2A2 | 5, 10, 15, 20 | 5, 10, 15, 20 |  | 40 | 0 |
| DC\_3A\_n3A | DC\_3A\_n3A(1) |  | 5, 10, 15, 20, 25, 30 | 5, 10, 15, 20 | 50 | 0 |
|  | 5, 10, 15, 20, 25, 30 | 5, 10, 15, 20 | 50 | 1 |
| 5, 10, 15, 20 | 5, 10, 15, 20, 25, 30 |  |
| DC\_5A\_n5A | DC\_5A\_n5A2 | 5, 10 | 5, 10, 15 |  | 20 | 0 |
| DC\_7A\_n7A3 | DC\_7A\_n7A2 | 5, 10, 15, 20 | 5, 10, 15, 20 |  | 40 | 0 |
| DC\_41A\_n41A | DC\_41A\_n41A | 20 | 40, 60, 80,100 |  | 120 | 0 |
|  | 40, 60, 80,100 | 20 |
| 20 | 40, 50, 60, 80,100 |  | 120 | 1 |
|  | 40, 50, 60, 80,100 | 20 |
| 20 | 10, 20, 30, 40, 50, 60, 80,100 |  | 120 | 2 |
|  | 10, 20, 30, 40, 50, 60, 80,100 | 20 |
| 10 | 20, 30, 40, 50, 60, 80,100 |  |
|  | 20, 30, 40, 50, 60, 80,100 | 10 |
| DC\_41C\_n41A | DC\_41A\_n41A | 20+20 | 40, 60, 80,100 |  | 140 | 0 |
|  | 40, 60, 80,100 | 20+20 |
| 20+20 | 40, 50, 60, 80,100 |  | 140 | 1 |
|  | 40, 50, 60, 80,100 | 20+20 |
| DC\_41D\_n41A | DC\_41A\_n41A | 20+20+20 | 40, 60, 80,100 |  | 160 | 0 |
|  | 40, 60, 80,100 | 20+20+20 |
| 20+20+20 | 40, 50, 60, 80,100 |  | 160 | 1 |
|  | 40, 50, 60, 80,100 | 20+20+20 |
| DC\_48A\_n48A4 | DC\_48A\_n48A2 | 5, 10, 15, 20 | 5, 10, 15, 20, 40 |  | 60 | 0 |
|  | 5, 10, 15, 20, 40 | 5, 10, 15, 20 |
| DC\_48A\_(n)48AA4 | DC\_(n)48AA2  DC\_48A\_n48A2 | See CA\_48A-48A Bandwidth Combination Set 0 in TS 36.101 Table 5.6A.1-3 | 5, 10, 15, 20, 40 |  | 80 | 0 |
|  | 5, 10, 15, 20, 40 | See CA\_48A-48A Bandwidth Combination Set 0 in TS 36.101 Table 5.6A.1-3 |
| DC\_48A-48A\_n48A4 | DC\_48A\_n48A2 | See CA\_48A-48A Bandwidth Combination Set 0 in TS 36.101 Table 5.6A.1-3 | 5, 10, 15, 20, 40 |  | 80 | 0 |
|  | 5, 10, 15, 20, 40 | See CA\_48A-48A Bandwidth Combination Set 0 in TS 36.101 Table 5.6A.1-3 |
| DC\_48C\_n48A4 | DC\_48A\_n48A2 | See CA\_48C Bandwidth Combination Set 0 in TS 36.101 Table 5.6A.1-1 | 5, 10, 15, 20, 40 |  | 80 | 0 |
|  | 5, 10, 15, 20, 40 | See CA\_48C Bandwidth Combination Set 0 in TS 36.101 Table 5.6A.1-1 |
| DC\_48D\_n48A4 | DC\_48A\_n48A2 | See CA\_48D Bandwidth Combination Set 0 in TS 36.101 Table 5.6A.1-1 | 5, 10, 15, 20, 40 |  | 100 | 0 |
|  | 5, 10, 15, 20, 40 | See CA\_48D Bandwidth Combination Set 0 in TS 36.101 Table 5.6A.1-1 |
| DC\_66A\_n66A | DC\_66A\_n66A2 | 5, 10, 15, 20 | 5, 10, 15, 20, 40 |  | 50 | 0 |
| NOTE 1: Only single switched UL is supported in Rel.15.  NOTE 2: Only single switched UL is supported.  NOTE 3: Requirements in this specification apply for NR SCS of 15 kHz only.  NOTE 4: The minimum requirements only apply for non-simultaneous Tx/Rx between all carriers. | | | | | | |

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### 5.5B.2 Intra-band contiguous EN-DC

Table 5.5B.2-1: Intra-band contiguous EN-DC configurations

|  |  |  |
| --- | --- | --- |
| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) | Single UL allowed |
| DC\_(n)5AA | DC\_(n)5AA6 | Yes6 |
| DC\_(n)12AA | DC\_(n)12AA6 | Yes6 |
| DC\_(n)38AA5 | DC\_(n)38AA6 | Yes6 |
| DC\_(n)41AA5  DC\_(n)41AB5  DC\_(n)41CA5  DC\_(n)41DA5 | DC\_(n)41AA | Yes3 |
| DC\_(n)41AB5  DC\_(n)41CA5  DC\_(n)41DA5 | DC\_41A\_n41A | Yes3 |
| DC\_(n)48AA5 | DC\_(n)48AA6 | Yes6 |
| DC\_(n)48CA5 | DC\_(n)48AA6  DC\_48A\_n48A6 | Yes6 |
| DC\_(n)48DA5 | DC\_(n)48AA6  DC\_48A\_n48A6 | Yes6 |
| DC\_(n)71AA2 | DC\_(n)71AA | No4 |
| NOTE 1: Uplink EN-DC configurations are the configurations supported by the present release of specifications.  NOTE 2: Requirements in this specification apply for NR SCS of 15 kHz only.  NOTE 3: Single UL allowed due to potential emission issues, not self-interference.  NOTE 4: For UE(s) supporting dynamic power sharing it is mandatory to do dual simultaneous UL. For UE(s) not supporting dynamic power sharing single UL is allowed.  NOTE 5: The minimum requirements only apply for non-simultaneous Tx/Rx between all carriers.  NOTE 6: Only single switched UL is supported | | |

### 5.5B.3 Intra-band non-contiguous EN-DC

Table 5.5B.3-1: Intra-band non-contiguous EN-DC configurations

|  |  |  |
| --- | --- | --- |
| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) | Single UL allowed |
| DC\_2A\_n2A | DC\_2A\_n2A5 | Yes5 |
| DC\_3A\_n3A | DC\_3A\_n3A2 | Yes2 |
| DC\_5A\_n5A | DC\_5A\_n5A5 | Yes5 |
| DC\_7A\_n7A6 | DC\_7A\_n7A5 | Yes5 |
| DC\_41A\_n41A3  DC\_41C\_n41A3  DC\_41D\_n41A3 | DC\_41A\_n41A | Yes4 |
| DC\_48A\_n48A3 | DC\_48A\_n48A5 | Yes5 |
| DC\_48A\_(n)48AA3 | DC\_(n)48AA5  DC\_48A\_n48A5 | Yes5 |
| DC\_48A-48A\_n48A3 | DC\_48A\_n48A5 | Yes5 |
| DC\_48C\_n48A3 | DC\_48A\_n48A5 | Yes5 |
| DC\_48D\_n48A3 | DC\_48A\_n48A5 | Yes5 |
| DC\_66A\_n66A | DC\_66A\_n66A5 | Yes5 |
| NOTE 1: Uplink EN-DC configurations are the configurations supported by the present release of specifications.  NOTE 2: Only single switched UL is supported in Rel.15  NOTE 3: The minimum requirements only apply for non-simultaneous Tx/Rx between all carriers.  NOTE 4: Single UL allowed due to potential emission issues, not self-interference.  NOTE 5: Only single switched UL is supported.  NOTE 6: Requirements in this specification apply for NR SCS of 15 kHz only. | | |

### 5.5B.4 Inter-band EN-DC within FR1

#### 5.5B.4.1 Inter-band EN-DC configurations within FR1 (two bands)

Table 5.5B.4.1-1: Inter-band EN-DC configurations within FR1 (two bands)

| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) | Single UL allowed |
| --- | --- | --- |
| DC\_1A\_n3A  DC\_1C\_n3A | DC\_1A\_n3A  DC\_1C\_n3A | DC\_1\_n3 |
| DC\_1A\_n5A | DC\_1A\_n5A | No |
| DC\_1A\_n7A  DC\_1A\_n7B | DC\_1A\_n7A | No |
| DC\_1A-1A\_n7A  DC\_1A-1A\_n7B | DC\_1A\_n7A | No |
| DC\_1A\_n8A | DC\_1A\_n8A | No |
| DC\_1A\_n20A | DC\_1A\_n20A | No |
| DC\_1A\_n28A | DC\_1A\_n28A | No |
| DC\_1A\_n38A  DC\_1C\_n38A | DC\_1A\_n38A | No |
| DC\_1A\_n40A | DC\_1A\_n40A | No |
| DC\_1A\_n41A | DC\_1A\_n41A | No |
| DC\_1A\_n50A | DC\_1A\_n50A | No |
| DC\_1A\_n51A | DC\_1A\_n51A | No |
| DC\_1A\_n71A  DC\_1A\_n71B | DC\_1A\_n71A | No |
| DC\_1A\_n77A7  DC\_1A\_n77C7 | DC\_1A\_n77A | DC\_1\_n77 |
| DC\_1A\_n77(2A) | DC\_1A\_n77A | DC\_1\_n77 |
| DC\_1A\_n78A7  DC\_1A\_n78C7 | DC\_1A\_n78A | No |
| DC\_1A\_n78(2A)7 | DC\_1A\_n78A | No |
| DC\_1A\_n79A7  DC\_1A\_n79C7 | DC\_1A\_n79A | No |
| DC\_2A\_n5A | DC\_2A\_n5A | No |
| DC\_2A-2A\_n5A | DC\_2A\_n5A | No |
| DC\_2A\_n7A | DC\_2A\_n7A | No |
| DC\_2A\_n7(2A) | DC\_2A\_n7A | No |
| DC\_2A\_n12A | DC\_2A\_n12A | No |
| DC\_2A\_n38A | DC\_2A\_n38A | No |
| DC\_2A-2A\_n38A | DC\_2A\_n38A | No |
| DC\_2A\_n41A  DC\_2A\_n41C  DC\_2C\_n41A | DC\_2A\_n41A  DC\_2C\_n41A | No |
| DC\_2A-2A\_n41A  DC\_2A\_n41(2A) | DC\_2A\_n41A | No |
| DC\_2A\_n48A  DC\_2A\_n48B | DC\_2A\_n48A | No |
| DC\_2A\_n66A | DC\_2A\_n66A | DC\_2\_n66 |
| DC\_2A-2A\_n66A | DC\_2A\_n66A | DC\_2\_n66 |
| DC\_2A\_n71A  DC\_2A\_n71B  DC\_2C\_n71A | DC\_2A\_n71A  DC\_2C\_n71A | No |
| DC\_2A-2A\_n71A | DC\_2A\_n71A | No |
| DC\_2A\_n78A | DC\_2A\_n78A | DC\_2\_n78 |
| DC\_2A\_n78(2A) | DC\_2A\_n78A | DC\_2\_n78 |
| DC\_2A-2A\_n78A | DC\_2A\_n78A | DC\_2\_n78 |
| DC\_3A\_n1A  DC\_3C\_n1A | DC\_3A\_n1A  DC\_3C\_n1A | DC\_3\_n1 |
| DC\_3A-3A\_n1A | DC\_3A\_n1A | DC\_3\_n1 |
| DC\_3A\_n5A  DC\_3C\_n5A | DC\_3A\_n5A  DC\_3C\_n5A | DC\_3\_n5 |
| DC\_3A\_n7A  DC\_3A\_n7B  DC\_3C\_n7A  DC\_3C\_n7B | DC\_3A\_n7A  DC\_3A\_n7B  DC\_3C\_n7A | No |
| DC\_3A-3A\_n7A  DC\_3A-3A\_n7B | DC\_3A\_n7A | No |
| DC\_3A\_n8A | DC\_3A\_n8A | No |
| DC\_3A\_n20A | DC\_3A\_n20A | No |
| DC\_3A\_n28A  DC\_3C\_n28A | DC\_3A\_n28A  DC\_3C\_n28A | No |
| DC\_3A\_n34A | DC\_3A\_n34A | No |
| DC\_3A\_n38A  DC\_3C\_n38A | DC\_3A\_n38A | No |
| DC\_3A\_n40A | DC\_3A\_n40A | No |
| DC\_3A\_n41A  DC\_3C\_n41A | DC\_3A\_n41A  DC\_3C\_n41A | DC\_3\_n41 |
| DC\_3A\_n50A | DC\_3A\_n50A | No |
| DC\_3A\_n51A | DC\_3A\_n51A | No |
| DC\_3A\_n71A  DC\_3A\_n71B | DC\_3A\_n71A | No |
| DC\_3A\_n77A7  DC\_3A\_n77C7 | DC\_3A\_n77A | DC\_3\_n77 |
| DC\_3A\_n77(2A)7 | DC\_3A\_n77A | DC\_3\_n77 |
| DC\_3A-3A\_n77A | DC\_3A\_n77A | DC\_3\_n77 |
| DC\_3A\_n78A7  DC\_3A\_n78C7  DC\_3C\_n78A7 | DC\_3A\_n78A | DC\_3\_n78 |
| DC\_3A\_n78(2A)7  DC\_3C\_n78(2A)7 | DC\_3A\_n78A | DC\_3\_n78 |
| DC\_3A-3A\_n78A | DC\_3A\_n78A | DC\_3\_n78 |
| DC\_3A\_n79A7  DC\_3A\_n79C7  DC\_3C\_n79A7 | DC\_3A\_n79A  DC\_3C\_n79A | No |
| DC\_4A\_n38A | DC\_4A\_n38A | No |
| DC\_4A\_n41A | DC\_4A\_n41A | No |
| DC\_4A\_n78A | DC\_4A\_n78A | No |
| DC\_4A\_n78(2A) | DC\_4A\_n78A | No |
| DC\_5A\_n2A  DC\_5B\_n2A | DC\_5A\_n2A | No |
| DC\_5A-5A\_n2A | DC\_5A\_n2A | No |
| DC\_5A\_n7A | DC\_5A\_n7A | DC\_5\_n7 |
| DC\_5A\_n7(2A) | DC\_5A\_n7A | DC\_5\_n7 |
| DC\_5A\_n12A | DC\_5A\_n12A | No |
| DC\_5A\_n38A | DC\_5A\_n38A | DC\_5\_n38 |
| DC\_5A\_n40A | DC\_5A\_n40A | No |
| DC\_5A\_n48A  DC\_5A\_n48B | DC\_5A\_n48A | No |
| DC\_5A\_n66A  DC\_5B\_n66A | DC\_5A\_n66A | DC\_5\_n66 |
| DC\_5A-5A\_n66A | DC\_5A\_n66A | DC\_5\_n66 |
| DC\_5A\_n71A | DC\_5A\_n71A | No |
| DC\_5A\_n78A7 | DC\_5A\_n78A | No |
| DC\_5A\_n78(2A)7 | DC\_5A\_n78A | No |
| DC\_5A\_n79A | DC\_5A\_n79A | No |
| DC\_7A\_n1A  DC\_7C\_n1A | DC\_7A\_n1A  DC\_7C\_n1A | No |
| DC\_7A-7A\_n1A | DC\_7A\_n1A | No |
| DC\_7A\_n3A  DC\_7C\_n3A | DC\_7A\_n3A  DC\_7C\_n3A | No |
| DC\_7A\_n5A  DC\_7C\_n5A | DC\_7A\_n5A  DC\_7C\_n5A | DC\_7\_n5 |
| DC\_7A-7A\_n5A | DC\_7A\_n5A | DC\_7\_n5 |
| DC\_7A\_n8A | DC\_7A\_n8A | No |
| DC\_7A-7A\_n78A7 | DC\_7A\_n78A | No |
| DC\_7A-7A\_n78(2A)7 | DC\_7A\_n78A | No |
| DC\_7A\_n20A | DC\_7A\_n20A | No |
| DC\_7A\_n28A  DC\_7C\_n28A | DC\_7A\_n28A  DC\_7C\_n28A | No |
| DC\_7A\_n40A | DC\_7A\_n40A | Yes |
| DC\_7A\_n51A | DC\_7A\_n51A | No |
| DC\_7A\_n66A  DC\_7C\_n66A | DC\_7A\_n66A | No |
| DC\_7A-7A\_n66A | DC\_7A\_n66A | No |
| DC\_7A\_n71A | DC\_7A\_n71A | No |
| DC\_7A\_n77A | DC\_7A\_n77A | No |
| DC\_7A-7A\_n77A | DC\_7A\_n77A | No |
| DC\_7A\_n78A7  DC\_7C\_n78A7 | DC\_7A\_n78A  DC\_7C\_n78A | No |
| DC\_7A\_n78(2A)7  DC\_7C\_n78(2A)7 | DC\_7A\_n78A  DC\_7C\_n78A | No |
| DC\_8A\_n1A | DC\_8A\_n1A | No |
| DC\_8A\_n3A | DC\_8A\_n3A | No |
| DC\_8A\_n20A | DC\_8A\_n20A | Yes |
| DC\_8A\_n28A | DC\_8A\_n28A | No |
| DC\_8A\_n34A | DC\_8A\_n34A | No |
| DC\_8A\_n39A | DC\_8A\_n39A | No |
| DC\_8A\_n40A7 | DC\_8A\_n40A | No |
| DC\_8A\_n41A  DC\_8A\_n41C | DC\_8A\_n41A | No |
| DC\_8A\_n41(2A) | DC\_8A\_n41A | No |
| DC\_8A\_n77A7 | DC\_8A\_n77A | No |
| DC\_8A\_n77(2A)7 | DC\_8A\_n77A | No |
| DC\_8A\_n78A7 | DC\_8A\_n78A | No |
| DC\_8A\_n79A7  DC\_8A\_n79C | DC\_8A\_n79A  DC\_8A\_n79C | No |
| DC\_8A\_n93A | DC\_8A\_n93A\_ULSUP-TDM | N/A |
| DC\_8A\_n94A | DC\_8A\_n94A\_ULSUP-TDM | N/A |
| DC\_11A\_n3A | DC\_11A\_n3A | No |
| DC\_11A\_n28A | DC\_11A\_n28A | No |
| DC\_11A\_n77A7 | DC\_11A\_n77A | No |
| DC\_11A\_n77(2A)7 | DC\_11A\_n77A | No |
| DC\_11A\_n78A7 | DC\_11A\_n78A | No |
| DC\_11A\_n79A7 | DC\_11A\_n79A | No |
| DC\_12A\_n2A | DC\_12A\_n2A | No |
| DC\_12A\_n5A | DC\_12A\_n5A | No |
| DC\_12A\_n7A  DC\_12A\_n7(2A) | DC\_12A\_n7A | No |
| DC\_12A\_n25A | DC\_12A\_n25A | No |
| DC\_12A\_n38A | DC\_12A\_n38A | No |
| DC\_12A\_n41A | DC\_12A\_n41A | No |
| DC\_12A\_n66A | DC\_12A\_n66A | No |
| DC\_12A\_n78A  DC\_12A\_n78(2A) | DC\_12A\_n78A | DC\_12\_n78 |
| DC\_13A\_n2A | DC\_13A\_n2A | No |
| DC\_13A\_n5A | DC\_13A\_n5A | DC\_13\_n5 |
| DC\_13A\_n7A  DC\_13A\_n7(2A) | DC\_13A\_n7A | No |
| DC\_13A\_n48A  DC\_13A\_n48B | DC\_13A\_n48A | No |
| DC\_13A\_n66A | DC\_13A\_n66A | No |
| DC\_13A\_n71A | DC\_13A\_n71A | No |
| DC\_13A\_n78A  DC\_13A\_n78(2A) | DC\_13A\_n78A | No |
| DC\_14A\_n2A | DC\_14A\_n2A | No |
| DC\_14A\_n66A | DC\_14A\_n66A | No |
| DC\_18A\_n3A | DC\_18A\_n3A | No |
| DC\_18A\_n77A7 | DC\_18A\_n77A | No |
| DC\_18A\_n78A7 | DC\_18A\_n78A | No |
| DC\_20A\_n91A | DC\_20A\_n91A\_ULSUP-TDM | N/A |
| DC\_20A\_n92A | DC\_20A\_n92A\_ULSUP-TDM | N/A |
| DC\_18A\_n79A7 | DC\_18A\_n79A | No |
| DC\_19A\_n77A7  DC\_19A\_n77C7 | DC\_19A\_n77A | No |
| DC\_19A\_n78A7  DC\_19A\_n78C7 | DC\_19A\_n78A | No |
| DC\_19A\_n79A7  DC\_19A\_n79C7 | DC\_19A\_n79A | No |
| DC\_20A\_n1A | DC\_20A\_n1A | No |
| DC\_20A\_n3A | DC\_20A\_n3A | No |
| DC\_20A\_n7A | DC\_20A\_n7A | DC\_20\_n7 |
| DC\_20A\_n8A | DC\_20A\_n8A | DC\_20\_n8 |
| DC\_20A\_n28A8,10,11,13 | DC\_20A\_n28A | No |
| DC\_20A\_n38A | DC\_20A\_n38A | No |
| DC\_20A\_n41A | DC\_20A\_n41A | DC\_20\_n41 |
| DC\_20A\_n50A | DC\_20A\_n50A | No |
| DC\_20A\_n51A | DC\_20A\_n51A | No |
| DC\_20A\_n77A7 | DC\_20A\_n77A | No |
| DC\_20A\_n78A7 | DC\_20A\_n78A | No |
| DC\_20A\_n78(2A)7 | DC\_20A\_n78A | No |
| DC\_21A\_n77A7  DC\_21A\_n77C7 | DC\_21A\_n77A | No |
| DC\_21A\_n78A7  DC\_21A\_n78C7 | DC\_21A\_n78A | No |
| DC\_21A\_n79A7  DC\_21A\_n79C7 | DC\_21A\_n79A | No |
| DC\_25A\_n41A | DC\_25A\_n41A | No |
| DC\_25A-25A\_n41A | DC\_25A\_n41A | No |
| DC\_26A\_n25A | DC\_26A\_n25A | No |
| DC\_26A\_n41A | DC\_26A\_n41A | No |
| DC\_26A\_n77A7 | DC\_26A\_n77A | No |
| DC\_26A\_n78A7 | DC\_26A\_n78A | No |
| DC\_26A\_n79A7 | DC\_26A\_n79A | No |
| DC\_28A\_n3A | DC\_28A\_n3A | No |
| DC\_28A\_n5A8 | DC\_28A\_n5A | No |
| DC\_28A\_n7A  DC\_28A\_n7B | DC\_28A\_n7A  DC\_28A\_n7B | No |
| DC\_28A\_n51A | DC\_28A\_n51A | No |
| DC\_28A\_n8A | DC\_28A\_n8A | No |
| DC\_28A\_n40A | DC\_28A\_n40A | No |
| DC\_28A\_n41A | DC\_28A\_n41A | No |
| DC\_28A\_n50A | DC\_28A\_n50A | No |
| DC\_28A\_n77A7  DC\_28A\_n77C7 | DC\_28A\_n77A | No |
| DC\_28A\_n77(2A)7 | DC\_28A\_n77A | No |
| DC\_28A\_n78A7  DC\_28A\_n78C7 | DC\_28A\_n78A | No |
| DC\_28A\_n78(2A) | DC\_28A\_n78A | No |
| DC\_28A\_n79A7  DC\_28A\_n79C7 | DC\_28A\_n79A | No |
| DC\_30A\_n2A | DC\_30A\_n2A | No |
| DC\_30A\_n5A | DC\_30A\_n5A | No |
| DC\_30A\_n66A | DC\_30A\_n66A | No |
| DC\_38A\_n78A7 | DC\_38A\_n78A | No |
| DC\_39A\_n40A3 | DC\_39A\_n40A | No |
| DC\_39A\_n41A  DC\_39C\_n41A | DC\_39A\_n41A  DC\_39C\_n41A | No |
| DC\_39A\_n78A5,7 | DC\_39A\_n78A | No |
| DC\_39A\_n79A7  DC\_39A\_n79C7 | DC\_39A\_n79A | No |
| DC\_40A\_n1A | DC\_40A\_n1A | No |
| DC\_40A\_n41A3  DC\_40C\_n41A3 | DC\_40A\_n41A | No |
| DC\_40A\_n77A | DC\_40A\_n77A | No |
| DC\_40A\_n78A  DC\_40C\_n78A | DC\_40A\_n78A  DC\_40C\_n78A | No |
| DC\_40A\_n79A7,12  DC\_40C\_n79A7,12 | DC\_40A\_n79A | No |
| DC\_41A\_n3A  DC\_41C\_n3A | DC\_41A\_n3A  DC\_41C\_n3A | No |
| DC\_41A\_n28A  DC\_41C\_n28A | DC\_41A\_n28A  DC\_41C\_n28A | No |
| DC\_41A\_n77A  DC\_41C\_n77A | DC\_41A\_n77A  DC\_41C\_n77A | No |
| DC\_41A\_n77(2A)  DC\_41C\_n77(2A) | DC\_41A\_n77A  DC\_41C\_n77A | No |
| DC\_41A\_n78A  DC\_41C\_n78A  DC\_41D\_n78A | DC\_41A\_n78A  DC\_41C\_n78A | No |
| DC\_41A\_n78(2A)  DC\_41C\_n78(2A) | DC\_41A\_n78A  DC\_41C\_n78A | No |
| DC\_41A\_n79A6,7  DC\_41A\_n79C6,7  DC\_41C\_n79A6,7 | DC\_41A\_n79A  DC\_41C\_n79A | No |
| DC\_42A\_n28A  DC\_42C\_n28A | DC\_42A\_n28A  DC\_42C\_n28A | No |
| DC\_42A\_n51A | DC\_42A\_n51A | No |
| DC\_42A\_n77A3,4,9,11  DC\_42A\_n77C3,4,9,11  DC\_42C\_n77A3,4,9,11  DC\_42C\_n77C3,4,9,11  DC\_42D\_n77A3,4,9,11  DC\_42D\_n77C  DC\_42E\_n77A3,4,9,11  DC\_42E\_n77C | N/A | N/A |
| DC\_42A\_n77(2A)3,4,9,11  DC\_42C\_n77(2A)3,4,9,11 | N/A | N/A |
| DC\_42A\_n78A3,4,9,11  DC\_42A\_n78C3,4,9,11  DC\_42C\_n78A3,4,9,11  DC\_42C\_n78C3,4,9,11  DC\_42D\_n78A3,4,9,11  DC\_42D\_n78C  DC\_42E\_n78A3,4,9,11  DC\_42E\_n78C | N/A | N/A |
| DC\_42A\_n79A9  DC\_42A\_n79C9  DC\_42C\_n79A9  DC\_42C\_n79C9  DC\_42D\_n79A9  DC\_42D\_n79C  DC\_42E\_n79A9  DC\_42E\_n79C | N/A | N/A |
| DC\_46A\_n78A2  DC\_46C\_n78A2  DC\_46D\_n78A2  DC\_46E\_n78A2 | N/A | N/A |
| DC\_48A\_n5A | DC\_48A\_n5A | No |
| DC\_48A\_n12A | DC\_48A\_n12A | No |
| DC\_48A\_n66A | DC\_48A\_n66A | No |
| DC\_48A\_n71A  DC\_48B\_n71A  DC\_48C\_n71A  DC\_48D\_n71A | DC\_48A\_n71A | No |
| DC\_48A-48A\_n71A  DC\_48A-48A-48A\_n71A | DC\_48A\_n71A | No |
| DC\_66A\_n2A | DC\_66A\_n2A | DC\_66\_n2 |
| DC\_66A-66A\_n2A | DC\_66A\_n2A | DC\_66\_n2 |
| DC\_66A\_n5A  DC\_66B\_n5A  DC\_66C\_n5A | DC\_66A\_n5A | DC\_66\_n5 |
| DC\_66A-66A\_n5A  DC\_66A-66A-66A\_n5A | DC\_66A\_n5A | DC\_66\_n5 |
| DC\_66A\_n7A  DC\_66A-66A\_n7A  DC\_66A\_n7(2A)  DC\_66A-66A\_n7(2A) | DC\_66A\_n7A | No |
| DC\_66A\_n12A | DC\_66A\_n12A | No |
| DC\_66A\_n25A | DC\_66A\_n25A | DC\_66\_n25 |
| **DC\_66A\_n38A** | DC\_66A\_n38A | No |
| DC\_66A-66A\_n38A | DC\_66A\_n38A | No |
| DC\_66A\_n41A  DC\_66A\_n41C | DC\_66A\_n41A | No |
| DC\_66A\_n41(2A) | DC\_66A\_n41A | No |
| DC\_66A\_n48A  DC\_66A\_n48B | DC\_66A\_n48A | No |
| DC\_66A-66A\_n48A  DC\_66A-66A\_n48B | DC\_66A\_n48A | No |
| DC\_66A\_n71A  DC\_66C\_n71A  DC\_66A\_n71B | DC\_66A\_n71A | No |
| DC\_66A-66A\_n71A | DC\_66A-66A\_n71A | DC\_66A-66A\_n71A |
| DC\_66A\_n78A | DC\_66A\_n78A | No |
| DC\_66A\_n78(2A) | DC\_66A\_n78A | No |
| DC\_66A-66A\_n78A | DC\_66A\_n78A | No |
| DC\_66A-66A\_n78(2A) | DC\_66A\_n78A | No |
| DC\_71A\_n5A | DC\_71A\_n5A | No |
| DC\_71A\_n38A | DC\_71A\_n38A | No |
| DC\_71A\_n48A | DC\_71A\_n48A |  |
| DC\_71A\_n66A | DC\_71A\_n66A | No |
| DC\_71A\_n78A | DC\_71A\_n78A | No |
| NOTE 1: Uplink EN-DC configurations are the configurations supported by the present release of specifications.  NOTE 2: Restricted to E-UTRA operation when inter-band carrier aggregation is configured. The downlink operating band for Band 46 is paired with the uplink operating band (external E-UTRA band) of the carrier aggregation configuration that is supporting the configured Pcell.  NOTE 3: The minimum requirements apply only when there is non-simultaneous Tx/Rx operation between E-UTRA and NR carriers. This restriction applies also for these carriers when applicable EN-DC configuration is part of a higher order EN-DC configuration.  NOTE 4: The minimum requirements for intra-band contiguous or non-contiguous EN-DC apply. The intra-band requirements also apply for these carriers when applicable EN-DC configuration is a subset of a higher order EN-DC configuration.  NOTE 5: The frequency range above 3600 MHz for Band n78 is not used in this combination.  NOTE 6: The frequency range below 2506 MHz for Band 41 is not used in this combination.  NOTE 7: Applicable for UE supporting inter-band EN-DC with mandatory simultaneous Rx/Tx capability.  NOTE 8: The frequency range in band n28 is restricted for this band combination to 703 - 733 MHz for the UL and 758-788 MHz for the DL.  NOTE 9: The combination is not used alone as fall back mode of other band combinations in which UL in Band 42 is not used.  NOTE 10: The maximum power spectral density imbalance between downlink carriers is within [6] dB. The power spectral density imbalance condition also applies for these carriers when applicable EN-DC configuration is a subset of a higher order EN-DC configuration.  NOTE 11: The minimum requirements for inter-band EN-DC apply when the maximum power spectral density imbalance between downlink carriers is within [6] dB. The power spectral density imbalance condition also applies for these carriers when applicable EN-DC configuration is a subset of a higher order EN-DC configuration.  NOTE 12: Applicable for frequency range above 4800 MHz for Band n79 in this combination.  NOTE 13: The minimum requirements apply for synchronized DL carriers with a maximum receive time difference ≤ 3 usec. The requirements also apply for these carriers when applicable EN-DC configuration is a subset of a higher order EN-DC configuration. | | |

## << Third of changes >>

#### 5.5B.5.1 Inter-band EN-DC configurations including FR2 (two bands)

Table 5.5B.5.1-1: Inter-band EN-DC configurations including FR2 (two bands)

|  |  |
| --- | --- |
| EN-DC  configuration | Uplink EN-DC  configuration  (NOTE 1) |
| DC\_1A\_n257A  DC\_1A\_n257D DC\_1A\_n257E DC\_1A\_n257F  DC\_1A\_n257G  DC\_1A\_n257H  DC\_1A\_n257I  DC\_1A\_n257J  DC\_1A\_n257K  DC\_1A\_n257L  DC\_1A\_n257M | DC\_1A\_n257A  DC\_1A\_n257D  DC\_1A\_n257G  DC\_1A\_n257H  DC\_1A\_n257I  DC\_1A\_n257J  DC\_1A\_n257K  DC\_1A\_n257L  DC\_1A\_n257M |
| DC\_1A\_n258A  DC\_1A\_n258D | DC\_1A\_n258A  DC\_1A\_n258D |
| DC\_2A\_n257A  DC\_2C\_n257A | DC\_2A\_n257A |
| DC\_2A\_n257(2A) | DC\_2A\_n257A |
| DC\_2A-2A\_n257A | DC\_2A\_n257A |
| DC\_2A\_n258A | DC\_2A\_n258A |
| DC\_2A\_n258(2A)  DC\_2A\_n258(3A)  DC\_2A\_n258(4A)  DC\_2A\_n258(5A) | DC\_2A\_n258A |
| DC\_2A\_n260A  DC\_2A\_n260G  DC\_2A\_n260H  DC\_2A\_n260I  DC\_2A\_n260J  DC\_2A\_n260K  DC\_2A\_n260L  DC\_2A\_n260M  DC\_2A\_n260O  DC\_2A\_n260P  DC\_2A\_n260Q  DC\_2C\_n260A | DC\_2A\_n260A  DC\_2A\_n260G  DC\_2A\_n260H  DC\_2A\_n260O  DC\_2A\_n260P  DC\_2A\_n260Q |
| DC\_2A\_n260(2A)  DC\_2A\_n260(3A)  DC\_2A\_n260(4A)  DC\_2A\_n260(5A)  DC\_2A\_n260(6A)  DC\_2A\_n260(7A)  DC\_2A\_n260(8A)  DC\_2A\_n260(2D)  DC\_2A\_n260(2G)  DC\_2A\_n260(3G)  DC\_2A\_n260(4G)  DC\_2A\_n260(2H)  DC\_2A\_n260(2O)  DC\_2A\_n260(3O)  DC\_2A\_n260(4O)  DC\_2A\_n260(A-G)  DC\_2A\_n260(A-H)  DC\_2A\_n260(A-P)  DC\_2A\_n260(A-Q)  DC\_2A\_n260(A-2G)  DC\_2A\_n260(A-2H)  DC\_2A\_n260(2A-G)  DC\_2A\_n260(2A-H)  DC\_2A\_n260(2A-2G)  DC\_2A\_n260(2A-2H)  DC\_2A\_n260(3A-G)  DC\_2A\_n260(3A-O)  DC\_2A\_n260(3A-2O)  DC\_2A\_n260(3A-P)  DC\_2A\_n260(4A-O)  DC\_2A\_n260(4A-2O)  DC\_2A\_n260(G-H)  DC\_2A\_n260(P-Q)  DC\_2A\_n260(A-P-Q)  DC\_2A\_n260(2A-O-P)  DC\_2A\_n260(3A-O-P) | DC\_2A\_n260A  DC\_2A\_n260G  DC\_2A\_n260H  DC\_2A\_n260O  DC\_2A\_n260P  DC\_2A\_n260Q |
| DC\_2A-2A\_n260A  DC\_2A-2A\_n260G  DC\_2A-2A\_n260H  DC\_2A-2A\_n260I  DC\_2A-2A\_n260J  DC\_2A-2A\_n260K  DC\_2A-2A\_n260L  DC\_2A-2A\_n260M | DC\_2A\_n260A |
| DC\_2A\_n261A  DC\_2A\_n261(2A)  DC\_2A\_n261(3A)  DC\_2A\_n261(4A) | DC\_2A\_n261A |
| DC\_2A\_n261G  DC\_2A\_n261H  DC\_2A\_n261I  DC\_2A\_n261J  DC\_2A\_n261K  DC\_2A\_n261L  DC\_2A\_n261M | DC\_2A\_n261A  DC\_2A\_n261G  DC\_2A\_n261H  DC\_2A\_n261I |
| DC\_2A\_n261(2I)  DC\_2A\_n261(2H)  DC\_2A\_n261(A-G)  DC\_2A\_n261(A-J)  DC\_2A\_n261(A-K)  DC\_2A\_n261(A-2G)  DC\_2A\_n261(A-H)  DC\_2A\_n261(A-I)  DC\_2A\_n261(2A-G)  DC\_2A\_n261(2A-I)  DC\_2A\_n261(2A-H)  DC\_2A\_n261(3A-G)  DC\_2A\_n261(G-H)  DC\_2A\_n261(G-I)  DC\_2A\_n261(G-J)  DC\_2A\_n261(2G)  DC\_2A\_n261(H-I)  DC\_2A\_n261(A-G-H)  DC\_2A\_n261(A-G-I) | DC\_2A\_n261A  DC\_2A\_n261G  DC\_2A\_n261H  DC\_2A\_n261I |
| DC\_3A\_n257A  DC\_3A\_n257B  DC\_3A\_n257C  DC\_3A\_n257D  DC\_3A\_n257E  DC\_3A\_n257F  DC\_3A\_n257G  DC\_3A\_n257H  DC\_3A\_n257I  DC\_3A\_n257J  DC\_3A\_n257K  DC\_3A\_n257L  DC\_3A\_n257M  DC\_3C\_n257A  DC\_3C\_n257D  DC\_3C\_n257E  DC\_3C\_n257F  DC\_3C\_n257G  DC\_3C\_n257H  DC\_3C\_n257I  DC\_3C\_n257J  DC\_3C\_n257K  DC\_3C\_n257L  DC\_3C\_n257M | DC\_3A\_n257A  DC\_3A\_n257B  DC\_3A\_n257D  DC\_3A\_n257G  DC\_3A\_n257H  DC\_3A\_n257I  DC\_3A\_n257J  DC\_3A\_n257K  DC\_3A\_n257L  DC\_3A\_n257M  DC\_3C\_n257A |
| DC\_3A\_n258A  DC\_3A\_n258B  DC\_3A\_n258C  DC\_3A\_n258D  DC\_3A\_n258E  DC\_3A\_n258F  DC\_3A\_n258G  DC\_3A\_n258H  DC\_3A\_n258I  DC\_3A\_n258J  DC\_3A\_n258K  DC\_3A\_n258L  DC\_3A\_n258M | DC\_3A\_n258A |
| DC\_3A-3A\_n257A  DC\_3A-3A\_n257D  DC\_3A-3A\_n257E  DC\_3A-3A\_n257F  DC\_3A-3A\_n257G  DC\_3A-3A\_n257H  DC\_3A-3A\_n257I  DC\_3A-3A\_n257J  DC\_3A-3A\_n257K  DC\_3A-3A\_n257L  DC\_3A-3A\_n257M | DC\_3A\_n257A |
| DC\_4A\_n260(2A)  DC\_4A\_n260(3A)  DC\_4A\_n260(4A)  DC\_4A\_n260(5A)  DC\_4A\_n260(6A)  DC\_4A\_n260(7A)  DC\_4A\_n260(8A)  DC\_4A\_n260(2D)  DC\_4A\_n260(2G)  DC\_4A\_n260(3G)  DC\_4A\_n260(4G)  DC\_4A\_n260(2H)  DC\_4A\_n260(2O)  DC\_4A\_n260(3O)  DC\_4A\_n260(4O)  DC\_4A\_n260(A-D)  DC\_4A\_n260(2A-D)  DC\_4A\_n260(A-O)  DC\_4A\_n260(2A-O)  DC\_4A\_n260(A-D-O)  DC\_4A\_n260(2A-D-O)  DC\_4A\_n260(A-2O)  DC\_4A\_n260(D-2O)  DC\_4A\_n260(A-D-2O)  DC\_4A\_n260(2A-D-2O)  DC\_4A\_n260(A-2D)  DC\_4A\_n260(2A-2D)  DC\_4A\_n260(A-P)  DC\_4A\_n260(2A-P)  DC\_4A\_n260(A-2P)  DC\_4A\_n260(2A-2P)  DC\_4A\_n260(A-G)  DC\_4A\_n260(2A-G)  DC\_4A\_n260(A-2G)  DC\_4A\_n260(2A-2G)  DC\_4A\_n260(G-O)  DC\_4A\_n260(2G-O)  DC\_4A\_n260(A-G-O)  DC\_4A\_n260(2A-G-O)  DC\_4A\_n260(A-2G-O)  DC\_4A\_n260(2A-2G-O)  DC\_4A\_n260(A-H)  DC\_4A\_n260(A-2H)  DC\_4A\_n260(2A-H)  DC\_4A\_n260(2A-2H)  DC\_4A\_n260(2A-2O)  DC\_4A\_n260(A-3O)  DC\_4A\_n260(2A-3O)  DC\_4A\_n260(A-4O)  DC\_4A\_n260(2A-4O)  DC\_4A\_n260(3A-O)  DC\_4A\_n260(3A-2O)  DC\_4A\_n260(3A-3O)  DC\_4A\_n260(3A-G)  DC\_4A\_n260(3A-2G)  DC\_4A\_n260(4A-G)  DC\_4A\_n260(4A-2G)  DC\_4A\_n260(4A-O)  DC\_4A\_n260(4A-2O)  DC\_4A\_n260(D-2G)  DC\_4A\_n260(2D-O)  DC\_4A\_n260(G-2O)  DC\_4A\_n260(2G-2O)  DC\_4A\_n260(G-3O)  DC\_4A\_n260(2G-3O)  DC\_4A\_n260(G-4O)  DC\_4A\_n260(2G-4O)  DC\_4A\_n260(3G-O)  DC\_4A\_n260(4G-O)  DC\_4A\_n260(H-O)  DC\_4A\_n260(2H-O)  DC\_4A\_n260(A-P-Q)  DC\_4A\_n260(3A-O-P) | DC\_4A\_n260A  DC\_4A\_n260G  DC\_4A\_n260H  DC\_4A\_n260O  DC\_4A\_n260P  DC\_4A\_n260Q |
| DC\_4A\_n260G  DC\_4A\_n260H  DC\_4A\_n260O  DC\_4A\_n260P  DC\_4A\_n260Q | DC\_4A\_n260A  DC\_4A\_n260G  DC\_4A\_n260H  DC\_4A\_n260O  DC\_4A\_n260P  DC\_4A\_n260Q |
| DC\_4A\_n261(2A)  DC\_4A\_n261(3A)  DC\_4A\_n261(4A)  DC\_4A\_n261(2H)  DC\_4A\_n261(2I)  DC\_4A\_n261(A-D)  DC\_4A\_n261(A-H)  DC\_4A\_n261(A-2H)  DC\_4A\_n261(A-D-H)  DC\_4A\_n261(A-G)  DC\_4A\_n261(A-G-H)  DC\_4A\_n261(A-I)  DC\_4A\_n261(A-2I)  DC\_4A\_n261(G-I)  DC\_4A\_n261(A-G-I)  DC\_4A\_n261(A-H-I)  DC\_4A\_n261(G-H)  DC\_4A\_n261(H-I)  DC\_4A\_n261(D-H) | DC\_4A\_n261A  DC\_4A\_n261H  DC\_4A\_n261I  DC\_4A\_n261G |
| DC\_4A\_n261A  DC\_4A\_n261D  DC\_4A\_n261G  DC\_4A\_n261H  DC\_4A\_n261I  DC\_4A\_n261L  DC\_4A\_n261M | DC\_4A\_n261A  DC\_4A\_n261D  DC\_4A\_n261G  DC\_4A\_n261H  DC\_4A\_n261I |
| DC\_4A\_n260A | DC\_4A\_n260A |
| DC\_4A\_n260(A-Q)  DC\_4A\_n260(P-Q)  DC\_4A\_n260(2A-O-P)  DC\_4A\_n260(3A-P)  DC\_4A\_n260(A-O-P) | DC\_4A\_n260A  DC\_4A\_n260G  DC\_4A\_n260H  DC\_4A\_n260O  DC\_4A\_n260P  DC\_4A\_n260Q |
| DC\_5A\_n257A  DC\_5A\_n257D  DC\_5A\_n257E  DC\_5A\_n257F  DC\_5A\_n257G  DC\_5A\_n257H  DC\_5A\_n257I  DC\_5A\_n257J  DC\_5A\_n257K  DC\_5A\_n257L  DC\_5A\_n257M  DC\_5B\_n257A | DC\_5A\_n257A  DC\_5B\_n257A |
| DC\_5A-5A\_n257A | DC\_5A\_n257A |
| DC\_5A\_n258A | DC\_5A\_n258A |
| DC\_5A\_n260A  DC\_5A\_n260B  DC\_5A\_n260C  DC\_5A\_n260D  DC\_5A\_n260E  DC\_5A\_n260F  DC\_5A\_n260G  DC\_5A\_n260H  DC\_5A\_n260I  DC\_5A\_n260J  DC\_5A\_n260K  DC\_5A\_n260L  DC\_5A\_n260M  DC\_5A\_n260O  DC\_5A\_n260P  DC\_5A\_n260Q  DC\_5B\_n260A | DC\_5A\_n260A  DC\_5A\_n260G  DC\_5A\_n260H  DC\_5A\_n260O  DC\_5A\_n260P  DC\_5A\_n260Q  DC\_5B\_n260A |
| DC\_5A\_n260(2A)  DC\_5A\_n260(3A)  DC\_5A\_n260(4A)  DC\_5A\_260(5A)  DC\_5A\_260(6A)  DC\_5A\_260(7A)  DC\_5A\_260(8A)  DC\_5A\_260(9A)  DC\_5A\_260(10A)  DC\_5A\_n260(A-I)  DC\_5A\_n260(A-P-Q)  DC\_5A\_n260(3A-O-P)  DC\_5A\_n260(D-G)  DC\_5A\_n260(D-H)  DC\_5A\_n260(D-I)  DC\_5A\_n260(D-O)  DC\_5A\_n260(D-P)  DC\_5A\_n260(D-Q)  DC\_5A\_n260(E-O)  DC\_5A\_n260(E-P)  DC\_5A\_n260(E-Q)  DC\_5A\_n260(G-I)  DC\_5A\_n260(2G)  DC\_5A\_n260(2H)  DC\_5A\_n260(2O)  DC\_5A\_n260(3O)  DC\_5A\_n260(4O)  DC\_5A\_n260(2P)  DC\_5A\_n260(3P)  DC\_5A\_n260(4P)  DC\_5A\_n260(2A-O)  DC\_5A\_n260(A-2O)  DC\_5A\_n260(2A-G)  DC\_5A\_n260(A-2G)  DC\_5A\_n260(2A-2G)  DC\_5A\_n260(2G-O)  DC\_5A\_n260(2A-2G-O)  DC\_5A\_n260(A-2H)  DC\_5A\_n260(2A-H)  DC\_5A\_n260(2A-2H)  DC\_5A\_n260(2A-2O)  DC\_5A\_n260(2A-3O)  DC\_5A\_n260(A-4O)  DC\_5A\_n260(2A-4O)  DC\_5A\_n260(3A-2O)  DC\_5A\_n260(3A-2G)  DC\_5A\_n260(4A-G)  DC\_5A\_n260(4A-2G)  DC\_5A\_n260(4A-O)  DC\_5A\_n260(4A-2O)  DC\_5A\_n260(A-O)  DC\_5A\_n260(A-G)  DC\_5A\_n260(G-O)  DC\_5A\_n260(A-G-O)  DC\_5A\_n260(2A-G-O)  DC\_5A\_n260(A-2G-O)  DC\_5A\_n260(A-H)  DC\_5A\_n260(A-3O)  DC\_5A\_n260(3A-O)  DC\_5A\_n260(3A-G)  DC\_5A\_n260(2D)  DC\_5A\_n260(3G)  DC\_5A\_n260(4G)  DC\_5A\_n260(A-D)  DC\_5A\_n260(2A-D)  DC\_5A\_n260(A-D-O)  DC\_5A\_n260(2A-D-O)  DC\_5A\_n260(D-2O)  DC\_5A\_n260(A-D-2O)  DC\_5A\_n260(2A-D-2O)  DC\_5A\_n260(A-2D)  DC\_5A\_n260(2A-2D)  DC\_5A\_n260(A-P)  DC\_5A\_n260(2A-P)  DC\_5A\_n260(A-2P)  DC\_5A\_n260(2A-2P)  DC\_5A\_n260(3A-3O)  DC\_5A\_n260(D-2G)  DC\_5A\_n260(2D-O)  DC\_5A\_n260(G-2O)  DC\_5A\_n260(2G-2O)  DC\_5A\_n260(G-3O)  DC\_5A\_n260(2G-3O)  DC\_5A\_n260(G-4O)  DC\_5A\_n260(2G-4O)  DC\_5A\_n260(3G-O)  DC\_5A\_n260(4G-O)  DC\_5A\_n260(H-O)  DC\_5A\_n260(2H-O)  DC\_5A\_n260(A-Q)  DC\_5A\_n260(P-Q)  DC\_5A\_n260(2A-4O)  DC\_5A\_n260(2A-4P)  DC\_5A\_n260(2O-2P)  DC\_5A\_n260(3A-P)  DC\_5A\_n260(4A-4O)  DC\_5A\_n260(4A-2Q)  DC\_5A\_n260(6A-2O)  DC\_5A\_n260(6A-2P)  DC\_5A\_n260(6A-3O)  DC\_5A\_n260(8A-2O)  DC\_5A\_n260(2A-O-P)  DC\_5A\_n260(2A-2G-2O)  DC\_5A\_n260(2A-2O-2P)  DC\_5A\_n260(2A-2O-2Q)  DC\_5A\_n260(O-P)  DC\_5A\_n260(A-O-P)  DC\_5A-5A\_n260A | DC\_5A\_n260A  DC\_5A\_n260G  DC\_5A\_n260H  DC\_5A\_n260O  DC\_5A\_n260P  DC\_5A\_n260Q |
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| DC\_5A\_n261(2A)  DC\_5A\_n261(2G)  DC\_5A\_n261(3A)  DC\_5A\_n261(4A)  DC\_5A\_n261(D-G)  DC\_5A\_n261(D-H)  DC\_5A\_n261(D-I)  DC\_5A\_n261(D-O)  DC\_5A\_n261(D-P)  DC\_5A\_n261(D-Q)  DC\_5A\_n261(E-O)  DC\_5A\_n261(E-P)  DC\_5A\_n261(E-Q)  DC\_5A\_n261(2H)  DC\_5A\_n261(2I)  DC\_5A\_n261(A-H)  DC\_5A\_n261(A-I)  DC\_ 5A\_n261(2A-H)  DC\_5A\_n261(A-K)  DC\_5A\_n261(A-D)  DC\_5A\_n261(A-D-H)  DC\_5A\_n261(A-D-2O)  DC\_5A\_n261(A-G)  DC\_5A\_n261(A-G-H)  DC\_5A\_n261(G-I)  DC\_5A\_n261(A-G-I)  DC\_5A\_n261(A-H-I)  DC\_5A\_n261(G-H) DC\_5A\_n261(G-J)  DC\_5A\_n261(H-I)  DC\_5A\_n261(A-2D)  DC\_5A\_n261(A-2H)  DC\_5A\_n261(A-2P)  DC\_5A\_n261(A-2Q)  DC\_5A\_n261(A-2I)  DC\_5A\_n261(A-4G)  DC\_5A\_n261(A-4O)  DC\_5A\_n261(A-7O)  DC\_5A\_n261(A-2G-2O)  DC\_5A\_n261(A-3G-O)  DC\_5A\_n261(2A-G)  DC\_5A\_n261(2A-H)  DC\_5A\_n261(2A-I)  DC\_5A\_n261(3A-G) | DC\_5A\_n261A  DC\_5A\_n261G  DC\_5A\_n261H  DC\_5A\_n261I |
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| DC\_8A\_n258A | DC\_8A\_n258A |
| DC\_11A\_n257A  DC\_11A\_n257D  DC\_11A\_n257G  DC\_11A\_n257H  DC\_11A\_n257I | DC\_11A\_n257A |
| DC\_12A\_n257A | DC\_12A\_n257A |
| DC\_12A\_n258A | DC\_12A\_n258A |
| DC\_12A\_n260A  DC\_12A\_n260G  DC\_12A\_n260H  DC\_12A\_n260I  DC\_12A\_n260J  DC\_12A\_n260K  DC\_12A\_n260L  DC\_12A\_n260M | DC\_12A\_n260A |
| DC\_12A\_n260(A-I)  DC\_12A\_n260(G-I) | DC\_12A\_n260A |
| DC\_12A\_n261A | DC\_12A\_n261A |
| DC\_13A\_n257A | DC\_13A\_n257A |
| DC\_13A\_n260A  DC\_13A\_n260G  DC\_13A\_n260H  DC\_13A\_n260I  DC\_13A\_n260J  DC\_13A\_n260K  DC\_13A\_n260L  DC\_13A\_n260M  DC\_13A\_n260O  DC\_13A\_n260P  DC\_13A\_n260Q | DC\_13A\_n260A  DC\_13A\_n260G  DC\_13A\_n260H  DC\_13A\_n260O  DC\_13A\_n260P  DC\_13A\_n260Q |
| DC\_13A\_n260(2A)  DC\_13A\_n260(3A)  DC\_13A\_n260(4A)  DC\_13A\_n260(5A)  DC\_13A\_n260(6A)  DC\_13A\_n260(7A)  DC\_13A\_n260(8A)  DC\_13A\_n260(2D)  DC\_13A\_n260(2G)  DC\_13A\_n260(3G)  DC\_13A\_n260(4G)  DC\_13A\_n260(2H)  DC\_13A\_n260(2O)  DC\_13A\_n260(3O)  DC\_13A\_n260(4O)  DC\_13A\_n260(A-G)  DC\_13A\_n260(A-2G)  DC\_13A\_n260(A-P)  DC\_13A\_n260(A-Q)  DC\_13A\_n260(2A-G)  DC\_13A\_n260(2A-H)  DC\_13A\_n260(2A-2G)  DC\_13A\_n260(2A-2H)  DC\_13A\_n260(3A-G)  DC\_13A\_n260(3A-O)  DC\_13A\_n260(3A-P)  DC\_13A\_n260(3A-2O)  DC\_13A\_n260(4A-O)  DC\_13A\_n260(4A-2O)  DC\_13A\_n260(P-Q)  DC\_13A\_n260(A-P-Q)  DC\_13A\_n260(2A-O-P)  DC\_13A\_n260(3A-O-P)  DC\_13A\_n260(A-H)  DC\_13A\_n260(A-2H)  DC\_13A\_n260(2A-O)  DC\_13A\_n260(A-O)  DC\_13A\_n260(2A-P)  DC\_13A\_n260(A-O-P)  DC\_13A\_n260(O-P)  DC\_13A\_n260(2A-2O)  DC\_13A\_n260(A-2O)  DC\_13A\_n260(G-H) | DC\_13A\_n260A  DC\_13A\_n260G  DC\_13A\_n260H  DC\_13A\_n260O  DC\_13A\_n260P  DC\_13A\_n260Q |
| DC\_13A\_n261A  DC\_13A\_n261G  DC\_13A\_n261H  DC\_13A\_n261J  DC\_13A\_n261K  DC\_13A\_n261I  DC\_13A\_n261L  DC\_13A\_n261M | DC\_13A\_n261A  DC\_13A\_n261G  DC\_13A\_n261H  DC\_13A\_n261I |
| DC\_13A\_n261(2A)  DC\_13A\_n261(2G)  DC\_13A\_n261(3A)  DC\_13A\_n261(4A)  DC\_13A\_n261(2H)  DC\_13A\_n261(2I)  DC\_13A\_n261(A-G)  DC\_13A\_n261(A-K)  DC\_13A\_n261(A-2G)  DC\_13A\_n261(A-H)  DC\_13A\_n261(A-I)  DC\_13A\_n261(A-J)  DC\_13A\_n261(2A-G)  DC\_13A\_n261(2A-H)  DC\_13A\_n261(2A-I)  DC\_13A\_n261(3A-G)  DC\_13A\_n261(G-H)  DC\_13A\_n261(G-I)  DC\_13A\_n261(G-J)  DC\_13A\_n261(H-I)  DC\_13A\_n261(A-G-H)  DC\_13A\_n261(A-G-I) | DC\_13A\_n261A  DC\_13A\_n261G  DC\_13A\_n261H  DC\_13A\_n261I |
| DC\_14A\_n260A  DC\_14A\_n260G  DC\_14A\_n260H  DC\_14A\_n260I  DC\_14A\_n260J  DC\_14A\_n260K  DC\_14A\_n260L  DC\_14A\_n260M | DC\_14A\_n260A  DC\_14A\_n260G  DC\_14A\_n260H  DC\_14A\_n260I  DC\_14A\_n260J  DC\_14A\_n260K  DC\_14A\_n260L  DC\_14A\_n260M |
| DC\_18A\_n257A  DC\_18A\_n257D  DC\_18A\_n257E  DC\_18A\_n257F  DC\_18A\_n257G  DC\_18A\_n257H  DC\_18A\_n257I  DC\_18A\_n257J  DC\_18A\_n257K  DC\_18A\_n257L  DC\_18A\_n257M | DC\_18A\_n257A  DC\_18A\_n257G  DC\_18A\_n257H  DC\_18A\_n257I |
| DC\_19A\_n257A  DC\_19A\_n257D  DC\_19A\_n257E  DC\_19A\_n257F  DC\_19A\_n257G  DC\_19A\_n257H  DC\_19A\_n257I  DC\_19A\_n257J  DC\_19A\_n257K  DC\_19A\_n257L  DC\_19A\_n257M | DC\_19A\_n257A  DC\_19A\_n257G  DC\_19A\_n257H  DC\_19A\_n257I  DC\_19A\_n257J  DC\_19A\_n257K  DC\_19A\_n257L  DC\_19A\_n257M |
| DC\_20A\_n258A | DC\_20A\_n258A |
| DC\_21A\_n257A  DC\_21A\_n257D  DC\_21A\_n257E  DC\_21A\_n257F  DC\_21A\_n257G  DC\_21A\_n257H  DC\_21A\_n257I  DC\_21A\_n257J  DC\_21A\_n257K  DC\_21A\_n257L  DC\_21A\_n257M | DC\_21A\_n257A  DC\_21A\_n257G  DC\_21A\_n257H  DC\_21A\_n257I  DC\_21A\_n257J  DC\_21A\_n257K  DC\_21A\_n257L  DC\_21A\_n257M |
| DC\_26A\_n257A | DC\_26A\_n257A |
| DC\_28A\_n257A  DC\_28A\_n257D  DC\_28A\_n257E  DC\_28A\_n257F  DC\_28A\_n257G  DC\_28A\_n257H  DC\_28A\_n257I  DC\_28A\_n257J  DC\_28A\_n257K  DC\_28A\_n257L  DC\_28A\_n257M | DC\_28A\_n257A  DC\_28A\_n257G  DC\_28A\_n257H  DC\_28A\_n257I  DC\_28A\_n257J  DC\_28A\_n257K  DC\_28A\_n257L  DC\_28A\_n257M |
| DC\_28A\_n258A  DC\_28A\_n258B  DC\_28A\_n258C  DC\_28A\_n258D  DC\_28A\_n258E  DC\_28A\_n258F  DC\_28A\_n258G  DC\_28A\_n258H  DC\_28A\_n258I  DC\_28A\_n258J  DC\_28A\_n258K  DC\_28A\_n258L  DC\_28A\_n258M | DC\_28A\_n258A |
| DC\_30A\_n260A  DC\_30A\_n260G  DC\_30A\_n260H  DC\_30A\_n260I  DC\_30A\_n260J  DC\_30A\_n260K  DC\_30A\_n260L  DC\_30A\_n260M | DC\_30A\_n260A |
| DC\_30A\_n260(A-I)  DC\_30A\_n260(G-I) | DC\_30A\_n260A |
| DC\_39A\_n257A  DC\_39A\_n257D  DC\_39A\_n257E  DC\_39A\_n257F  DC\_39A\_n257G  DC\_39A\_n257H  DC\_39A\_n257I  DC\_39A\_n257J  DC\_39A\_n257K  DC\_39A\_n257L  DC\_39A\_n257M | DC\_39A\_n257A |
| DC\_39A\_n258A | DC\_39A\_n258A |
| DC\_41A\_n257A  DC\_41A\_n257D  DC\_41A\_n257E  DC\_41A\_n257F  DC\_41A\_n257G  DC\_41A\_n257H  DC\_41A\_n257I  DC\_41A\_n257J  DC\_41A\_n257K  DC\_41A\_n257L  DC\_41A\_n257M  DC\_41C\_n257A  DC\_41C\_n257D  DC\_41C\_n257E  DC\_41C\_n257F  DC\_41C\_n257G  DC\_41C\_n257H  DC\_41C\_n257I  DC\_41C\_n257J  DC\_41C\_n257K  DC\_41C\_n257L  DC\_41C\_n257M | DC\_41A\_n257A  DC\_41A\_n257D  DC\_41A\_n257G  DC\_41A\_n257H  DC\_41A\_n257I  DC\_41C\_n257A  DC\_41C\_n257D  DC\_41C\_n257G  DC\_41C\_n257H  DC\_41C\_n257I |
| DC\_41A\_n258A | DC\_41A\_n258A |
| DC\_42A\_n257A  DC\_42A\_n257D  DC\_42A\_n257E  DC\_42A\_n257F  DC\_42A\_n257G  DC\_42A\_n257H  DC\_42A\_n257I  DC\_42A\_n257J  DC\_42A\_n257K  DC\_42A\_n257L  DC\_42A\_n257M  DC\_42C\_n257A  DC\_42C\_n257D  DC\_42C\_n257E  DC\_42C\_n257F  DC\_42C\_n257G  DC\_42C\_n257H  DC\_42C\_n257I  DC\_42C\_n257J  DC\_42C\_n257K  DC\_42C\_n257L  DC\_42C\_n257M  DC\_42D\_n257A  DC\_42D\_n257D  DC\_42D\_n257E  DC\_42D\_n257F  DC\_42D\_n257G  DC\_42D\_n257H  DC\_42D\_n257I  DC\_42D\_n257J  DC\_42D\_n257K  DC\_42D\_n257L  DC\_42D\_n257M  DC\_42E\_n257A  DC\_42E\_n257D  DC\_42E\_n257E  DC\_42E\_n257F  DC\_42E\_n257G  DC\_42E\_n257H  DC\_42E\_n257I  DC\_42E\_n257J  DC\_42E\_n257K  DC\_42E\_n257L  DC\_42E\_n257M | DC\_42A\_n257A  DC\_42A\_n257D  DC\_42A\_n257E  DC\_42A\_n257F  DC\_42A\_n257G  DC\_42A\_n257H  DC\_42A\_n257I  DC\_42A\_n257J  DC\_42A\_n257K  DC\_42A\_n257L  DC\_42A\_n257M  DC\_42C\_n257A  DC\_42C\_n257D  DC\_42C\_n257E  DC\_42C\_n257F  DC\_42D\_n257A  DC\_42D\_n257D  DC\_42D\_n257E  DC\_42D\_n257F  DC\_42E\_n257A  DC\_42E\_n257D  DC\_42E\_n257E  DC\_42E\_n257F |
| DC\_48A\_n257A  DC\_48C\_n257A | DC\_48A\_n257A  DC\_48C\_n257A |
| DC\_48A-48A\_n257A | DC\_48A\_n257A |
| DC\_48A\_n260A  DC\_48A\_n260G  DC\_48A\_n260H  DC\_48A\_n260I  DC\_48A\_n260J  DC\_48A\_n260K  DC\_48A\_n260L  DC\_48A\_n260M  DC\_48C\_n260A  DC\_48D\_n260A  DC\_48A\_n260(2A)  DC\_48C\_n260(2A)  DC\_48D\_n260(2A)  DC\_48A\_n260(3A)  DC\_48C\_n260(3A)  DC\_48D\_n260(3A)  DC\_48A\_n260(4A)  DC\_48C\_n260(4A)  DC\_48D\_n260(4A) | DC\_48A\_n260A  DC\_48C\_n260A |
| DC\_48A-48A\_n260A | DC\_48A\_n260A |
| DC\_48A\_n261A  DC\_48A\_n261G  DC\_48A\_n261H  DC\_48A\_n261I  DC\_48A\_n261J  DC\_48A\_n261K  DC\_48A\_n261L  DC\_48A\_n261M  DC\_48C\_n261A  DC\_48D\_n261A  DC\_48A\_n261(A-G)  DC\_48A\_n261(A-H)  DC\_48A\_n261(A-I)  DC\_48A\_n261(A-J)  DC\_48A\_n261(A-K)  DC\_48A\_n261(G-H)  DC\_48A\_n261(G-I)  DC\_48A\_n261(G-J)  DC\_48A\_n261(H-I)  DC\_48A\_n261(2A)  DC\_48C\_n261(2A)  DC\_48D\_n261(2A)  DC\_48A\_n261(3A)  DC\_48A\_n261(2A-G)  DC\_48A\_n261(2A-H)  DC\_48A\_n261(2A-I)  DC\_48A\_n261(2G)  DC\_48A\_n261(2H)  DC\_48A\_n261(4A)  DC\_48A\_n261(3A-G) | DC\_48A\_n261A  DC\_48A\_n261G  DC\_48A\_n261H  DC\_48A\_n261I  DC\_48C\_n261A |
| DC\_66A\_n257A  DC\_66A\_n257G  DC\_66A\_n257H  DC\_66A\_n257I  DC\_66A\_n257J  DC\_66A\_n257K  DC\_66A\_n257L  DC\_66A\_n257M  DC\_66C\_n257A | DC\_66A\_n257A |
| DC\_66A\_n257(2A)  DC\_66A-66A\_n257A | DC\_66A\_n257A |
| DC\_66A\_n258A | DC\_66A\_n258A |
| DC\_66A\_n258(2A)  DC\_66A\_n258(3A)  DC\_66A\_n258(4A)  DC\_66A\_n258(5A) | DC\_66A\_n258A |
| DC\_66A\_n260A  DC\_66A\_n260D  DC\_66A\_n260E  DC\_66A\_n260F  DC\_66A\_n260G  DC\_66A\_n260H  DC\_66A\_n260I  DC\_66A\_n260J  DC\_66A\_n260K  DC\_66A\_n260L  DC\_66A\_n260M  DC\_66A\_n260O  DC\_66A\_n260P  DC\_66A\_n260Q | DC\_66A\_n260A  DC\_66A\_n260G  DC\_66A\_n260H  DC\_66A\_n260O  DC\_66A\_n260P  DC\_66A\_n260Q |
| DC\_66A\_n260(2A)  DC\_66A\_n260(3A)  DC\_66A\_n260(4A)  DC\_66A\_n260(5A)  DC\_66A\_n260(6A)  DC\_66A\_n260(7A)  DC\_66A\_n260(8A)  DC\_66A\_n260(9A)  DC\_66A\_n260(10A)  DC\_66A\_n260(A-I)  DC\_66A\_n260(D-G)  DC\_66A\_n260(D-H)  DC\_66A\_n260(D-I)  DC\_66A\_n260(D-O)  DC\_66A\_n260(D-P)  DC\_66A\_n260(D-Q)  DC\_66A\_n260(E-O)  DC\_66A\_n260(E-P)  DC\_66A\_n260(E-Q)  DC\_66A\_n260(G-I)  DC\_66A\_n260(2G)  DC\_66A\_n260(2H)  DC\_66A\_n260(2O)  DC\_66A\_n260(3O)  DC\_66A\_n260(4O)  DC\_66A\_n260(2P)  DC\_66A\_n260(3P)  DC\_66A\_n260(4P)  DC\_66A\_n260(2A-O)  DC\_66A\_n260(A-2O)  DC\_66A\_n260(2A-G)  DC\_66A\_n260(A-2G)  DC\_66A\_n260(2A-2G)  DC\_66A\_n260(2G-O)  DC\_66A\_n260(2A-2G-O)  DC\_66A\_n260(A-2H)  DC\_66A\_n260(2A-H)  DC\_66A\_n260(2A-2H)  DC\_66A\_n260(2A-2O)  DC\_66A\_n260(2A-3O)  DC\_66A\_n260(A-4O)  DC\_66A\_n260(2A-4O)  DC\_66A\_n260(3A-2O)  DC\_66A\_n260(3A-2G)  DC\_66A\_n260(4A-G)  DC\_66A\_n260(4A-2G)  DC\_66A\_n260(4A-O)  DC\_66A\_n260(4A-2O)  DC\_66A\_n260(A-O)  DC\_66A\_n260(A-G)  DC\_66A\_n260(G-O)  DC\_66A\_n260(A-G-O)  DC\_66A\_n260(2A-G-O)  DC\_66A\_n260(A-2G-O)  DC\_66A\_n260(A-H)  DC\_66A\_n260(A-3O)  DC\_66A\_n260(3A-O)  DC\_66A\_n260(3A-O-P)  DC\_66A\_n260(3A-P)  DC\_66A\_n260(3A-G)  DC\_66A\_n260(2D)  DC\_66A\_n260(3G)  DC\_66A\_n260(4G)  DC\_66A\_n260(A-D)  DC\_66A\_n260(2A-D)  DC\_66A\_n260(A-D-O)  DC\_66A\_n260(2A-D-O)  DC\_66A\_n260(D-2O)  DC\_66A\_n260(A-D-2O)  DC\_66A\_n260(2A-D-2O)  DC\_66A\_n260(2A-O-P)  DC\_66A\_n260(A-2D)  DC\_66A\_n260(2A-2D)  DC\_66A\_n260(A-P)  DC\_66A\_n260(A-P-Q)  DC\_66A\_n260(2A-P)  DC\_66A\_n260(A-2P)  DC\_66A\_n260(2A-2P)  DC\_66A\_n260(3A-3O)  DC\_66A\_n260(D-2G)  DC\_66A\_n260(2D-O)  DC\_66A\_n260(G-H)  DC\_66A\_n260(G-2O)  DC\_66A\_n260(2G-2O)  DC\_66A\_n260(G-3O)  DC\_66A\_n260(2G-3O)  DC\_66A\_n260(G-4O)  DC\_66A\_n260(2G-4O)  DC\_66A\_n260(3G-O)  DC\_66A\_n260(4G-O)  DC\_66A\_n260(H-O)  DC\_66A\_n260(2H-O)  DC\_66A-n260(2A-2G-2O)  DC\_66A\_n260(6A-2O)  DC\_66A\_n260(8A-2O)  DC\_66A\_n260(2A-2O-2P)  DC\_66A\_n260(6A-3O)  DC\_66A\_n260(2A-4O)  DC\_66A\_n260(4A-4O)  DC\_66A\_n260(6A-2P)  DC\_66A\_n260(2O-2P)  DC\_66A\_n260(4P)  DC\_66A\_n260(2A-4P)  DC\_66A\_n260(2A-2Q-2O)  DC\_66A\_n260(4A-2Q)  DC\_66A\_n260(2A-2O-2Q)  DC\_66A\_n260(A-Q)  DC\_66A\_n260(P-Q)  DC\_66A-66A\_n260A  DC\_66A-66A\_n260G  DC\_66A-66A\_n260H  DC\_66A-66A\_n260I  DC\_66A-66A\_n260J  DC\_66A-66A\_n260K  DC\_66A-66A\_n260L  DC\_66A-66A\_n260M  DC\_66A\_n260(A-O-P)  DC\_66A\_n260(O-P)  DC\_66A-66A\_n260(2A)  DC\_66A-66A\_n260(2G)  DC\_66A-66A\_n260(2H)  DC\_66A-66A\_n260(3A)  DC\_66A-66A\_n260(4A)  DC\_66A-66A\_n260(5A)  DC\_66A-66A\_n260(6A)  DC\_66A-66A\_n260(A-G)  DC\_66A-66A\_n260(A-H)  DC\_66A-66A\_n260(A-2G)  DC\_66A-66A\_n260(G-H)  DC\_66A-66A\_n260(2A-G)  DC\_66A-66A\_n260(2A-2G)  DC\_66A-66A\_n260(3A-G) | DC\_66A\_n260A  DC\_66A\_n260G  DC\_66A\_n260H DC\_66A\_n260I  DC\_66A\_n260O  DC\_66A\_n260P  DC\_66A\_n260Q |
| DC\_66A\_n261A  DC\_66A\_n261D  DC\_66A\_n261E  DC\_66A\_n261F  DC\_66A\_n261G  DC\_66A\_n261H  DC\_66A\_n261I  DC\_66A\_n261J  DC\_66A\_n261K  DC\_66A\_n261L  DC\_66A\_n261M  DC\_66A\_n261O  DC\_66A\_n261P  DC\_66A\_n261Q | DC\_66A\_n261A  DC\_66A\_n261G  DC\_66A\_n261H  DC\_66A\_n261I |
| DC\_66A\_n261(2A)  DC\_66A\_n261(3A)  DC\_66A\_n261(4A)  DC\_66A\_n261(2G)  DC\_66A\_n261(D-G)  DC\_66A\_n261(D-H)  DC\_66A\_n261(D-I)  DC\_66A\_n261(D-O)  DC\_66A\_n261(D-P)  DC\_66A\_n261(D-Q)  DC\_66A\_n261(E-O)  DC\_66A\_n261(E-P)  DC\_66A\_n261(E-Q)  DC\_66A\_n261(2H)  DC\_66A\_n261(2I)  DC\_66A\_n261(A-H)  DC\_66A\_n261(A-I)  DC\_66A\_n261(A-J)  DC\_66A\_n261(A-K)  DC\_66A\_n261(A-D)  DC\_66A\_n261(A-D-H)  DC\_66A\_n261(A-G)  DC\_66A\_n261(A-G-H)  DC\_66A\_n261(G-I)  DC\_66A\_n261(G-J)  DC\_66A\_n261(A-G-I)  DC\_66A\_n261(A-H-I)  DC\_66A\_n261(G-H)  DC\_66A\_n261(H-I)  DC\_66A\_n261(A-D-2O)  DC\_66A\_n261(A-2D)  DC\_66A\_n261(A-2G)  DC\_66A\_n261(A-2G-2O)  DC\_66A\_n261(A-3G-O)  DC\_66A\_n261(A-4G)  DC\_66A\_n261(A-2H)  DC\_66A\_n261(A-2I)  DC\_66A\_n261(A-4O)  DC\_66A\_n261(A-7O)  DC\_66A\_n261(A-2P)  DC\_66A\_n261(A-2Q)  DC\_66A\_n261(2A-G)  DC\_66A\_n261(2A-H)  DC\_66A\_n261(2A-I)  DC\_66A\_n261(3A-G) | DC\_66A\_n261A  DC\_66A\_n261G  DC\_66A\_n261H  DC\_66A\_n261I |
| DC\_66A-66A\_n261A  DC\_66A-66A\_n261G  DC\_66A-66A\_n261H  DC\_66A-66A\_n261I  DC\_66A-66A\_n261J  DC\_66A-66A\_n261K  DC\_66A-66A\_n261L  DC\_66A-66A\_n261M  DC\_66A-66A\_n261(2A)  DC\_66A-66A\_n261(2G)  DC\_66A-66A\_n261(3A)  DC\_66A-66A\_n261(4A)  DC\_66A-66A\_n261(A-G)  DC\_66A-66A\_n261(A-G-H)  DC\_66A-66A\_n261(A-G-I)  DC\_66A-66A\_n261(A-2G)  DC\_66A-66A\_n261(A-H)  DC\_66A-66A\_n261(A-I)  DC\_66A-66A\_n261(A-J)  DC\_66A-66A\_n261(A-K)  DC\_66A-66A\_n261(G-H)  DC\_66A-66A\_n261(G-I)  DC\_66A-66A\_n261(G-J)  DC\_66A-66A\_n261(H-I)  DC\_66A-66A\_n261(2H)  DC\_66A-66A\_n261(2A-G)  DC\_66A-66A\_n261(2A-H)  DC\_66A-66A\_n261(2A-I)  DC\_66A-66A\_n261(3A-G | DC\_66A\_n261A  DC\_66A\_n261G  DC\_66A\_n261H  DC\_66A\_n261I |
| DC\_71A\_n257A | DC\_71A\_n257A |
| DC\_71A\_n258A | DC\_71A\_n258A |
| DC\_71A\_n260A | DC\_71A\_n260A |
| DC\_71A\_n261A | DC\_71A\_n261A |
| NOTE 1: Uplink EN-DC configurations are the configurations supported by the present release of specifications.  NOTE 2: Applicable for UE supporting inter-band EN-DC with mandatory simultaneous Rx/Tx capability for all of the above combinations | |

## << Forth of changes >>

### 6.2B.1 UE maximum output power for DC

#### 6.2B.1.1 Intra-band contiguous EN-DC

The following UE Power Classes define the total maximum output power for any transmission bandwidth(s) of the CG(s) configured.

The maximum output power is measured as the total maximum output power across the UE antenna connector(s). The period of measurement shall be at least one sub frame.

Table 6.2B.1.1-1: Maximum output power for EN-DC (continuous sub-blocks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| EN-DC configuration | Power class 2  (dBm) | Tolerance  (dB) | Power class 3  (dBm) | Tolerance  (dB) |
| DC\_(n)5AA3 |  |  | 23 | +2/-3 |
| DC\_(n)12AA3 |  |  | 23 | +2/-3 |
| DC\_(n)71AA |  |  | 23 | +2/-3 |
| DC\_(n)38AA3 |  |  | 23 | +2/-3 |
| DC\_(n)41AA | 26 | +2/-31 | 23 | +2/-31 |
| DC\_(n)48AA3 |  |  | 23 | +2/-3 |
| NOTE 1: If all transmitted resource blocks over all component carriers are confined within FUL\_low and FUL\_low + 4 MHz or/and FUL\_high – 4 MHz and FUL\_high, the maximum output power requirement is relaxed by reducing the lower tolerance limit by 1.5 dB  NOTE 2: Power Class 3 is the default power class unless otherwise stated.  NOTE 3: Only single switched UL is supported. | | | | |

If UE supports a different power class than the default UE power class for EN-DC band combination, and the supported power class enables higher maximum output power than that of the default power class:

- if the E-UTRA UL/DL configuration is 0 or 6; or

- if the E-UTRA UL/DL configuration is 1 and special subframe configuration is 0 or 5; or

- if the IE *p-maxUE-FR1-r15* as defined in TS 36.331 [8] is provided and set to the maximum output power of the default power class or lower;

- apply all requirements for the default power class, and set the configured transmitted power as specified in clause 6.2B.4;

- else

- apply all requirements for the supported power class, and set the configured transmitted power class as specified in clause 6.2B.4;

#### 6.2B.1.2 Intra-band non-contiguous EN-DC

Table 6.2B.1.2-1: Maximum output power for EN-DC (non-continuous sub-blocks)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| EN-DC configuration | Power class 2  (dBm) | Tolerance  (dB) | Power class 3  (dBm) | Tolerance  (dB) |
| DC\_2A\_n2A4 |  |  | 23 | +2/-3 |
| DC\_3A\_n3A2 |  |  | 23 | +2/-3 |
| DC\_5A\_n5A4 |  |  | 23 | +2/-3 |
| DC\_7A\_n7A4 |  |  | 23 | +2/-3 |
| DC\_48A\_n48A4 |  |  | 23 | +2/-3 |
| DC\_41A\_n41A | 26 | +2/-31 | 23 | +2/-31 |
| DC\_66A\_n66A4 |  |  | 23 | +2/-3 |
| NOTE 1: If all transmitted resource blocks over all component carriers are confined within FUL\_low and FUL\_low + 4 MHz or/and FUL\_high – 4 MHz and FUL\_high, the maximum output power requirement is relaxed by reducing the lower tolerance limit by 1.5 dB  NOTE 2: Only single switched UL is supported in Rel.15  NOTE 3: Power Class 3 is the default power class unless otherwise stated.  NOTE 4: Only single switched UL is supported | | | | |

If UE supports a different power class than the default UE power class for EN-DC band combination, and the supported power class enables higher maximum output power than that of the default power class:

- if the E-UTRA UL/DL configuration is 0 or 6; or

- if the E-UTRA UL/DL configuration is 1 and special subframe configuration is 0 or 5; or

- if the IE *p-maxUE-FR1-r15* as defined in TS 36.331 [8] is provided and set to the maximum output power of the default power class or lower;

- apply all requirements for the default power class, and set the configured transmitted power as specified in clause 6.2B.4;

- else

- apply all requirements for the supported power class, and set the configured transmitted power class as specified in clause 6.2B.4;

#### 6.2B.1.3 Inter-band EN-DC within FR1

For inter-band EN-DC of E-UTRA and NR in FR1, the following UE Power Classes define the maximum output power for any transmission bandwidth within the aggregated channel bandwidth. The maximum output power is measured as the sum of the maximum output power at each UE antenna connector. The period of measurement shall be at least one sub frame (1ms). UE maximum output power shall be measured over all component carriers from different bands. If each band has separate antenna connectors, maximum output power is measured as the sum of maximum output power at each UE antenna connector.

Table 6.2B.1.3-1: Maximum output power for inter-band EN-DC (two bands)

| EN-DC configuration | Power class 2  (dBm) | Tolerance  (dB) | Power class 3  (dBm) | Tolerance  (dB) |
| --- | --- | --- | --- | --- |
| DC\_1A\_n3A |  |  | 23 | +2/-3 |
| DC\_1A\_n5A |  |  | 23 | +2/-3 |
| DC\_1A\_n7A |  |  | 23 | +2/-3 |
| DC\_1A\_n8A |  |  | 23 | +2/-3 |
| DC\_1A\_n20A |  |  | 23 | +2/-3 |
| DC\_1A\_n28A |  |  | 23 | +2/-3 |
| DC\_1A\_n38A |  |  | 23 | +2/-3 |
| DC\_1A\_n40A |  |  | 23 | +2/-3 |
| DC\_1A\_n41A |  |  | 23 | +2/-3 |
| DC\_1A\_n50A |  |  | 23 | +2/-3 |
| DC\_1A\_n51A |  |  | 23 | +2/-3 |
| DC\_1A\_n71A |  |  | 23 | +2/-3 |
| DC\_1A\_n77A  DC\_1A\_n84A\_ULSUP-TDM\_n77A |  |  | 23 | +2/-3 |
| DC\_1A\_n78A  DC\_1A\_n84A\_ULSUP-TDM\_n78A |  |  | 23 | +2/-3 |
| DC\_1A\_n79A  DC\_1A\_n84A\_ULSUP-TDM\_n79A |  |  | 23 | +2/-3 |
| DC\_1A\_n80A |  |  | 23 | +2/-3 |
| DC\_2A\_n5A |  |  | 23 | +2/-31 |
| DC\_2A\_n7A |  |  | 23 | +2/-3 |
| DC\_2A\_n12A |  |  | 23 | +2/-3 |
| DC\_2A\_n38A |  |  | 23 | +2/-3 |
| DC\_2A\_n41A |  |  | 23 | +2/-3 |
| DC\_2A\_n48A |  |  | 23 | +2/-3 |
| DC\_2A\_n66A |  |  | 23 | +2/-31 |
| DC\_2A\_n71A |  |  | 23 | +2/-3 |
| DC\_2A\_n78A |  |  | 23 | +2/-3 |
| DC\_3A\_n1A |  |  | 23 | +2/-3 |
| DC\_3A\_n5A  DC\_3C\_n5A |  |  | 23 | +2/-3 |
| DC\_3A\_n7A |  |  | 23 | +2/-31 |
| DC\_3A\_n8A |  |  | 23 | +2/-3 |
| DC\_3A\_n20A |  |  | 23 | +2/-3 |
| DC\_3A\_n28A |  |  | 23 | +2/-31 |
| DC\_3A\_n34A |  |  | 23 | +2/-31 |
| DC\_3A\_n38A |  |  | 23 | +2/-3 |
| DC\_3A\_n40A |  |  | 23 | +2/-31 |
| DC\_3A\_n41A,  DC\_3C\_n41A,  DC\_3C\_n41A, |  |  | 23 | +2/-3 |
| DC\_3A\_n50A |  |  | 23 | +2/-3 |
| DC\_3A\_n51A |  |  | 23 | +2/-31 |
| DC\_3A\_n71A |  |  | 23 | +2/-3 |
| DC\_3A\_n77A |  |  | 23 | +2/-31 |
| DC\_3A\_n78A |  |  | 23 | +2/-31 |
| DC\_3A\_n79A  DC\_3C\_n79A |  |  | 23 | +2/-31 |
| DC\_3A\_n80A\_ULSUP-TDM,  DC\_3A\_n80A\_ULSUP-FDM,  DC\_3C\_n80A\_ULSUP-TDM,  DC\_3C\_n80A\_ULSUP-FDM |  |  | 23 | +2/-3 |
| DC\_3A\_n80A\_ULSUP-TDM\_n77A  DC\_3A\_n80A\_ULSUP-FDM\_n77A |  |  | 23 | +2/-31 |
| DC\_3A\_n80A\_ULSUP-TDM\_n78A,  DC\_3A\_n80A\_ULSUP-FDM\_n78A |  |  | 23 | +2/-31 |
| DC\_3A\_n80A\_ULSUP-TDM\_n79A,  DC\_3A\_n80A\_ULSUP-FDM\_n79A |  |  | 23 | +2/-31 |
| DC\_3A\_n82A |  |  | 23 | +2/-31 |
| DC\_3A\_n84A |  |  | 23 | +2/-31 |
| DC\_4A\_n38A |  |  | 23 | +2/-3 |
| DC\_4A\_n41A |  |  | 23 | +2/-3 |
| DC\_4A\_n78A |  |  | 23 | +2/-3 |
| DC\_5A\_n2A |  |  | 23 | +2/-3 |
| DC\_5A\_n7A |  |  | 23 | +2/-3 |
| DC\_5A\_n12A |  |  | 23 | +2/-3 |
| DC\_5A\_n38A |  |  | 23 | +2/-3 |
| DC\_5A\_n40A |  |  | 23 | +2/-31 |
| DC\_5A\_n48A |  |  | 23 | +2/-3 |
| DC\_5A\_n66A |  |  | 23 | +2/-31 |
| DC\_5A\_n71A |  |  | 23 | +2/-3 |
| DC\_5A\_n78A |  |  | 23 | +2/-3 |
| DC\_5A\_n79A |  |  | 23 | +2/-3 |
| DC\_7A\_n1A |  |  | 23 | +2/-3 |
| DC\_7A\_n3A |  |  | 23 | +2/-3 |
| DC\_7A\_n5A  DC\_7C\_n5A |  |  | 23 | +2/-3 |
| DC\_7A\_n8A |  |  | 23 | +2/-3 |
| DC\_7A\_n20A |  |  | 23 | +2/-3 |
| DC\_7A\_n28A |  |  | 23 | +2/-31 |
| DC\_7A\_n40A |  |  | 23 | +2/-3 |
| DC\_7A\_n51A |  |  | 23 | +2/-31 |
| DC\_7A\_n66A |  |  | 23 | +2/-31 |
| DC\_7A\_n71A |  |  | 23 | +2/-3 |
| DC\_7A\_n77A |  |  | 23 | +2/-3 |
| DC\_7A\_n78A  DC\_7C\_n78A |  |  | 23 | +2/-3 |
| DC\_7A\_n80A |  |  | 23 | +2/-3 |
| DC\_8A\_n1A |  |  | 23 | +2/-3 |
| DC\_8A\_n3A |  |  | 23 | +2/-3 |
| DC\_8A\_n20A |  |  | 23 | +2/-3 |
| DC\_8A\_n28A |  |  | 23 | +2/-3 |
| DC\_8A\_n34A |  |  | 23 | +2/-31 |
| DC\_8A\_n39A |  |  | 23 | +2/-3 |
| DC\_8A\_n40A |  |  | 23 | +2/-31 |
| DC\_8A\_n41A, |  |  | 23 | +2/-3 |
| DC\_8A\_n77A |  |  | 23 | +2/-3 |
| DC\_8A\_n78A |  |  | 23 | +2/-3 |
| DC\_8A\_n79A  DC\_8A\_n79C |  |  | 23 | +2/-3 |
| DC\_8A\_n80A |  |  | 23 | +2/-3 |
| DC\_8A\_n81A\_ULSUP-TDM,  DC\_8A\_n81A\_ULSUP-FDM |  |  | 23 | +2/-3 |
| DC\_8A\_n81A\_ULSUP-TDM\_n78A,  DC\_8A\_n81A\_ULSUP-FDM\_n78A |  |  | 23 | +2/-3 |
| DC\_8A\_n81A\_ULSUP-TDM\_n79A,  DC\_8A\_n81A\_ULSUP-FDM\_n79A |  |  | 23 | +2/-3 |
| DC\_11A\_n3A |  |  | 23 | +2/-3 |
| DC\_11A\_n28A |  |  | 23 | +2/-3 |
| DC\_11A\_n77A |  |  | 23 | +2/-3 |
| DC\_11A\_n78A |  |  | 23 | +2/-3 |
| DC\_11A\_n79A |  |  | 23 | +2/-3 |
| DC\_12A\_n2A |  |  | 23 | +2/-3 |
| DC\_12A\_n5A |  |  | 23 | +2/-3 |
| DC\_12A\_n7A |  |  | 23 | +2/-3 |
| DC\_12A\_n25A |  |  | 23 | +2/-3 |
| DC\_12A\_n38A |  |  | 23 | +2/-3 |
| DC\_12A\_n41A |  |  | 23 | +2/-3 |
| DC\_12A\_n66A |  |  | 23 | +2/-3 |
| DC\_12A\_n78A |  |  | 23 | +2/-3 |
| DC\_13A\_n2A |  |  | 23 | +2/-3 |
| DC\_13A\_n5A |  |  | 23 | +2/-3 |
| DC\_13A\_n7A |  |  | 23 | +2/-3 |
| DC\_13A\_n48A |  |  | 23 | +2/-3 |
| DC\_13A\_n66A |  |  | 23 | +2/-3 |
| DC\_13A\_n71A |  |  | 23 | +2/-3 |
| DC\_13A\_n78A |  |  | 23 | +2/-3 |
| DC\_14A\_n2A |  |  | 23 | +2/-3 |
| DC\_14A\_n66A |  |  | 23 | +2/-3 |
| DC\_18A\_n3A |  |  | 23 | +2/-3 |
| DC\_18A\_n77A |  |  | 23 | +2/-3 |
| DC\_18A\_n78A |  |  | 23 | +2/-3 |
| DC\_18A\_n79A |  |  | 23 | +2/-3 |
| DC\_19A\_n77A |  |  | 23 | +2/-3 |
| DC\_19A\_n78A |  |  | 23 | +2/-3 |
| DC\_19A\_n79A |  |  | 23 | +2/-3 |
| DC\_20A\_n1A |  |  | 23 | +2/-3 |
| DC\_20A\_n3A |  |  | 23 | +2/-3 |
| DC\_20A\_n7A |  |  | 23 | +2/-3 |
| DC\_20A\_n8A |  |  | 23 | +2/-3 |
| DC\_20A\_n38A |  |  | 23 | +2/-3 |
| DC\_20A\_n28A |  |  | 23 | +2/-3 |
| DC\_20A\_n41A |  |  | 23 | +2/-3 |
| DC\_20A\_n50A |  |  | 23 | +2/-3 |
| DC\_20A\_n51A |  |  | 23 | +2/-3 |
| DC\_20A\_n77A |  |  | 23 | +2/-3 |
| DC\_20A\_n80A |  |  | 23 | +2/-3 |
| DC\_20A\_n78A |  |  | 23 | +2/-3 |
| DC\_20A\_n82A\_ULSUP-TDM\_n78A |  |  | 23 | +2/-3 |
| DC\_20A\_n83A |  |  | 23 | +2/-3 |
| DC\_21A\_n77A |  |  | 23 | +2/-3 |
| DC\_21A\_n78A |  |  | 23 | +2/-3 |
| DC\_21A\_n79A |  |  | 23 | +2/-3 |
| DC\_25A\_n41A |  |  | 23 | +2/-3 |
| DC\_26A\_n25A |  |  | 23 | +2/-3 |
| DC\_26A\_n41A |  |  | 23 | +2/-3 |
| DC\_26A\_n77A |  |  | 23 | +2/-3 |
| DC\_26A\_n78A |  |  | 23 | +2/-3 |
| DC\_26A\_n79A |  |  | 23 | +2/-3 |
| DC\_28A\_n3A |  |  | 23 | +2/-3 |
| DC\_28A\_n5A |  |  | 23 | +2/-3 |
| DC\_28A\_n7A  DC\_28A\_n7B |  |  | 23 | +2/-3 |
| DC\_28A\_n8A |  |  | 23 | +2/-3 |
| DC\_28A\_n40A |  |  | 23 | +2/-3 |
| DC\_28A\_n41A |  |  | 23 | +2/-3 |
| DC\_28A\_n50A |  |  | 23 | +2/-3 |
| DC\_28A\_n51A |  |  | 23 | +2/-3 |
| DC\_28A\_n77A |  |  | 23 | +2/-3 |
| DC\_28A\_n78A |  |  | 23 | +2/-3 |
| DC\_28A\_n79A |  |  | 23 | +2/-3 |
| DC\_28A\_n83A\_ULSUP-TDM\_n78A |  |  | 23 | +2/-3 |
| DC\_30A\_n2A |  |  | 23 | +2/-3 |
| DC\_30A\_n5A |  |  | 23 | +2/-3 |
| DC\_30A\_n66A |  |  | 23 | +2/-3 |
| DC\_38A\_n78A |  |  | N/A | N/A |
| DC\_39A\_n40A |  |  | 23 | +2/-3 |
| DC\_39A\_n41A  DC\_39C\_n41A | 265 | +2/-31 | 23 | +2/-3 |
| DC\_39A\_n78A |  |  | 23 | +2/-31 |
| DC\_39A\_n79A | 265 | +2/-31 | 23 | +2/-31 |
| DC\_40A\_n1A |  |  | 23 | +2/-3 |
| DC\_40A\_n41A  DC\_40C\_n41A |  |  | 23 | +2/-3 |
| DC\_40A\_n77A |  |  | N/A | N/A |
| DC\_40A\_n78A |  |  | 23 | +2/-3 |
| DC\_40A\_n79A |  |  | 23 | +2/-3 |
| DC\_41A\_n3A  DC\_41C\_n3A |  |  | 23 | +2/-3 |
| DC\_41A\_n28A  DC\_41C\_n28A |  |  | 23 | +2/-3 |
| DC\_41A\_n77A  DC\_41C\_n77A |  |  | 23 | +2/-31 |
| DC\_41A\_n78A  DC\_41C\_n78A |  |  | 23 | +2/-31 |
| DC\_41A\_n79A  DC\_41C\_n79A | 265 | +2/-31 | 23 | +2/-31 |
| DC\_42A\_n28A  DC\_42C\_n28A |  |  | 23 | +2/-3 |
| DC\_42A\_n51A |  |  | 23 | +2/-3 |
| DC\_42A\_n77A |  |  | N/A | N/A |
| DC\_42A\_n78A |  |  | N/A | N/A |
| DC\_42A\_n79A |  |  | N/A | N/A |
| DC\_48A\_n5A |  |  | 23 | +2/-3 |
| DC\_48A\_n12A |  |  | 23 | +2/-3 |
| DC\_48A\_n66A |  |  | 23 | +2/-3 |
| DC\_48A\_n71A |  |  | 23 | +2/-3 |
| DC\_66A\_n2A |  |  | 23 | +2/-3 |
| DC\_66A\_n5A |  |  | 23 | +2/-31 |
| DC\_66A\_n7A |  |  | 23 | +2/-3 |
| DC\_66A\_n12A |  |  | 23 | +2/-3 |
| DC\_66A\_n25A |  |  | 23 | +2/-3 |
| DC\_66A\_n38A |  |  | 23 | +2/-3 |
| DC\_66A\_n41A |  |  | 23 | +2/-3 |
| DC\_66A\_n48A |  |  | 23 | +2/-3 |
| DC\_66A\_n71A |  |  | 23 | +2/-3 |
| DC\_66A\_n78A  DC\_66A-66A\_n78A |  |  | 23 | +2/-3 |
| DC\_66A\_n86A\_ULSUP-TDM\_n78A |  |  | 23 | +2/-3 |
| DC\_71A\_n5A |  |  | 23 | +2/-3 |
| DC\_71A\_n38A |  |  | 23 | +2/-3 |
| DC\_71A\_n48A |  |  | 23 | +2/-3 |
| DC\_71A\_n66A |  |  | 23 | +2/-3 |
| DC\_71A\_n78A |  |  | 23 | +2/-3 |
| NOTE 1: For the transmission bandwidths confined within FUL\_low and FUL\_low + 4 MHz or FUL\_high – 4 MHz and FUL\_high, the maximum output power requirement is relaxed by reducing the lower tolerance limit by 1.5 dB  NOTE 2: PPowerClass, EN-DC is the maximum UE power specified without taking into account the tolerance  NOTE 3: For inter-band EN-DC the maximum power requirement should apply to the total transmitted power over all component carriers (per UE).  NOTE 4: Power Class 3 is the default power class unless otherwise stated.  NOTE 5: The UE is not required to support PC2 within each individual cell group. Power class support within each individual cell group is signaled separately by the UE. | | | | |

If a UE supports a different power class than the default UE power class for an E-UTRA TDD and NR TDD EN-DC band combination and the supported power class enables higher maximum output power than that of the default power class:

if the field of UE capability *maxUplinkDutyCycle-PC2-FR1* is absent and the percentage of NR uplink symbols transmitted in a certain evaluation period is larger than 30% (The exact evaluation period is no less than one radio frame); or

– if the field of UE capability *maxUplinkDutyCycle-PC2-FR1* is not absent and the percentage of NR uplink symbols transmitted in a certain evaluation period is larger than *maxUplinkDutyCycle-PC2-FR1* as defined in TS38.331 (The exact evaluation period is no less than one radio frame); or

– if the IE *p-maxUE-FR1* as defined in TS 38.331 is provided and set to the maximum output power of the default power class or lower;

– shall apply all requirements for the default power class to the supported power class and set the configured transmitted power as specified sub-clause 6.2B.4;

– Else if the IE *p-maxUE-FR1* as defined in TS 38.331 is not provided or set to the higher value than the maximum output power of the default power class and the percentage of NR uplink symbols transmitted in a certain evaluation period is less than or equal t*o maxUplinkDutyCycle-PC2-FR1* as defined in TS 38.331; or

– if the IE *p-maxUE-FR1* as defined in TS 38.331 is not provided or set to the higher value than the maximum output power of the default power class and the percentage of NR uplink symbols transmitted in a certain evaluation period is less than or equal to 30% when *maxUplinkDutyCycle-PC2-FR1* is absent. (The exact evaluation period is no less than one radio frame):

– shall apply all requirements for the supported power class and set the configured transmitted power class as specified in sub-clause 6.2B.4.

## << Fifth changes >>

##### 6.2B.4.2.3 Inter-band EN-DC within FR1

###### 6.2B.4.2.3.1 ΔTIB,c for EN-DC two bands

Table 6.2B.4.2.3.1-1: ΔTIB,c due to EN-DC(two bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔTIB,c (dB) |
| --- | --- | --- |
| DC\_1\_n3 | 1 | 0.3 |
| n3 | 0.3 |
| DC\_1\_n5 | 1 | 0.3 |
| n5 | 0.3 |
| DC\_1\_n7 | 1 | 0.5 |
| n7 | 0.6 |
| DC\_1\_n8 | 1 | 0.3 |
| n8 | 0.3 |
| DC\_1\_n20 | 1 | 0.3 |
| n20 | 0.3 |
| DC\_1\_n28 | 1 | 0.3 |
| n28 | 0.6 |
| DC\_1\_n38 | 1 | 0.5 |
| n38 | 0.5 |
| DC\_1\_n40 | 1 | 0.5 |
| n40 | 0.5 |
| DC\_1\_n50 | 1 | 0.5 |
| n50 | 0.5 |
| DC\_1\_n41 | 1 | 0.5 |
| n41 | 0.5 |
| DC\_1\_n51 | 1 | 0.6 |
| n51 | 0.6 |
| DC\_1\_n71 | 1 | 0.3 |
| n71 | 0.3 |
| DC\_1\_n77 | 1 | 0.6 |
| n77 | 0.8 |
| DC\_1\_n78 | 1 | 0.3 |
| n78 | 0.8 |
| DC\_2\_n5 | 2 | 0.3 |
| n5 | 0.3 |
| DC\_2\_n7 | 2 | 0.5 |
| n7 | 0.5 |
| DC\_2\_n12 | 2 | 0.3 |
| n12 | 0.3 |
| DC\_2\_n38 | 2 | 0.5 |
| n38 | 0.9 |
| DC\_2\_n41 | 2 | 0.5 |
| n41 | 0.41 |
| 0.92 |
| DC\_2\_n48 | 2 | 0.6 |
| n48 | 0.8 |
| DC\_2\_n66 | 2 | 0.5 |
| n66 | 0.5 |
| DC\_2\_n71 | 2 | 0.3 |
| n71 | 0.3 |
| DC\_2\_n78 | 2 | 0.6 |
| n78 | 0.8 |
| DC\_3\_n1 | 3 | 0.3 |
| n1 | 0.3 |
| DC\_3\_n5 | 3 | 0.3 |
| n5 | 0.3 |
| DC\_3\_n8 | 3 | 0.3 |
| n8 | 0.3 |
| DC\_3\_n7 | 3 | 0.5 |
| n7 | 0.5 |
| DC\_3\_n20 | 3 | 0.3 |
| n20 | 0.3 |
| DC\_3\_n28 | 3 | 0.3 |
| n28 | 0.3 |
| DC\_3\_n34 | 3 | 0.5 |
| n34 | 0.5 |
| DC\_3\_n38 | 3 | 0.5 |
| n38 | 0.5 |
| DC\_3\_n40 | 3 | 0.5 |
| n40 | 0.5 |
| DC\_3-n41 | 3 | 0.5 |
| n41 | 0.33 |
| 0.84 |
| DC\_3\_n50 | 3 | 0.5 |
| n50 | 0.5 |
| DC\_3\_n51 | 3 | 0.3 |
| n51 | 0.3 |
| DC\_3\_n71 | 3 | 0.3 |
| n71 | 0.3 |
| DC\_7\_n66, DC\_7-7\_n66 | 7 | 0.5 |
| n66 | 0.5 |
| DC\_3\_n77, DC\_3-3\_n77 | 3 | 0.6 |
| n77 | 0.8 |
| DC\_3\_n78, DC\_3-3\_n78 | 3 | 0.6 |
| n78 | 0.8 |
| DC\_4\_n38 | 4 | 0.5 |
| n38 | 0.8 |
| DC\_4\_n41 | 4 | 0.5 |
| n41 | 0.81 |
| 1.32 |
| DC\_4\_n78 | 4 | 0.6 |
| n78 | 0.8 |
| DC\_5\_n2,  DC\_5-5\_n2 | 5 | 0.3 |
| n2 | 0.3 |
| DC\_5\_n7 | 5 | 0.3 |
| n7 | 0.3 |
| DC\_5\_n12 | 5 | 0.8 |
| n12 | 0.4 |
| DC\_5\_n38 | 5 | 0.3 |
| n38 | 0.3 |
| DC\_5\_n40 | 5 | 0.3 |
| n40 | 0.3 |
| DC\_5\_n48 | 5 | 0.3 |
| n48 | 0.3 |
| DC\_5\_n66,  DC\_5-5\_n66 | 5 | 0.3 |
| n66 | 0.3 |
| DC\_5\_n71 | 5 | 0.5 |
| n71 | 0.5 |
| DC\_5\_n78 | 5 | 0.6 |
| n78 | 0.8 |
| DC\_7\_n1, DC\_7-7\_n1 | 7 | 0.6 |
| n1 | 0.5 |
| DC\_7\_n3 | 7 | 0.5 |
| n3 | 0.5 |
| DC\_7\_n5 | 7 | 0.3 |
| n5 | 0.3 |
| DC\_7\_n8 | 7 | 0.3 |
| n8 | 0.6 |
| DC\_7\_n20 | 7 | 0.3 |
| n20 | 0.3 |
| DC\_7\_n28 | 7 | 0.3 |
| n28 | 0.3 |
| DC\_7\_n40 | 7 | 0.5 |
| n40 | 0.6 |
| DC\_7\_n51 | 7 | 0.3 |
| n51 | 0.3 |
| DC\_7\_n71 | 7 | 0.3 |
| n71 | 0.6 |
| DC\_7\_n77, DC\_7-7\_n77 | 7 | 0.5 |
| n77 | 0.8 |
| DC\_7\_n78, DC\_7-7\_n78 | 7 | 0.5 |
| n78 | 0.8 |
| DC\_8\_n1 | 8 | 0.3 |
| n1 | 0.3 |
| DC\_8\_n3 | 8 | 0.3 |
| n3 | 0.3 |
| DC\_8\_n20 | 8 | 0.4 |
| n20 | 0.4 |
| DC\_8\_n28 | 8 | 0.6 |
| n28 | 0.5 |
| DC\_8\_n34 | 8 | 0.3 |
| n34 | 0.3 |
| DC\_8\_n39 | 8 | 0.3 |
| n39 | 0.3 |
| DC\_8\_n40 | 8 | 0.3 |
| n40 | 0.3 |
| DC\_8\_n41 | 8 | 0.3 |
| n41 | 0.3 |
| DC\_8\_n77 | 8 | 0.6 |
| n77 | 0.8 |
| DC\_8\_n78 | 8 | 0.6 |
| n77 | 0.8 |
| DC\_11\_n3 | 11 | 0.8 |
| n3 | 0.9 |
| DC\_11\_n28 | 11 | 0.4 |
| n28 | 0.6 |
| DC\_11\_n77 | 11 | 0.4 |
| n77 | 0.8 |
| DC\_11\_n78 | 11 | 0.4 |
| n78 | 0.8 |
| DC\_12\_n2 | 12 | 0.3 |
| n2 | 0.3 |
| DC\_12\_n5 | 12 | 0.4 |
| n5 | 0.8 |
| DC\_12\_n7 | 12 | 0.3 |
| n7 | 0.3 |
| DC\_12\_n25 | 12 | 0.3 |
| n25 | 0.3 |
| DC\_12\_n38 | 12 | 0.3 |
| n38 | 0.3 |
| DC\_12\_n41 | 12 | 0.3 |
| n41 | 0.3 |
| DC\_12\_n66 | 12 | 0.8 |
| n66 | 0.3 |
|  |  |  |
|  |  |
| DC\_12\_n78 | 12 | 0.5 |
| n78 | 0.8 |
| DC\_13\_n2 | 13 | 0.3 |
| n2 | 0.3 |
| DC\_13\_n5 | 13 | 0.5 |
| n5 | 0.5 |
| DC\_13\_n7 | 13 | 0.5 |
| n7 | 0.5 |
| DC\_13\_n48 | 13 | 0.3 |
| n48 | 0.3 |
| DC\_13\_n66 | 13 | 0.3 |
| n66 | 0.3 |
| DC\_13\_n71 | 13 | 0.5 |
| n71 | 0.5 |
| DC\_13\_n78 | 13 | 0.5 |
| n78 | 0.8 |
| DC\_14\_n2 | 14 | 0.3 |
| n2 | 0.3 |
| DC\_14\_n66 | 14 | 0.3 |
| n66 | 0.3 |
| DC\_18\_n3 | 18 | 0.3 |
| n3 | 0.3 |
| DC\_18\_n77 | 18 | 0.3 |
| n77 | 0.8 |
| DC\_18\_n78 | 18 | 0.3 |
| n78 | 0.8 |
| DC\_19\_n77 | 19 | 0.3 |
| n77 | 0.8 |
| DC\_19\_n78 | 19 | 0.3 |
| n78 | 0.8 |
| DC\_20\_n1 | 20 | 0.3 |
| n1 | 0.3 |
| DC\_20\_n3 | 20 | 0.3 |
| n3 | 0.3 |
| DC\_20\_n7 | 20 | 0.3 |
| n7 | 0.3 |
| DC\_20\_n8 | 20 | 0.4 |
| n8 | 0.4 |
| DC\_20\_n28 | 20 | 0.5 |
| n28 | 0.5 |
| DC\_20\_n38 | 20 | 0.3 |
| n38 | 0.3 |
| DC\_20\_n41 | 20 | 0.3 |
| n41 | 0.3 |
| DC\_20\_n50 | 20 | 0.3 |
| n50 | 0.4 |
| DC\_20\_n51 | 20 | 0.5 |
| n51 | 0.5 |
| DC\_20\_n77 | 20 | 0.6 |
| n77 | 0.8 |
| DC\_20\_n78 | 20 | 0.6 |
| n78 | 0.8 |
| DC\_21\_n77 | 21 | 0.4 |
| n77 | 0.8 |
| DC\_21\_n78 | 21 | 0.4 |
| n78 | 0.8 |
| n77 | 0.8 |
| DC\_25\_n41,  DC\_25-25\_n41 | 25 | 0.5 |
| n41 | 0.41 |
| 0.92 |
| DC\_26\_n25 | 26 | 0.3 |
| n25 | 0.3 |
| DC\_26\_n41 | 26 | 0.3 |
| n41 | 0.3 |
| DC\_26\_n77 | 26 | 0.3 |
| n77 | 0.8 |
| DC\_26\_n78 | 26 | 0.3 |
| n78 | 0.8 |
| DC\_28\_n3 | 28 | 0.3 |
| n3 | 0.3 |
| DC\_28\_n5 | 28 | 0.5 |
| n5 | 0.5 |
| DC\_28\_n7 | 28 | 0.3 |
| n7 | 0.3 |
| DC\_28\_n8 | 28 | 0.5 |
| n8 | 0.6 |
| DC\_28\_n40 | 28 | 0.3 |
| n40 | 0.3 |
| DC\_28\_n41 | 28 | 0.3 |
| n41 | 0.3 |
| DC\_28\_n50 | 28 | 0.3 |
| n50 | 0.4 |
| DC\_28\_n51 | 28 | 0.5 |
| n51 | 0.5 |
| DC\_28\_n77 | 28 | 0.5 |
| n77 | 0.8 |
| DC\_28\_n78 | 28 | 0.5 |
| n78 | 0.8 |
| DC\_30\_n2 | 30 | 0.3 |
| n2 | 0.5 |
| DC\_30\_n5 | 30 | 0.3 |
| n5 | 0.3 |
| DC\_30\_n66 | 30 | 0.5 |
| n66 | 0.8 |
| DC\_38\_n78 | n78 | 0.5 |
| DC\_39-n41 | 39 | 0.5 |
| n41 | 0.5 |
| DC\_39\_n78 | 39 | 0.3 |
| n78 | 0.8 |
| DC\_39\_n79 | 39 | 0.3 |
| n79 | 0.8 |
| DC\_40\_n1 | n1 | 0.5 |
| 40 | 0.5 |
| DC\_40\_n415 | 40 | 0.5 |
| n41 | 0.5 |
| DC\_40\_n77 | n77 | 0.5 |
| DC\_40\_n78 | n78 | 0.56 |
| DC\_40\_n79 | 40 | 0.3 |
| n79 | 0.8 |
| DC\_41\_n3 | 41 | 0.33 |
| 0.84 |
| n3 | 0.5 |
| DC\_41\_n28 | 41 | 0.3 |
| n28 | 0.3 |
| DC\_41\_n77 | 41 | 0.3 |
| n77 | 0.8 |
| DC\_41\_n78 | 41 | 0.3 |
| n78 | 0.8 |
| DC\_41\_n79 | 41 | 0.3 |
| n79 | 0.8 |
| DC\_42\_n28 | 42 | 0.5 |
| n28 | 0.8 |
| DC\_42\_n51 | 42 | 0.6 |
| n51 | 0.8 |
| DC\_48\_n5 | 48 | 0.3 |
| n5 | 0.3 |
| DC\_48\_n12 | 48 | 0.3 |
| n12 | 0.3 |
| DC\_48\_n66 | 48 | 0.8 |
| n66 | 0.6 |
| DC\_48\_n71  DC\_48-48\_n71  DC\_48-48-48\_n71 | 48 | 0.3 |
| n71 | 0.3 |
| DC\_66\_n2 | 66 | 0.5 |
| n2 | 0.5 |
| DC\_66\_n5,  DC\_66-66\_n5,  DC\_66-66-66\_n5 | 66 | 0.3 |
| n5 | 0.3 |
| DC\_66\_n7 | 66 | 0.5 |
| n7 | 0.5 |
| DC\_66\_n12 | 66 | 0.8 |
| n12 | 0.3 |
| DC\_66\_n25 | 66 | 0.5 |
| n25 | 0.5 |
| DC\_66\_n38 | 66 | 0.5 |
| n38 | 0.5 |
| DC\_66\_n41 | 66 | 0.5 |
| n41 | 0.81 |
| 1.32 |
| DC\_66\_n48,  DC\_66-66\_n48 | 66 | 0.6 |
| n48 | 0.8 |
| DC\_66\_n71 | 66 | 0.3 |
| n71 | 0.3 |
| DC\_66\_n78 | 66 | 0.6 |
| n78 | 0.8 |
| DC\_71\_n5 | 71 | 0.5 |
| n5 | 0.5 |
| DC\_71\_n38 | 71 | 0.6 |
| n38 | 0.3 |
| DC\_71\_n48 | 71 | 0.3 |
| n48 | 0.3 |
| DC\_71\_n66 | 71 | 0.3 |
| n66 | 0.3 |
| DC\_71\_n78 | 71 | 0.5 |
| n78 | 0.8 |
| NOTE 1: The requirement is applied for UE transmitting on the frequency range of 2545-2690 MHz.  NOTE 2: The requirement is applied for UE transmitting on the frequency range of 2496-2545 MHz.  NOTE 3: Applicable for the frequency range of 2515 – 2690 MHz.  NOTE 4: Applicable for the frequency range of 2496 - 2515 MHz.  NOTE 5: Applicable for UE supporting inter-band EN-DC without simultaneous Rx/Tx.  NOTE 6: Only applicable for UE supporting inter-band carrier aggregation with uplink in one E-UTRA band and without simultaneous Rx/Tx. | | |

## << Sixth changes >>

#### 6.5B.3.3 Inter-band EN-DC within FR1

6.5B.3.3.1 General spurious emissions

The general spurious emissions requirements specified in clause 6.6.3.1 of TS 36.101 [4], clause 6.5.3.1 of TS 38.101-1 [2] and TS 38.101-2 [3] apply for each component carrier. For the case of inter-band EN-DC with a single carrier per cell group, the general spurious emissions requirements also apply with both downlink carrier and both both uplink carriers active. Limits on configured maximum output power for the uplink according to clause 6.2B.4 apply.

NOTE: The general spurious emission requirements with both uplink carriers active are allowed to be verified for only a single inter-band EN-DC configuration per NR band. Furthermore, the requirements are allowed to be verified by measuring spurious emissions at the specific frequencies where second and third order intermodulation products generated by the two transmitted carriers can occur.

Table 6.5B.3.3.1-1: (Void)

##### 6.5B.3.3.2 Spurious emission band UE co-existence

This clause specifies the requirements for the specified EN-DC, for coexistence with protected bands. The requirements in Table 6.5B.3.3.2-1 apply on each component carrier with all component carriers are active.

NOTE: For inter-band EN-DC with uplink assigned to one LTE band and one NR band the requirements in Table 6.5B.3.3.2-1 could be verified by measuring spurious emissions at the specific frequencies where second and third order intermodulation products generated by the two transmitted carriers can occur;

Table 6.5B.3.3.2-1: Requirements

| EN-DC Configuration | Spurious emission | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Protected band | Frequency range (MHz) | | | Maximum Level (dBm) | MBW (MHz) | NOTE |
| DC\_1\_n3 | E-UTRA Band 1, 5, 7, 8, 11, 18, 19, 20, 21, 26, 27, 28, 31, 32, 38, 40, 41, 43, 44, 50, 51, 65, 67, 72, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3, 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA band 22, 42, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 16 |
| Frequency range | 1880 |  | 1895 | -40 | 1 | 5,17 |
| Frequency range | 1895 |  | 1915 | -15.5 | 5 | 5, 7, 17 |
| Frequency range | 1915 |  | 1920 | +1.6 | 5 | 5, 7, 17 |
| DC\_1\_n5 | E-UTRA Band 1, 5, 7, 8, 22, 26, 28, 31, 38, 40, 42, 43, 50, 51, 65, 73, 74  NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3,34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA band 41, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_1\_n7 | E-UTRA Band 1, 5, 7, 8, 20, 22, 26, 27, 28, 31,32, 40, 42, 43, 50, 51, 52, 65, 67, 72, 74, 75, 76  NR Band n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| band n77 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| band 3, 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 1880 |  | 1895 | -40 | 1 | 5,16 |
| Frequency range | 1895 |  | 1915 | -15.5 | 5 | 5, 7, 16 |
| Frequency range | 1915 |  | 1920 | +1.6 | 5 | 5, 7, 16 |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_1\_n8 | E-UTRA Band 20, 28, 31, 32, 38, 40, 45, 50, 51, 65, 67, 68, 69, 72, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3, 7, 22, 41, 42, 43, 52  NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1, 8, 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 12 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 12 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 12, 15 |
| Frequency range | 1880 |  | 1895 | -40 | 1 | 5, 16 |
| Frequency range | 1895 |  | 1915 | -15.5 | 5 | 5, 7, 16 |
| Frequency range | 1915 |  | 1920 | +1.6 | 5 | 5, 7, 16 |
| DC\_1\_n20 | E-UTRA Band 1, 3, 7, 8, 22, 31, 32, 33, 40, 43, 50, 51, 65, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 38, 42, 69  NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 20, 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 758 | - | 788 | -50 | 1 |  |
| DC\_1\_n28 | E-UTRA Band 5, 7, 8, 18, 19, 20, 26, 27, 31, 32, 38, 40, 41, 50, 51, 72, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42, 43, 75, 76  NR band n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA band 3, 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 11 |
| E-UTRA Band 1, 65 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 10 |
| Frequency range | 470 | - | 694 | -42 | 8 | 5, 17 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 14 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 662 | - | 694 | -26.2 | 6 | 5 |
| Frequency range | 1880 | - | 1895 | -40 | 1 | 5,16 |
| Frequency range | 1895 | - | 1915 | -15.5 | 5 | 5, 7, 16 |
| Frequency range | 1915 | - | 1920 | +1.6 | 5 | 5, 7, 16 |
| Frequency range | 1839.9 | - | 1879.9 | -50 | 1 | 5 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 9, 15 |
| DC\_1\_n38 | E-UTRA Band 1, 3, 5, 8, 20, 22, 27, 28, 31, 32, 33, 34, 40, 42, 43, 50, 51, 65, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_1\_n40 | E-UTRA Band 1, 5, 7, 8, 11, 18, 19, 20, 21, 22, 26, 27, 28, 31, 32, 38, 41, 42, 43, 44, 45, 50, 51, 52, 65, 67, 68, 69, 72, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Band 3, 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 1880 |  | 1895 | -40 | 1 | 5, 17 |
| Frequency range | 1895 |  | 1915 | -15.5 | 5 | 5, 7, 17 |
| Frequency range | 1915 |  | 1920 | +1.6 | 5 | 5, 7, 17 |
| DC\_1\_n41 | E-UTRA Band 3, 4, 5, 8, 12, 13, 14, 17, 19, 20, 21, 24, 26, 27, 28, 29, 30, 31, 32, 40, 42, 43, 44, 45, 50, 51, 52, 66, 67, 68, 71, 72, 73, 75, 76, 85  NR Band n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| NR Band n77, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1880 |  | 1895 | -40 | 1 | 5, 8 |
| Frequency range | 1895 |  | 1915 | -15.5 | 5 | 5, 7, 8 |
| Frequency range | 1915 |  | 1920 | +1.6 | 5 | 5, 7, 8, 20 |
| E-UTRA Band 9, 11, 18, 19, 21, 74 | FDL\_low | - | FDL\_high | -50 | 1 | 20 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 20 |
| DC\_1A\_n50A | E-UTRA Band 3, 4, 5, 7, 8, 12, 13, 17, 18, 19, 20, 26, 27, 28, 29, 31, 38, 40, 41, 42, 43, 44, 48, 52, 66, 67, 68, 69, 72, 73, 85  NR Band n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| NR Band n77 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1880 |  | 1895 | -40 | 1 | 5,16 |
| Frequency range | 1895 |  | 1915 | -15.5 | 5 | 5, 7, 16 |
| Frequency range | 1915 |  | 1920 | +1.6 | 5 | 5, 7, 16 |
| Frequency range | 1400 |  | 1427 | -32 | 27 |  |
| DC\_1\_n51 | E-UTRA Band 7, 12, 13, 17, 20, 22, 27, 28, 29, 31, 38, 44, 48, 67, 68, 69, 72, 73 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3, 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5, 2 |
| Frequency range | 1880 | - | 1895 | -40 | 1 | 5, 16 |
| Frequency range | 1895 | - | 1915 | -15.5 | 5 | 5, 7, 16 |
| Frequency range | 1915 | - | 1920 | +1.6 | 5 | 5, 7, 16 |
| E-UTRA Band 5, 6, 8, 26, 30, 40, 41, 42, 43, 46  NR Band n77, n78, n79, | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_1\_n71 | E-UTRA Band 1, 5, 26, | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 41 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 71 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_1\_n77  DC\_1\_n84\_ULSUP-TDM\_n77 | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 20, 21, 26, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1880 | - | 1895 | -40 | 1 | 5, 8 |
| Frequency range | 1895 | - | 1915 | -15.5 | 5 | 5, 7, 8 |
| Frequency range | 1915 | - | 1920 | +1.6 | 5 | 5, 7, 8 |
| DC\_1\_n78  DC\_1\_n84\_ULSUP-TDM\_n78 | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 20, 21, 26, 28, 34, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1880 | - | 1895 | -40 | 1 | 5, 8 |
| Frequency range | 1895 | - | 1915 | -15.5 | 5 | 5, 7, 8 |
| Frequency range | 1915 | - | 1920 | +1.6 | 5 | 5, 7, 8 |
| DC\_1\_n79  DC\_1\_n84\_ULSUP-TDM | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 21, 26, 28, 34, 40, 41, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1880 | - | 1895 | -40 | 1 | 5, 8 |
| Frequency range | 1895 | - | 1915 | -15.5 | 5 | 5, 7, 8 |
| Frequency range | 1915 | - | 1920 | +1.6 | 5 | 5, 7, 8 |
| DC\_1\_n80 | E-UTRA Band 1, 5, 7, 8, 11, 18, 19, 20, 21, 26, 27, 28, 31, 32, 38, 40, 41, 43, 44, 45, 50, 51, 65, 67, 68, 69, 72, 73,74, 75, 76,  NR Band n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3, 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 22, 42,  NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 13 |
| DC\_2\_n5 | E-UTRA Band 4, 5, 10, 12, 13, 14, 17, 24, 26, 28, 29, 30, 42, 48, 50, 51, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25, 48 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 41, 43 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_2\_n7 | E-UTRA Band 2, 4, 5, 7, 10, 12, 13, 14, 17, 26, 27, 28, 29, 30, 42, 50, 51, 66, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 43 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 2570 | - | 2575 | 1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_2\_n12 | E-UTRA Band 5, 13, 14, 17, 24, 26, 27, 30, 41, 50, 53, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 25, 85  NR band n12 | FDL\_low | - | FDL\_high | -50 | 1 | 3 |
| E-UTRA Band 2 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 4, 10, 51, 66, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_2\_n38 | E-UTRA Band 4, 5, 10, 12, 13, 14,17, 27, 28, 29, 30, 42, 50, 51, 66, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 43 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_2\_n41 | E-UTRA Band 4, 5, 10, 12, 13, 14, 17, 24, 26, 27, 28, 29, 30, 42, 48, 50, 51, 53, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 43 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_2A\_n48A | E-UTRA Band 4, 5, 12, 13, 14, 17, 24, 26, 29, 30, 41, 50, 51, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_2\_n66 | E-UTRA Band 4, 5, 10, 12, 13, 14, 17, 24, 26, 27, 28, 29, 30, 41, 50, 51, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 42, 48 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_2\_n71 | E-UTRA Band 4, 5, 12, 13, 14, 17, 24, 26, 29, 30, 48, 66 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25, 41, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 71 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_2\_n78 | E-UTRA Band 4, 5, 10, 12, 13, 14, 17, 24, 26, 27, 28, 29, 30, 41, 48, 50, 51, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_3\_n1 | E-UTRA Band 1, 5, 7, 8, 11, 18, 19, 20, 21, 26, 27, 28, 31, 32, 38, 40, 41, 43, 44, 50, 51, 65, 67, 72, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3, 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA band 22, 42, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 16 |
| Frequency range | 1880 |  | 1895 | -40 | 1 | 5,17 |
| Frequency range | 1895 |  | 1915 | -15.5 | 5 | 5, 7, 17 |
| Frequency range | 1915 |  | 1920 | +1.6 | 5 | 5, 7, 17 |
| DC\_3\_n5 | E-UTRA Band 1, 5, 7, 8, 22, 26, 28, 31, 38, 40, 42, 43, 50, 51, 65, 73, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3,34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_3\_n7 | E-UTRA Band 1, 5, 7, 8, 20, 26, 27, 28, 31, 32, 33, 34, 40, 43, 44, 50, 51, 65, 67, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA band 22, 42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_3\_n8 | E-UTRA Band 1, 20, 28, 31, 32, 33, 34, 38, 39, 40, 45, 50, 51, 65, 67,68, 69, 72, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3, 8 | FDL\_low | - | FDL\_high | -50 | 1 | 2, 5 |
| E-UTRA band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 12 |
| E-UTRA band 7, 22, 41, 42, 43, 52  NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3.12 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5. 12 |
| DC\_3\_n20 | E-UTRA Band 1, 7, 8, 31, 32, 33, 34, 40, 43, 50, 51, 65, 67, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3  NR band n20 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 22, 38, 42, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 758 | - | 788 | -50 | 1 |  |
| DC\_3\_n28 | E-UTRA Band 1, 42, 43, 50, 51, 65, 74, 75, 76  NR band n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 10 |
| E-UTRA band 3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 5, 7, 8, 20, 26, 27, 31, 34, 38, 40, 41, 72 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 11, 18, 19, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 13 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 13 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 14 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 9 |
| DC\_3\_n34 | E-UTRA Band 1, 7, 8, 11, 18, 19, 20, 21, 26, 28, 31, 32, 33, 38, 39, 40, 41, 43, 44, 45, 50, 51, 65, 67, 69,72, 73, 74, 75, 76, 79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 22, 42, 52  NR Band n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_3\_n38 | E-UTRA Band 1, 5, 8, 20, 27, 28, 31, 32, 33, 34, 40, 42, 43, 50, 51, 65, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 22, 42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_3\_n40 | E-UTRA Band 1, 5, 7, 8, 20, 26, 27, 28, 31, 32, 33, 34, 38, 39, 41, 43, 44. 45, 50, 51, 65, 67, 68, 69, 72, 73, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 22, 42, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_3-n41 | E-UTRA Band 1, 5, 8, 20, 26, 27, 28, 34, 39, 40, 44, 45, 50, 51, 65, 73, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 11, 18, 19, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 14, 20 |
| E-UTRA Band 42,  NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 20 |
| DC\_3\_n41,  DC\_3\_n80\_ULSUP-TDM | E-UTRA Band 1, 5, 8, 26, 27, 28, 34, 39, 40, 44, 45, 50, 51, 65, 73, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 11, 18, 19, 21 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_3A\_n50A | E-UTRA Band 5, 7, 8, 12, 13, 17, 18, 19, 20, 26, 27, 28, 29, 31, 32, 38, 40, 41, 43, 44, 48, 52, 67, 68, 69, 72, 73 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 1, 2, 4, 33, 34, 39, 42, 65, 66  NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 |  |
| Frequency range | 1400 | - | 1427 | -42 | 27 |  |
| DC\_3\_n51 | E-UTRA Band 7, 8, 12, 13, 17, 20, 27, 28, 31, 33, 38, 48, 67, 68, 69, 72, 73 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 1, 5, 6, 22, 26, 30, 34, 36, 40, 41, 42, 43, 44, 46, 65, 71 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_3\_n71 | E-UTRA Band 5, 26, | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 41 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 3, 71 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_3\_n77  DC\_3\_n80\_ULSUP-TDM\_n77 | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 20, 21, 26, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_3\_n78  DC\_3\_n80\_ULSUP-TDM\_n78, | E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 20, 21, 26, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_3\_n79 DC\_3\_n80\_ULSUP-TDM\_n79, | E-UTRA Band 1, 3, 5, 8, 11, 18, 19, 21, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_3\_n82 | E-UTRA Band 1, 3 7, 8, 20，22, 31, 32, 33, 34, 38, 40, 43, 50, 51, 65, 67, 68, 69, 72,74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_3\_n84 | E-UTRA Band 1, 5, 7, 8, 11, 18, 19, 20, 21, 26, 27, 28, 31, 32, 38, 40, 41, 43, 44, 45, 50, 51, 65, 67, 68, 69, 72, 73,74, 75, 76  NR Band n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_4\_n38 | E-UTRA Band 2, 4, 5, 10, 12, 13, 14, 17, 27, 28, 29, 30, 43, 50, 51, 66, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_4\_n41 | E-UTRA Band 2, 4, 5, 10, 12, 13, 14, 17, 24, 25, 26, 27, 28, 29, 30, 48, 50, 51, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_4\_n78 | E-UTRA Band 5, 7, 26, 28, 41 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_5\_n2 | E-UTRA Band 4, 5, 10, 12, 13, 14, 17, 24, 28, 29, 30, 42, 50, 51, 53, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 25 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| NR Band n2 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 26 | 859 | - | 869 | -27 | 1 |  |
| E-UTRA Band 41, 43 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_5\_n7 | E-UTRA Band 1, 2, 3, 4, 5, 7, 8, 10, 12, 13, 14, 17, 28, 29, 30, 31, 34, 40, 42, 43, 65, 66, 71, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 52  NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA band 26 | 859 | - | 869 | -27 | 1 |  |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 7, 6 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 7, 6 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 14 |
| DC\_5\_n12 | E-UTRA Band 2, 5, 12, 13, 14, 17, 24, 25, 26, 30, 42, 43 50, 51, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Bands 4, 10, 41, 48, 66, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 12, 85 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_5\_n38 | E-UTRA Band 1, 2, 3, 4, 5, 8, 10, 12, 13, 14, 17, 28, 29, 30, 31, 34, 40, 42, 43, 50, 51, 65, 66, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_5\_n40 | E-UTRA Band 1, 3, 5, 7, 8, 28, 31, 34, 38, 42, 43, 45, 65, 73 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 26 | 859 | - | 869 | -27 | 1 |  |
| E-UTRA Band 41, 52 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_5A\_n48A | E-UTRA Band 2, 4, 5, 12, 13, 14, 17, 24, 25, 26, 29, 30, 41, 50, 51, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 26 | 859 | - | 869 | -27 | 1 |  |
| E-UTRA Band 41 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_5\_n66 | E-UTRA Band 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 13, 14, 17, 24, 25, 28, 29, 30, 34, 38, 40, 43, 45, 50, 51, 65, 66, 70, 71, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 26 | 859 | - | 869 | -27 | 1 |  |
| E-UTRA Band 41, 42, 48, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 18, 19 | FDL\_low | - | FDL\_high | -40 | 1 |  |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_5\_n71 | E-UTRA Band 4, 5, 12, 13, 14, 17, 24, 26, 30, 48, 66, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25, 41, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 29 | FDL\_low | - | FDL\_high | -38 | 1 | 5 |
| E-UTRA Band 71 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_5\_n78 | E-UTRA Band 1, 2, 3, 4, 5, 7, 8, 10, 12, 13, 14, 17, 24, 25, 28, 29, 30, 31, 34, 38, 40, 45, 48, 65, 66, 70 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 26 | 859 | - | 869 | -27 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 4 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| E-UTRA Band 41 | FDL\_low | - | FDL\_high | -50 | 1 | 7 |
| E-UTRA Band 18, 19 | FDL\_low | - | FDL\_high | -40 | 1 | 4 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 4 |
| DC\_5\_n79 | Bands 1, 2, 3, 4, 5, 7, 8, 10, 12, 13, 14, 17, 24, 25, 28, 29, 30, 31, 34, 38, 40, 42, 43, 45, 48, 50, 51, 65, 66, 70, 71, 73, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 26 | 859 | - | 869 | -27 | 1 |  |
| Bands 41, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 18, 19 | FDL\_low | - | FDL\_high | -40 | 1 | 4 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 4 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 4 |
| NR Band n257 | 26500 | - | 29500 | -5 | 100 |  |
| NR Band n258 | 24250 | - | 27500 | -5 | 100 |  |
| DC\_7\_n1 | Band 1, 5, 7, 8, 20, 22, 26, 27, 28, 31,32, 40, 42, 43, 50, 51, 52, 65, 67, 72, 74, 75, 76, n78,n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| band n77 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| band 3, 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 1880 |  | 1895 | -40 | 1 | 5,16 |
| Frequency range | 1895 |  | 1915 | -15.5 | 5 | 5, 7,16 |
| Frequency range | 1915 |  | 1920 | +1.6 | 5 | 5, 7,16 |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_7\_n3 | E-UTRA Band 1, 5, 7, 8, 20, 26, 27, 28, 31, 32, 33, 34, 40, 43, 50, 51, 65, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA band 22, 42, 52  NR band n78, n77 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_7\_n5 | E-UTRA Band 1, 2, 3, 4, 5, 7, 8, 10, 12, 13, 14, 17, 22, 26, 28, 29, 30, 31, 40, 42, 43, 50, 51, 65, 66, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 52  NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 7, 6 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 7, 6 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 14 |
| DC\_7\_n8 | E-UTRA Band 1, 10, 20, 28, 31, 32, 33, 34, 40, 50, 51, 65, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3, 7, 22, 42, 43, 52  NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 8 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_7\_n20 | E-UTRA Band 1, 3, 7, 8, 22, 31, 32, 33, 34, 40, 43, 50, 51, 65, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42, 52  NR band n78, n77 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 20 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_7\_n28 | E-UTRA Band 2, 3, 5, 7, 8, 20, 26, 27, 31, 34, 40, 72 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 1, 4, 10, 42, 43, 50, 51, 65, 66, 74, 75, 76  NR band n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 10 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_7\_n40 | E-UTRA Band 1, 3, 5, 7, 8, 20, 22, 26, 27, 28, 31, 32, 33, 34, 42, 43, 50, 51, 52, 65, 67, 68, 72, 74, 75, 76, 77, 78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_7\_n51 | E-UTRA Band 2, 3, 5, 8, 26, 30, 31, 32, 33, 34, 40, 48, 72 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 7, 16 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 7, 16 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5 |
| E-UTRA Band 1, 4, 10, 12, 13, 14, 17, 20, 22, 23, 27, 28, 29, 42, 43, 44, 46, 65, 66, 67, 68  NR Band n77, n78, n79, | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_7\_n66 | E-UTRA Band 2, 4, 5, 7, 10, 12, 13, 14, 17, 26, 27, 28, 29, 30, 43, 50, 51, 66, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_7\_n71 | E-UTRA Band 4, 5, 12, 13, 14, 17, 26, 30, 66, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 29 | FDL\_low | - | FDL\_high | -38 | 1 | 5 |
| Frequency range | 2570 | - | 2575 | 1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_7\_n77 | E-UTRA Band 1, 2, 3, 4, 5, 7, 8, 10, 11, 18, 19, 20, 21, 26, 27, 28, 31, 32, 33, 34, 40, 50, 51, 65, 66, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_7\_n78 | E-UTRA Band 1, 2, 3, 4, 5, 7, 8, 10, 11, 18, 19, 20, 21, 26, 27, 28, 31, 32, 33, 34, 40, 50, 51, 65, 66, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_8\_n1 | E-UTRA Band 20, 28, 31, 32, 38, 40, 50, 51, 65, 67, 72, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3, 7, 22, 41, 42, 43, 52  NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1, 8, 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 12 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 12 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 12, 15 |
| Frequency range | 1880 |  | 1895 | -40 | 1 | 5, 16 |
| Frequency range | 1895 |  | 1915 | -15.5 | 5 | 5, 7, 16 |
| Frequency range | 1915 |  | 1920 | +1.6 | 5 | 5, 7, 16 |
| DC\_8\_n3 | E-UTRA Band 1, 20, 28, 31, 32, 33, 34, 38, 39, 40, 44, 50, 51, 65, 67, 72, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3, 8 | FDL\_low | - | FDL\_high | -50 | 1 | 2, 5 |
| E-UTRA band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 12 |
| E-UTRA band 7, 22, 41, 42, 43, 52  NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3.12 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5. 12 |
| DC\_7\_n80 | E-UTRA Band 1, 5, 7, 8, 20, 26, 27, 28, 31, 32, 33, 34, 40, 42, 43, 50, 51, 65, 67, 68, 72, 74, 75, 76.  NR Band n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3, 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 22, 42,  NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_8\_n20 | E-UTRA Band 1, 31, 32, 33, 34, 40, 50, 51, 65, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3, 7, 22, 38, 42, 43, 52, 69  NR band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 8, 20 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 758 | - | 788 | -50 | 1 |  |
| DC\_8\_n28 | E-UTRA Band 20, 31, 34, 38, 40, 72 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3, 7, 22, 41, 42, 43, 50, 51, 65, 73, 74, 75, 76  NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 2, 9, 10 |
| E-UTRA Band 8 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 11, 12 |
| Frequency range | 470 | - | 694 | -42 | 8 | 5, 17 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 14 |
| Frequency range | 662 | - | 694 | -26.2 | 6 | 5 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 12 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 9, 12 |
| DC\_8\_n34 | E-UTRA Band 1, 20, 28, 31, 32, 33, 38, 39, 40, 45, 50, 51, 65, 67, 69,72, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3, 7, 22, 41, 42, 43, 52  NR Band n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 8 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 12 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 12 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 12 |
| DC\_8\_n39 | E-UTRA Band 1, 28, 34, 40, 45, 50, 51, 73, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| 1. UTRA Band 22, 41, 42, 52   NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 8 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_8\_n40 | E-UTRA Band 1, 20, 28, 31, 32, 33, 34, 38, 39,, 45, 50, 51, 65, 67, 68, 69, 72, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3, 7, 22, 41, 42, 43, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 8 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 12 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 12 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | ３, 12 |
| DC\_8\_41 | E-UTRA Band 1, 28, 34, 39, 40, 45, 50, 51, 65, 73,74, n77,78,79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3, 42, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_8\_41,  DC\_8\_n81\_ULSUP-TDM | E-UTRA Band 1, 28, 34, 39, 40, 45, 50, 51, 65, 73, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3, 42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 8 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 13 |
| Frequency range | 1884.5 |  | 1915.7 | -41 | 0.3 | 3 |
| DC\_8\_n77 | E-UTRA Band 1, 20, 28, 31, 32, 33, 34, 38, 39, 40, 44, 45, 50, 51, 65, 67, 68, 69, 72, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3, 7, 22, 41 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 8 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 12 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 12 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 12 |
| DC\_8\_n78  DC\_8\_n81\_ULSUP-TDM\_n78 | E-UTRA Band 1, 8, 20, 28, 34, 39, 40,65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3, 7, 41 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 12 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 12 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 12 |
| DC\_8\_n79  DC\_8\_n81\_ULSUP-TDM\_n79 | E-UTRA Band 1, 8, 28, 34, 39, 40, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3,41,42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 12 |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 12 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_8\_n80 | E-UTRA Band 1, 20, 28, 31, 32, 33, 34, 38, 39, 40, 45, 50, 51, 65, 67, 68, 69, 72, 73, 74, 75, 76  NR Band n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3, 8 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 3, 7, 22, 41, 42, 43, 52  NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 13 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_8A\_93A\_ULSUP-TDM,  DC\_8A\_94A\_ULSUP-TDM | E-UTRA Band 1, 20, 28, 31, 32, 33, 34, 38, 39, 40, 45, 50, 51, 65, 67, 68, 69, 72, 73, 74, 75, 76 | FDL\_low  FDL\_low | -  - | FDL\_high  FDL\_high | -50  -50 | 1  1 | 2 |
| E-UTRA band 3, 7, 22, 41, 42, 43, 52,  NR Band n77, n78 | FDL\_low  FDL\_low | -  - | FDL\_high  FDL\_high | -50  -50 | 1  1 | 5 |
| E-UTRA 8 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_11\_n3 | E-UTRA Band 1, 28, 34, 65  NR band n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 11, 18, 19, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 13 |
| E-UTRA Band 42  NR band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 13 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_11\_28 | E-UTRA Band 3, 18, 19, 34  NR band n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 1, 42, 65  NR band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 10 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 11 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 14 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 9 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_11\_n77 | E-UTRA Band 1, 3, 18, 19, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_11\_n78 | E-UTRA Band 1, 3, 18, 19, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_11\_n79 | E-UTRA Band 1, 3, 18, 19, 28, 34, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_12\_n2 | E-UTRA Band 5, 13, 14, 17, 24, 26, 27, 30, 41, 50, 53, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 12, 25, 85 | FDL\_low | - | FDL\_high | -50 | 1 | 3 |
| E-UTRA Band 2 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 4, 10, 51, 66, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_12\_n5 | E-UTRA Band 2, 5, 12, 13, 14, 17, 24, 25, 26, 30, 42, 43 50, 51, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Bands 4, 10, 41, 48, 66, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 12, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_12\_n66 | E-UTRA Band 2, 4, 5, 13, 14, 17, 24, 25, 26, 27, 29, 30, 41, 50, 51, 70, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 4, 10, 48 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 12, 85 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 2, 5, 12, 13, 14, 17, 24, 25, 30, 42, 43 50, 51, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_12\_n7 | E-UTRA Band 2, 5, 7, 13, 14, 17, 26, 27, 30, 74,  NR Band n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 4, 10, 50, 51,66 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 12, 85 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_12\_n25 | E-UTRA Band 5, 13, 14, 17, 24, 26, 27, 30, 41, 48, 53, 71 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 4, 10, 66, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 2, 12, 25, 85 | FDL\_low | - | FDL\_high | -50 | 1 | 15 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 14 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 16 |
| Frequency range | 1880 |  | 1895 | -40 | 1 | 5,17 |
| Frequency range | 1895 |  | 1915 | -15.5 | 5 | 5, 7, 17 |
| DC\_12\_n38 | E-UTRA Band 2, 5, 13. 14. 17, 27, 30, 74 NR band n38 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 4, 10, 50, 51, 66 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA band 12, 85 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_12\_n41 | E-UTRA Band 2, 5, 13, 14, 17, 24, 25, 26, 27, 30, 48, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 4, 10, 50, 51, 66, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA band 12, 85 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_12\_n78 | E-UTRA Band 2, 5, 7. 13, 17, 25, 26, 41, 71 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 4, 66 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA band 12 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_13\_n2 | E-UTRA Band 4, 5,12,13,17, 26, 29, 41, 48, 66, 70, 71 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2,14, 25 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 30 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 769 | - | 775 | -35 | 0.00625 | 5 |
| Frequency range | 799 | - | 805 | -35 | 0.00625 | 5, 21 |
| DC\_13\_n5 | E-UTRA Band 2, 4, 5, 10, 12, 13, 17, 25, 26, 29, 48, 50, 51, 53, 66, 70, 71, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 26 | 859 | - | 869 | -27 | 1 |  |
| E-UTRA Band 24, 30, 41 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 14 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 769 | - | 775 | -35 | 0.00625 | 5 |
| Frequency range | 799 | - | 805 | -35 | 0.00625 | 5 |
| DC\_13\_n7 | E-UTRA Band 2, 4, 5, 7，10, 12, 13, 17,25，26, 27, 29, 50, 51, 66，74, 85  NR Band n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 30 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 14 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 769 | - | 775 | -35 | 0.00625 | 5 |
| Frequency range | 799 | - | 805 | -35 | 0.00625 | 5, 21 |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_13A\_n48A | E-UTRA Band 2, 4, 5, 10, 12, 13, 14, 17, 25, 26, 27, 29, 30, 41, 50, 51, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 14 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 24, 30 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 769 | - | 775 | -35 | 0.00625 | 5 |
| Frequency range | 799 | - | 805 | -35 | 0.00625 | 5 |
| DC\_13\_n66 | Bands 2, 4, 5, 7, 10, 12, 13, 17, 25, 26, 27, 29, 41, 53, 66, 70, 71, 85 and | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 14 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 769 | - | 775 | -35 | 0.00625 | 5 |
| Frequency range | 799 | - | 805 | -35 | 0.00625 | 5, 21 |
| Bands 24, 30, 46, 48 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_13A\_n71A | E-UTRA Band 4, 5, 12, 13, 17, 26, 48, 66, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 24, 25, 30, 41, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 29 | FDL\_low | - | FDL\_high | -38 | 1 | 5 |
| E-UTRA Band 14, 71 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 769 | - | 775 | -35 | 0.00625 | 5 |
| Frequency range | 799 | - | 805 | -35 | 0.00625 | 5, 21 |
| DC\_13\_n78 | E-UTRA Band 2, 5, 7, 12, 13, 25, 26, 41, 66  NR Band n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 769 | - | 775 | -35 | 0.00625 | 5 |
| Frequency range | 799 | - | 805 | -35 | 0.00625 | 5, 21 |
| DC\_14\_n2 | E-UTRA Band 4, 5, 10, 12, 13, 14, 17, 24, 26, 27, 29, 30, 41, 48, 53, 66, 70, 71, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 2, 25 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 769 | - | 775 | -35 | 0.00625 | 5 |
| Frequency range | 799 | - | 805 | -35 | 0.00625 | 5 |
| DC\_14\_n66 | E-UTRA Band 2, 4, 5, 10, 12, 13, 14, 17, 24, 25, 26, 27, 29, 30, 41, 53, 66, 70, 71, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 48 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 769 | - | 775 | -35 | 0.00625 | 5 |
| Frequency range | 799 | - | 805 | -35 | 0.00625 | 5 |
| DC\_18\_n3 | E-UTRA Band 1, 3, 11, 18, 19, 21, 28, 34, 42, 65  NR Band n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_18\_n77 | E-UTRA Band 1, 3, 11, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_18\_n78 | E-UTRA Band 1, 3, 11, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_18\_n79 | E-UTRA Band 1, 3, 11, 21, 28, 34, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_19\_n77 | E-UTRA Band 1, 3, 11, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_19\_n78 | E-UTRA Band 1, 3, 11, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_19\_n79 | E-UTRA Band 1, 3, 11, 21, 28, 34, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_20\_n1 | E-UTRA Band 1, 3, 7, 8, 20, 22, 31, 32, 33, 34, 40, 42, 43, 50, 51, 65, 67, 68, 72, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 38, 69  NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 758 | - | 788 | -50 | 1 |  |
| DC\_20\_n3 | E-UTRA Band 1, 7, 8, 31, 32, 33, 34, 40, 43, 50, 51, 65, 67, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 20  E-UTRA Band 3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 22, 38, 42, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 758 | - | 788 | -50 | 1 |  |
| DC\_20\_n7 | E-UTRA Band 1, 3, 7, 8, 22, 31, 32, 33, 34, 40, 43, 50, 51, 65, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42, 52 NR band n78, n77 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 20 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_20\_n8 | E-UTRA Band 1, 3, 7, 22, 28, 31, 32, 34, 38, 42, 43, 65, 75, 76  NR bandn78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_20\_n38 | E-UTRA Band 1, 3, 8, 22, 31, 32, 33, 34, 40, 43, 50, 51, 65, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 20 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_20\_n41 | E-UTRA Band 1, 2, 4, 10, 24, 25, 30, 31, 32, 33, 34, 39, 40, 43, 48, 50, 51, 65, 66, 70, 72, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3, 8, 12, 13, 14, 17, 38, 42, 44, 45, 52, 67, 68, 69, 71, 85  NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 758 | - | 788 | -50 | 1 |  |
| E-UTRA Band 9, 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 19 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 19 |
| DC\_20\_n28  DC\_20\_n83 | E-UTRA Band 1, 3, 7, 8, 22, 31, 32, 34, 38, 42, 43, 65, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_20A\_n50A | E-UTRA Band 2, 3, 7, 12, 17, 31, 33, 38, 39, 41, 43, 48, 52, 65, 66, 67, 68, 69, 72, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1400 | - | 1427 | -42 | 27 |  |
| E-UTRA Band 1, 4, 5, 8, 13, 34, 38, 40, 42, 43, 65, 66, 67, 68  NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 758 | - | 788 | -50 | 1 |  |
| DC\_20\_n51 | E-UTRA Band 1, 3, 4, 8, 17, 22, 28, 29, 31, 40, 43, 48, 65, 66, 68, 72 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 20 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| Frequency range | 758 | - | 788 | -50 | 1 |  |
| E-UTRA Band 2, 7, 25, 32, 33, 34, 35, 36, 37, 38, 39, 41, 42, 46, 69, 70  NR Band n77, n78, n79, | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_20\_n77 | E-UTRA Band 1, 3, 7, 8, 31, 32, 33, 34, 40, 50, 51, 65, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 20 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 38, 69 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| D DC\_20\_n78,  DC\_20\_n82\_ULSUP-TDM\_n78 | E-UTRA Band 1, 3, 7, 8, 31, 32, 33, 34, 40, 50, 51, 65, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 20 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 38, 69 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_20\_n80 | E-UTRA Band 1, 7, 8, 27, 28, 31, 32, 33, 34, 40, 43, 50, 51, 65, 67, 68, 72, 74, 75, 76.  NR Band n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3, 20 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 22, 42,  NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_20A\_91A\_ULSUP-TDM,  DC\_20A\_92A\_ULSUP-TDM | E-UTRA Band 1, 3, 7, 8, 22, 31, 32, 33, 34, 40, 42, 43, 50, 51, 65, 67, 68, 72, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 20 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 38, 42, 69,  NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 758 | - | 788 | -50 | 1 |  |
| DC\_21\_n77 | E-UTRA Band 1, 3, 18, 19, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_21\_n78 | E-UTRA Band 1, 3, 18, 19, 21, 28, 34, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_21\_n79 | E-UTRA Band 1, 3, 18, 19, 21, 28, 34, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_25\_n41 | E-UTRA Band 4, 5, 10, 12, 13 , 14, 17, 24, 26, 27, 28, 29, 30, 42, 45, 48, 66, 70, 71 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_26A\_n25A | 4, 5, 10, 12, 13, 14, 17, 24, 26, 29, 30, 42, 48, 53, 66, 70, 71, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| 2, 25 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| 41, 43 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_26\_n41 | E-UTRA Band 1, 2, 3, 4, 5, 10, 11, 12, 13 , 14, 17, 18, 19, 21, 24, 25, 26, 29, 30, 31, 34, 39, 42, 43, 48, 50, 51, 65, 66, 70, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 9, 11, 18, 19, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 19 |
| Frequency range | 1884.5 |  | 1915.7 | -41 | 0.3 | 3, 19 |
| Frequency range | 703 | - | 799 | -50 | 1 |  |
| Frequency range | 799 | - | 803 | -40 | 1 | 5 |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| DC\_26\_n77 | E-UTRA Band 1, 3, 5, 11, 18, 19, 21, 26, 34, 39, 40, 41, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 703 | - | 799 | -50 | 1 |  |
| Frequency range | 799 | - | 803 | -40 | 1 | 5 |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_26\_n78 | E-UTRA Band 1, 3, 5, 11, 18, 19, 21, 26, 34, 39, 40, 41, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 703 | - | 799 | -50 | 1 |  |
| Frequency range | 799 | - | 803 | -40 | 1 | 5 |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_26\_n79 | E-UTRA Band 1, 3, 5, 11, 18, 19, 21, 26, 34, 39, 40, 41, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 703 | - | 799 | -50 | 1 |  |
| Frequency range | 799 | - | 803 | -40 | 1 | 5 |
| Frequency range | 945 | - | 960 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| Frequency range | 2545 | - | 2575 | -50 | 1 |  |
| Frequency range | 2595 | - | 2645 | -50 | 1 |  |
| DC\_28\_n3 | E-UTRA Band 1, 22, 42, 43, 50, 51, 65, 74, 75, 76,  NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 11 |
| E-UTRA Band 3, 5, 7, 8, 18, 19, 20, 26, 27, 31, 34, 38, 40, 41, 72, 73  NR Band n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 10 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 14 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 9 |
| DC\_28\_n5 | E-UTRA Band 2, 3, 5, 7, 8, 12, 13, 14, 17, 18, 19, 24, 25, 26, 28, 29, 30, 31, 34, 38, 40, 45, 48, 70, 71, 85 | FDL\_low | - | FDL\_high | -50 |  |  |
| E-UTRA Band 1, 4, 10, 22, 32, 41, 42, 43, 50, 51, 52, 65, 66, 73, 74, 75, 76 NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 4 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 4 |
| Frequency range | 470 | - | 694 | -42 | 8 | 5, 17 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 14 |
| Frequency range | 662 | - | 694 | -26.2 | 6 | 5 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| DC\_28A\_n7A  DC\_28A\_n7B | E-UTRA Band 2, 3, 5, 8, 20, 26, 27, 31, 34, 40, 72 NR band n7 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 4, 10, 22, 32, 42, 43, 50, 51, 52, 65, 66, 74, 75, 76  NR band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 10 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_28\_n8 | E-UTRA Band 20, 31, 34, 38, 40, 72 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 3, 7, 22, 41, 42, 43, 50, 51, 52, 65, 73, 74, 75, 76  NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 8 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 12 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 10 |
| Frequency range | 470 | - | 694 | -42 | 8 | 5, 17 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 14 |
| Frequency range | 662 | - | 694 | -26.2 | 6 | 5 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 860 | - | 890 | -40 | 1 | 5, 12 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 12 |
| DC\_28\_n40 | E-UTRA Band 3, 5, 7, 8, 20, 26, 27, 31, 34, 38, 41, 72 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA band 22, 32, 42, 43, 50, 51, 52, 65, 73, 74, 75, 76  NR Band n8, n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_28\_n41 | E-UTRA Band 4, 10, 12, 13, 14, 17, 18, 19, 20, 26, 27, 29, 39, 42, 43, 50, 51, 52, 65, 66, 71, 73, 85  NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 10 |
| E-UTRA Band 2, 3, 5, 8, 24, 25, 30, 31, 34, 40, 44, 48, 70, 72 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 11, 21, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 11 |
| Frequency range | 470 | - | 694 | -42 | 8 | 5, 17 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 14 |
| Frequency range | 662 | - | 694 | -26.2 | 6 | 5 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 9 |
| DC\_28\_n50 | E-UTRA Band 4, 10, 29, 40, 42, 43, 52, 65, 66, 73, 85  NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 10 |
| E-UTRA Band 2, 3, 5, 7, 8, 18, 19, 25, 26, 27, 31, 34, 38, 39, 41, 48, 52, 72 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 470 | - | 694 | -42 | 8 | 5, 17 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 14 |
| Frequency range | 662 | - | 694 | -26.2 | 6 | 5 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 9 |
| Frequency range | 1400 |  | 1427 | -32 | 27 |  |
| DC\_28\_n51 | E-UTRA Band 2, 3, 5, 7, 8, 25, 26, 31, 34, 38, 40, 41, 66, 72 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 4, 10, 20, 22, 24, 32, 42, 43, 45, 46, 65, 66, 71, 73  NR band n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 2, 9, 10 |
| Frequency range | 470 | - | 694 | -42 | 8 | 5, 17 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 14 |
| Frequency range | 662 | - | 694 | -26.2 | 6 | 5 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| DC\_28\_n77 | E-UTRA Band 3, 5, 7, 8, 18, 19, 20, 26, 34, 39, 40, 41 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 1, 65 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 10 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 11 |
| Frequency range | 758 | - | 773 | -32 | 1 |  |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_28\_n78  DC\_28\_n83\_ULSUP-TDM\_n78 | E-UTRA Band 3, 5, 7, 8, 18, 19, 20, 26, 34, 39, 40, 41 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 1, 65 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 10 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 11 |
| Frequency range | 758 | - | 773 | -32 | 1 |  |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_28\_n79 | E-UTRA Band 3, 5, 8, 18, 19, 34, 39, 40, 41, 42 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 1, 65 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 10 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 11 |
| Frequency range | 758 | - | 773 | -32 | 1 |  |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_30\_n2 | E-UTRA Band 4, 5, 10, 12, 13, 14, 17, 24, 26, 27, 28, 29, 30, 41, 42, 48, 50, 51, 53, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 25 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 2 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 43 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_30\_n5 | E-UTRA Band 1, 2, 3, 4, 5, 7, 8, 10, 12, 13, 14, 17, 24, 25, 26, 28, 29, 30, 31, 34, 38, 40, 42, 43, 45, 48, 50, 51, 65, 66, 70, 71, 73, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 41, 48, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 18, 19 | FDL\_low | - | FDL\_high | -40 | 1 |  |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_30\_n66 | E-UTRA Band 2, 4, 5, 10, 12, 13, 14, 17, 24, 25, 26, 27, 29, 30, 38, 41, 66, 70, 71 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Band 48 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_38\_n78 | N/A | | | | | | |
| DC\_39\_n40 | E-UTRA Band 1, 8, 22, 26, 28, 34, 41, 42, 44, 45, 50, 51, 52, 73, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1805 |  | 1855 | -40 | 1 | 18 |
| Frequency range | 1855 |  | 1880 | -15.5 | 5 | 5, 7, 18 |
| DC\_39-n41 | E-UTRA Band 1, 8, 26, 28, 34, 40, 42, 44, 45, 50, 51, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1805 | - | 1855 | -40 | 1 | 5 |
| Frequency range | 1855 | - | 1880 | -15.5 | 5 | 5, 7, 19 |
| DC\_39\_n78 | E-UTRA Band 1, 8, 28, 34, 40, 41, 44, 45 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1805 | - | 1855 | -40 | 1 | 18 |
| Frequency range | 1855 | - | 1880 | -15.5 | 5 | 18 |
| DC\_39\_n79 | E-UTRA Band 1, 8, 28, 34, 40, 41, 44, 45 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1805 | - | 1855 | -40 | 1 | 18 |
| Frequency range | 1855 | - | 1880 | -15.5 | 5 | 18 |
| DC\_40\_n1 | E-UTRA Band 1, 3, 5, 7, 8, 20, 22, 26, 27, 28, 31, 32, 38, 41, 42, 43, 44, 45, 50, 51, 52, 65, 67, 68, 69, 72, 73, 74, 75, 76  NR Band n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 34 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| NR Band n77, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_40\_n41 | Bands 1, 3, 5, 8, 26, 27, 28, 34, 39, 42, 44, 45, 50, 51, 65, 73, 74, NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| NR Band n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 19 |
| DC\_40\_n77 | N/A | | | | | | |
| DC\_40\_n78 | E-UTRA Band 1, 3, 5, 7, 8, 20, 22, 26, 27, 28, 31, 32, 33, 34, 38, 39, 41, 42, 43, 44, 45, 50, 51, 52, 65, 67, 68, 69, 72, 73, 74, 75, 76  NR Band n77, n78 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| NR Band n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_40\_n79 | Bands 1, 3, 5, 8, 28, 34, 39, 41, 42, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 19 |
| DC\_41\_n3 | E-UTRA Band 1, 5, 8, 26, 27, 28, 34, 39, 40, 44, 45, 50, 51, 65, 73, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 3 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 11, 18, 19, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 13, 19 |
| E-UTRA Band 42, 52  NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 19 |
| DC\_41\_n28 | E-UTRA Band 4, 10, 12, 13, 14, 17, 18, 19, 20, 26, 27, 29, 39, 42, 43, 50, 51, 52, 65, 66, 71, 73, 85  NR Band n77, n78, n79 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 9,10 |
| E-UTRA Band 2, 3, 5, 8, 24, 25, 30, 31, 34, 40, 44, 48, 70, 72 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 11, 21, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 11 |
| Frequency range | 470 | - | 694 | -42 | 8 | 5, 17 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 14 |
| Frequency range | 662 | - | 694 | -26.2 | 6 | 5 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 9 |
| DC\_41\_n77 | E-UTRA Band 1, 3, 5, 8, 26, 28, 33, 34, 39, 40, 44, 45, 73, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 9, 11, 18, 19, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 19 |
| Frequency range | 1884.5 |  | 1915.7 | -41 | 0.3 | 3, 19 |
| DC\_41\_n78 | E-UTRA Band 1, 3, 8, 34, 39, 40, 44, 45 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 19 |
| DC\_41\_n79 | E-UTRA Band 1, 3, 5, 8, 9, 11, 18, 19, 21, 28, 34, 40, 42, 44, 45, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_42\_n28 | E-UTRA Band 2, 3, 5, 7, 8, 18, 19, 20, 25, 26, 27, 31, 34, 38, 40, 41, 66, 72,  NR Band n79 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 1, 4, 10, 32, 50, 51, 65, 66, 73, 74, 75, 76 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 1 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 10 |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 | 9, 11 |
| Frequency range | 470 | - | 694 | -42 | 8 | 5, 17 |
| Frequency range | 470 | - | 710 | -26.2 | 6 | 14 |
| Frequency range | 662 | - | 694 | -26.2 | 6 | 5 |
| Frequency range | 758 | - | 773 | -32 | 1 | 5 |
| Frequency range | 773 | - | 803 | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3, 9 |
| DC\_42\_n51 | E-UTRA Band 3, 8, 20, 25, 30, 31, 34, 39, 41, 73 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 1, 2, 4, 5, 6, 7, 10, 12, 13, 14, 17, 23, 24, 26, 27, 28, 29, 32, 38, 40, 44, 46, 65, 66, 67, 68, 70, 71 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_42\_n77 | N/A | | | | | | |
| DC\_42\_n78 | N/A | | | | | | |
| DC\_42\_n79 | N/A | | | | | | |
| DC\_48\_n5 | E-UTRA Band 2, 4, 5, 12, 13, 14, 17, 24, 25, 26, 29, 30, 41, 50, 51, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 26 | 859 | - | 869 | -27 | 1 |  |
| E-UTRA Band 41 | FDL\_low | - | FDL\_high | e | 1 | 2 |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_48\_n12 | E-UTRA Band 2, 5, 13, 14, 17, 24, 25, 26, 30, 41, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 4, 50, 51, 66, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 12, 85 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_48\_n66 | E-UTRA Band 2, 4, 5, 12, 13, 14, 17, 24, 25, 26, 29, 30, 41, 50, 51, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_48\_n71 | E-UTRA Band 4, 5, 12, 13, 14, 17, 24, 26, 30, 48, 50, 51, 53, 66, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25, 41, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 29 | FDL\_low | - | FDL\_high | -38 | 1 | 5 |
| E-UTRA Band 71 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_66\_n2 | E-UTRA Band 4, 5, 10, 12, 13, 14, 17, 22, 24, 26, 27, 28, 29, 30, 41, 50, 51, 53, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 25 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 2 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 42, 43 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_66\_n5 | E-UTRA Band 1, 2, 3, 4, 5, 6, 7, 8, 10, 12, 13, 14, 17, 24, 25, 26, 28, 29, 30, 34, 38, 40, 43, 45, 50, 51, 65, 66, 70, 71, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 41, 42, 48, 52 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 18, 19 | FDL\_low | - | FDL\_high | -40 | 1 |  |
| E-UTRA Band 11, 21 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| Frequency range | 1884.5 | - | 1915.7 | -41 | 0.3 | 3 |
| DC\_66\_n7 | E-UTRA Band 2, 4, 5, 7, 10, 12, 13, 14, 17, 26, 27, 28, 29, 30, 43, 50, 51, 66, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 2570 | - | 2575 | +1.6 | 5 | 5, 6, 7 |
| Frequency range | 2575 | - | 2595 | -15.5 | 5 | 5, 6, 7 |
| Frequency range | 2595 | - | 2620 | -40 | 1 | 5, 6 |
| DC\_66\_n12 | E-UTRA Band 2, 5, 13, 14, 17, 24, 25, 26, 27, 30, 41, 48, 50, 53, 66, 70, 71, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 4, 10, 51, 66, 48 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 12, 85 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_66\_n25 | E-UTRA Band 4, 5, 7, 10, 12, 13, 14, 17, 24, 26, 27, 28, 29, 30, 38, 41, 50, 51, 53, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42, 48 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 2 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 25 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| E-UTRA Band 43 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_66\_n41 | E-UTRA Band 2, 4, 5, 7, 10, 12, 13, 14, 17, 24, 25, 26, 27, 28, 29, 30, 43, 50, 51, 53, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42, 48 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| DC\_66\_n38 | E-UTRA Band 2，4，5，10，12，13，14，17，25, 27，28，29，30, 43，50，51，66，74，85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 42 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| Frequency range | 2620 | - | 2645 | -15.5 | 5 | 5, 7, 22 |
| Frequency range | 2645 | - | 2690 | -40 | 1 | 5, 22 |
| DC\_66A\_n48A | E-UTRA Band 2, 4, 5, 12, 13, 14, 17, 24, 25, 26, 29, 30, 41, 50, 51, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_66\_n71 | E-UTRA Band 4, 5, 7,10, 13, 14, 17, 22, 24, 26, 27, 29, 30, 43,50, 51, 66, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25, 41, 42, 48, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 71 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_66\_n78,  DC\_66\_n86\_ULSUP-TDM\_n78 | E-UTRA Band 1, 3, 5, 7, 8, 20, 26, 28, 34, 39, 40, 41, 65 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_71\_n5 | E-UTRA Band 4, 12, 13, 14, 17, 24, 26, 30, 48, 66, 85  NR Band n5 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25, 41, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 29 | FDL\_low | - | FDL\_high | -38 | 1 | 5 |
| E-UTRA Band 71 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_71\_n38 | E-UTRA Band 4, 5, 12, 13, 14, 17, 30, 66, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA band 29 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_71\_n48 | E-UTRA Band 2, 4, 5, 12, 13, 14, 17, 24, 25, 26, 29, 30, 41, 50, 51, 66, 70, 71, 74, 85 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| DC\_71\_n66 | E-UTRA Band 4, 5, 7,10, 13, 14, 17, 22, 24, 26, 27, 29, 30, 43, 50, 51, 66, 74 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 2, 25, 41, 42, 48, 70 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| E-UTRA Band 71 | FDL\_low | - | FDL\_high | -50 | 1 | 5 |
| DC\_71\_n78 | E-UTRA Band 5, 26 | FDL\_low | - | FDL\_high | -50 | 1 |  |
| E-UTRA Band 41 | FDL\_low | - | FDL\_high | -50 | 1 | 2 |
| NOTE 1: FDL\_low and FDL\_high refer to each E-UTRA frequency band specified in Table 5.5-1 in TS 36.101 [4].  NOTE 2: As exceptions, measurements with a level up to the applicable requirements defined in Table 6.6.3.1-2 are permitted for each assigned E-UTRA carrier used in the measurement due to 2nd, 3rd, 4th or 5th harmonic spurious emissions. Due to spreading of the harmonic emission the exception is also allowed for the first 1 MHz frequency range immediately outside the harmonic emission on both sides of the harmonic emission. This results in an overall exception interval centred at the harmonic emission of (2 MHz + N x LCRB x 180 kHz), where N is 2, 3, 4, 5 for the 2nd, 3rd, 4th or 5th harmonic respectively. The exception is allowed if the measurement bandwidth (MBW) totally or partially overlaps the overall exception interval.  NOTE 3: Applicable when co-existence with PHS system operating in 1884.5 - 1915.7 MHz  NOTE 4: Applicable only when the assigned E-UTRA carrier is confined within 824 MHz and 849 MHz for UE category M1, M2 and UE category NB1 and NB2.  NOTE 5: These requirements also apply for the frequency ranges that are less than FOOB (MHz) in Table 6.6.3.1-1 and Table 6.6.3.1A-1 from the edge of the channel bandwidth.  NOTE 6: This requirement is applicable for any channel bandwidths within the range 2500 - 2570 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 2560.5 - 2562.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 2552 - 2560 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to 54 RB.  NOTE 7: For these adjacent bands, the emission limit could imply risk of harmful interference to UE(s) operating in the protected operating band.  NOTE 8: This requirement is applicable for any channel bandwidths within the range 1920 - 1980 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 1927.5 - 1929.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 1930 - 1938 MHz the requirement is applicable only for an uplink  NOTE 9: Applicable when the assigned E-UTRA carrier is confined within 718 MHz and 748 MHz and when the channel bandwidth used is 5 or 10 MHz.  NOTE 10: As exceptions, measurements with a level up to the applicable requirement of -36 dBm/MHz is permitted for each assigned E-UTRA carrier used in the measurement due to 2nd harmonic spurious emissions. An exception is allowed if there is at least one individual RB within the transmission bandwidth (see Figure 5.6-1) for which the 2nd harmonic totally or partially overlaps the measurement bandwidth (MBW).  NOTE 11: As exceptions, measurements with a level up to the applicable requirement of -38 dBm/MHz is permitted for each assigned E-UTRA carrier used in the measurement due to 3rd harmonic spurious emissions. An exception is allowed if there is at least one individual RB within the transmission bandwidth (see Figure 5.6-1) for which the 3rd harmonic totally or partially overlaps the measurement bandwidth (MBW).  NOTE 12: This requirement is applicable only for the following cases: A: for carriers of 5 MHz channel bandwidth when carrier centre frequency (Fc) is within the range 902.5 MHz ≤ Fc < 907.5 MHz with an uplink transmission bandwidth less than or equal to 20 RB; B: for carriers of 5 MHz channel bandwidth when carrier centre frequency (Fc) is within the range 907.5 MHz ≤ Fc ≤ 912.5 MHz without any restriction on uplink transmission bandwidth; C: for carriers of 10 MHz channel bandwidth when carrier centre frequency (Fc) is Fc = 910 MHz with an uplink transmission bandwidth less than or equal to 32 RB with RBstart > 3.  NOTE 13: This requirement applies for 5, 10, 15 and 20 MHz E-UTRA channel bandwidth allocated within 1744.9MHz and 1784.9MHz.  NOTE 14: This requirement is applicable for 5 and 10 MHz E-UTRA channel bandwidth allocated within 718-728MHz. For carriers of 10 MHz bandwidth, this requirement applies for an uplink transmission bandwidth less than or equal to 30 RB with RBstart > 1 and RBstart < 48.  NOTE 15: Applicable when NS\_05 in clause 6.6.3.3.1 is signalled by the network.  NOTE 16: This requirement is applicable for any channel bandwidths within the range 1920 - 1980 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 1927.5 - 1929.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 1930 - 1938 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to 54 RB.  NOTE 17: This requirement is applicable in the case of a 10 MHz E-UTRA carrier confined within 703 MHz and 733 MHz, otherwise the requirement of -25 dBm with a measurement bandwidth of 8 MHz applies.  NOTE 18: This requirement is only applicable for E-UTRA carriers with bandwidth confined within 1885 - 1920 MHz (requirement for carriers with at least 1RB confined within 1880 - 1885 MHz is not specified). This requirement applies for an uplink transmission bandwidth less than or equal to 54 RB for E-UTRA carriers of 15 MHz bandwidth when carrier center frequency is within the range 1892.5 - 1894.5 MHz and for E-UTRA carriers of 20 MHz bandwidth when carrier center frequency is within the range 1895 - 1903 MHz.  NOTE 19: This requirement applies when the E-UTRA and NR carriers are confined within 2545 – 2575 MHz or 2595 - 2645 MHz and the channel bandwidth is 10 or 20 MHz  NOTE 20: For category NB1 and NB2 UE when carrier centre frequency is 1920.1 MHz, in case of single-tone uplink transmission the requirement is applicable only for sub-carrier index > 2.  NOTE 21: Whether the applicable frequency range should be 793 – 805 MHz instead of 799 – 805 MHz is TBD  NOTE 22: This requirement is applicable for power class 3 UE for any channel bandwidths within the range 2570 - 2615 MHz with the following restriction: for carriers of 15 MHz bandwidth when carrier centre frequency is within the range 2605.5 - 2607.5 MHz and for carriers of 20 MHz bandwidth when carrier centre frequency is within the range 2597 - 2605 MHz the requirement is applicable only for an uplink transmission bandwidth less than or equal to 54 RB. | | | | | | | |

NOTE: To simplify the above Table, E-UTRA band numbers are listed for bands which are specified only for E-UTRA operation or both E-UTRA and NR operation. NR band numbers are listed for bands which are specified only for NR operation.

## << Seventh changes >>

### 7.3B.2 Reference sensitivity for DC

#### 7.3B.2.1 Intra-band contiguous EN-DC

For intra-band contiguous EN-DC configurations, the reference sensitivity power level REFSENS is the minimum mean power applied to each one of the UE antenna ports at which the throughput for the carrier(s) of the E-UTRA and NR CGs shall meet or exceed the requirements for the specified E-UTRA and NR reference measurement channels. The reference sensitivity requirements apply with all uplink carriers and all downlink carriers active for EN-DC configuration and Uplink EN-DC configuration listed in Table 5.5B.2-1 and Table 5.5B.3-1, as supported by the UE. For EN-DC configurations where uplink is not available in either the MCG or the SCG or for EN-DC configurations where the UE only supports single uplink operation, reference sensitivity requirements apply with single uplink transmission. The downlink carrier(s) from the cell group with uplink shall be configured closer to the uplink operating band than any of the downlink carriers from the cell group without uplink.

Sensitivity degradation is allowed for Intra-band contiguous EN-DC configurations listed in Table 7.3B.2.1-1 the reference sensitivity is defined only for the specific uplink and downlink test points which are specified in Table 7.3B.2.1-1 and E-UTRA and NR single carrier requriements do not apply.

Table 7.3B.2.1-1: Reference sensitivity (MSD) for intra-band contiguous EN-DC

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| EN-DC configuration / channel allocations /MSD | | | | | | | |
| EN-DC configuration | E-UTRA/NR band | FC (UL)  (MHz) | Channel bandwidth  (MHz) | UL  allocation (LCRB) | FC (DL)  (MHz) | MSD  (dB) | Duplex mode |
| DC\_(n)5AA | 5 | 826.5 | 5 | N/A | 871.5 | 5.2 | FDD |
| n5 | 839 | 20 | 20 (RBend = 105) | 884 | 0 |
| DC\_(n)5AA | 5 | 829 | 10 | N/A | 874 | 5.2 |
| n5 | 841.5 | 15 | 20 (RBend = 78) | 886.5 | 0 |
| DC\_(n)5AA | 5 | 844 | 10 | 25 (RBend = 49) | 889 | 0 |
| n5 | 831.5 | 15 | N/A | 876.5 | 3.1 |
| DC\_(n)5AA | 5 | 831.5 | 5 | N/A | 876.5 | 5.2 |
| n5 | 841.5 | 15 | 20 (RBend = 78) | 886.5 | 0 |
| DC\_(n)5AA | 5 | 846.5 | 5 | 25 | 891.5 | 0 |
| n5 | 836.5 | 15 | N/A | 881.5 | 1 |
| DC\_(n)5AA | 5 | 834 | 10 | N/A | 879 | 1.5 |
| n5 | 844 | 10 | 25 (RBend = 51) | 889 | 0 |
| DC\_(n)5AA | 5 | 844 | 10 | 25 (RBend = 49) | 889 | 0 |
| n5 | 834 | 10 | N/A | 879 | 1.4 |
| DC\_(n)12AA | 12 | 703.5 | 5 | N/A | 733.5 | 4.5 | FDD |
| n12 | 711 | 10 | 20 (RBend = 51) | 741 | 0 |
| DC\_(n)12AA | 12 | 711 | 10 | 20 (RBend = 49) | 741 | 0 |
| n12 | 703.5 | 5 | N/A | 733.5 | 4.5 |
| DC\_(n)71AA | 71 | 665.5 | 5 | 5 (RBend =24) | 619.5 | 0 | FDD |
| n71 | 675.5 | 15 | 15 (RBstart = 0) | 629.5 | 1.8 |
| DC\_(n)71AA | 71 | 670.5 | 15 | 15 (RBend = 74) | 624.5 | 0 |
| n71 | 680.5 | 5 | 5 (RBstart = 0) | 634.5 | 1.6 |
| DC\_(n)71AA | 71 | 668 | 10 | 10 (RBend = 49) | 622 | 0 |
| n71 | 678 | 10 | 10 (RBstart = 0) | 632 | 1.7 |
| DC\_(n)71AA | 71 | 668 | 10 | 10 (RBstart = 0) | 622 | 17.2 |
| n71 | 678 | 10 | 10 (RBend = 51) | 632 | 29.4 |
| DC\_(n)71AA | 71 | 665.5 | 5 | 5 (RBend =24) | 619.5 | 0 | FDD |
| n71 | 675.5 | 151 | 15 (RBstart = 0) | 6321 | 2.5 |
| DC\_(n)71AA | 71 | 670.5 | 15 | 15 (RBend = 74) | 624.5 | 0 |
| n71 | 680.5 | 51 | 5 (RBstart = 0) | 6371 | 2.2 |
| DC\_(n)71AA | 71 | 668 | 10 | 10 (RBend = 49) | 622 | 0 |
| n71 | 678 | 101 | 10 (RBstart = 0) | 634.51 | 2.5 |
| DC\_(n)71AA | 71 | 668 | 10 | 10 (RBstart = 0) | 622 | 17.2 |
| n71 | 678 | 101 | 10 (RBend = 51) | 634.51 | 29.1 |
| NOTE 1: In accordance to BCS1, the NR uplink bandwidth is specified as in this table, but the corresponding NR downlink bandwidth is 5 MHz larger.  NOTE 2: The transmitters powers shall be set to PUMAX, as defined in TS 38.101-1 [2], TS 38.101-2 [3], and TS 36.101 [4], with additional limits on configured maximum output power for the uplink according to clause 6.2B.4. | | | | | | | |

#### 7.3B.2.2 Intra-band non-contiguous EN-DC

For intra-band non-contiguous EN-DC configurations, the reference sensitivity power level REFSENS is the minimum mean power applied to each one of the UE antenna ports at which the throughput for the carrier(s) of the E-UTRA and NR CGs shall meet or exceed the requirements for the specified E-UTRA and NR reference measurement channels.

Sensitivity degradation is allowed for Intra-band non-contiguous EN-DC configurations listed in Table 7.3B.2.2-1, the reference sensitivity is defined only for the specific uplink and downlink test points which are specified in Table 7.3B.2.2-1 and E-UTRA and NR single carrier requriements do not apply.

For UE supporting Intra-band non-contiguous EN-DC configurations with single switched UL, no MSD is specified and E-UTRA and NR single carrier requriements apply.

Table 7.3B.2.2-1: Reference sensitivity (MSD) for intra-band non-contiguous EN-DC

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| MSD / DC bandwidth class A + A | | | | | | | |
| DC configuration | E-UTRA/NR band | FC (UL)  (MHz) | Channel bandwidth  (MHz) | UL  allocation (LCRB) | FC (DL)  (MHz) | MSD  (dB) | Duplex mode |
| DC\_3A\_n3A | 3 | 1782.5 | 5 | 12 (RBstart =0) | 1877.5 | 01  12 | FDD |
| n3 | 1772.5 | 5 | 12 (RBend = 24) | 1867.5 | 01  1.52 |
| DC\_3A\_n3A | 3 | 1782.5 | 5 | 12 (RBstart = 9) | 1877.5 | 31  292 |
| n3 | 1752.5 | 5 | 12 (RBstart = 0) | 1847.5 | 151  312 |
| DC\_3A\_n3A | 3 | 1782.5 | 5 | 12 (RBstart = 12) | 1877.5 | 161,3 |
| n3 | 1737.5 | 5 | 12 (RBstart = 0) | 1832.5 | 331,3 |
| DC\_3A\_n3A | 3 | 1737.5 | 5 | 12 (RBstart = 0) | 1832.5 | 331,3,4 |
| n3 | 1782.5 | 5 | 12 (RBstart = 12) | 1877.5 | 161,3,4 |
| NOTE 1: Applicable for UE signaling with dual PA capability.  NOTE 2: Applicable for UE signaling without dual PA capability.  NOTE 3: The IMD also impacts Rx received blocks for UE signaling without dual PA capability but the requirements are not specified.  NOTE 4: The test point is not applicable for BCS0 of DC\_3A\_n3A in Table 5.3B.1.3-1. | | | | | | | |

#### 7.3B.2.3 Inter-band EN-DC within FR1

Reference sensitivity exceptions are specified for the condition when there is uplink transmission only in the aggressor band.

##### 7.3B.2.3.1 Reference sensitivity exceptions due to UL harmonic interference for EN-DC in NR FR1

Sensitivity degradation is allowed for a band if it is impacted by UL harmonic interference from another band part of the same EN-DC configuration. Reference sensitivity exceptions for the victim band (high) are specified in Table 7.3B.2.3.1-1 with uplink configuration of the agressor band (low) specified in Table 7.3B.2.3.1-2.

Table 7.3B.2.3.1-1: Reference sensitivity exceptions (MSD) due to UL harmonic 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  (dB) | 10 MHz  (dB) | 15 MHz  (dB) | 20 MHz  (dB) | 25 MHz  (dB) | 30 MHz (dB) | 40 MHz  (dB) | 50 MHz  (dB) | 60 MHz  (dB) | 80 MHz  (dB) | 90 MHz  (dB) | 100 MHz  (dB) |
| 1, 3 | n772,13 |  | 23.9 | 22.1 | 20.9 |  |  | 17.9 | 16.8 | 16.0 | 14.8 | 14.3 | 13.8 |
| n773 |  | 1.1 | 0.8 | 0.3 |  |  |  |  |  |  |  |  |
| 2 | n482,13 | 27.3 | 24.4 | 22.4 | 21.2 |  |  | 18 | 17.1 | 16.3 | 15 | 14.5 | 14 |
| n483 | 1.9 | 1.4 | 0.9 | 0.4 |  |  | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | n782,13 |  | 23.9 | 22.1 | 20.9 |  |  | 17.9 | 16.8 | 16.0 | 14.8 | 14.3 | 13.8 |
| n783 |  | 1.1 | 0.8 | 0.3 |  |  |  |  |  |  |  |  |
| 3 | n782,13 |  | 23.9 | 22.1 | 20.9 |  |  | 17.9 | 16.8 | 16.0 | 14.8 | 14.3 | 13.8 |
| n783 |  | 1.1 | 0.8 | 0.3 |  |  |  |  |  |  |  |  |
| 4 | n782,13 |  | 23.9 | 22.1 | 20.9 |  |  | 17.9 | 16.8 | 16.0 | 14.8 | 14.3 | 13.8 |
|  | n783 |  | 1.1 | 0.8 | 0.3 |  |  |  |  |  |  |  |  |
| 5 | n786,7 |  | 10.5 | 8.9 | 7.8 |  |  | 5.4 |  |  |  |  |  |
| 8 | n418,9 | N/A | 13 | 11.3 | 10.1 |  |  | 7.0 | 6.1 | 5.5 | 4.3 | 3.9 | 3.5 |
| 8 | n776,7  n786,7 |  | 10.8 | 9.1 | 8 |  |  | 5.1 | 4.2 | 3.5 | 2.3 | 2.1 | 1.4 |
| 8 | n794,5 |  |  |  |  |  |  | 6.8 | 6.2 | 5.6 | 4.9 |  | 4.4 |
| n8 | 314 | N/A | N/A | N/A | N/A |  |  |  |  |  |  |  |  |
| n8 | 78,9,10 | 10 | 7.6 | 6.2 | 5.3 |  |  |  |  |  |  |  |  |
| 12 | n668,9,10 | 10 | 7.5 | 6.2 | 5.5 |  |  | 2.4 |  |  |  |  |  |
| 12 | n784,5 |  | 10.4 | 8.9 | 7.8 |  |  | 4.7 | 3.7 | 3 | 1.7 | 1.2 | 0.7 |
| n12 | 484,5 | 13 | 10.4 | 8.9 | 7.8 |  |  |  |  |  |  |  |  |
| 18，19 | n774,5 |  | 10.4 | 8.9 | 7.8 |  |  | 4.7 | 3.7 | 3 | 1.7 | 1.2 | 0.7 |
| 28 | n774,5 n784,5 |  | 10.4 | 8.9 | 7.8 |  |  | 4.7 | 3.7 | 3 | 1.7 | 1.2 | 0.7 |
| 20 | n388,9 | 12.9 | 10.3 | 8.4 | 7.4 |  |  |  |  |  |  |  |  |
| 20 | n776,7  n786,7 |  | 10.8 | 9.1 | 8 |  |  | 6 | 4.0 | 3.2 | 2.0 | 1.5 | 1.0 |
| 26 | n418,9 |  | 10.3 | 8.4 | 7.4 |  |  | 5 | 4.3 | 3.9 | 3.1 | 2.7 |  |
| 26 | n776,7  n786,7 |  | 10.8 | 9.1 | 8 |  |  | 6 | 4.0 | 3.2 | 2.0 | 1.5 | 1.0 |
| n28 | 18,9,10 | 10.2 | 7.6 | 6.2 | 5.3 |  |  |  |  |  |  |  |  |
| n28 | 112,10,13 | 24.8 | 21.8 |  |  |  |  |  |  |  |  |  |  |
| n28 | 424,5,10 | 14.1 | 10.4 | 8.9 | 7.9 |  |  |  |  |  |  |  |  |
| 28 | n502,13 | 27.8 | 24.6 | 22.8 | 21.6 |  |  | 18.5 | 17.5 | 16.7 | 15.4 |  |  |
| n503 | 1.9 | 1.4 | 0.9 | 0.4 |  |  |  |  |  |  |  |  |
| n71 | 211 | 4.6 | 1.0 | 0.7 | 0.6 |  |  |  |  |  |  |  |  |
| 212 | 1.7 | 1.0 | 0.7 | 0.6 |  |  |  |  |  |  |  |  |
| n71 | 76,7 | 14.6 | 11.7 | 10.1 | 9 |  |  |  |  |  |  |  |  |
| 66 | n482,13 | 27.3 | 24.4 | 22.4 | 21.2 |  |  | 18 | 17.1 | 16.3 | 15 | 14.5 | 14 |
| n483 | 1.9 | 1.4 | 0.9 | 0.4 |  |  | 0 | 0 | 0 | 0 | 0 | 0 |
| 66 | n782,13 |  | 23.9 | 22.1 | 20.9 |  |  | 17.9 | 16.8 | 16.0 | 14.8 | 14.3 | 13.8 |
| n783 |  | 1.1 | 0.8 | 0.3 |  |  |  |  |  |  |  |  |
| n66 | 482,13 | 27.3 | 24.4 | 22.4 | 21.2 |  |  |  |  |  |  |  |  |
| 483 | 1.9 | 1.4 | 0.9 | 0.4 |  |  |  |  |  |  |  |  |
| 71 | n784,5 |  | 10.4 | 8.9 | 7.8 |  |  | 4.7 | 3.7 | 3 | 1.7 | 1.2 | 0.7 |
| NOTE 1: Void  NOTE 2: The requirements should be verified for UL EARFCN or NR ARFCN of the aggressor (lower) band (superscript LB) such that in MHz and  with carrier frequency in the victim (higher) band in MHz and the channel bandwidth configured in the lower band.  NOTE 3: The requirements are only applicable to channel bandwidths no larger than 20 MHz and with a carrier frequency at  MHz offset from  in the victim (higher band) with , whereandare the channel bandwidths configured in the aggressor (lower) and victim (higher) bands in MHz, respectively.  NOTE 4: These requirements apply when there is at least one individual RE within the uplink transmission bandwidth of the aggressor (lower) band for which the 5th transmitter harmonic is within the downlink transmission bandwidth of a victim (higher) band.  NOTE 5: The requirements should be verified for UL EARFCN of the aggressor (lower) band (superscript LB) such that in MHz and  with carrier frequency in the victim (higher) band in MHz and the channel bandwidth configured in the lower band.  NOTE 6: These requirements apply when there is at least one individual RE within the uplink transmission bandwidth of the aggressor (lower) band for which the 4th transmitter harmonic is within the downlink transmission bandwidth of a victim (higher) band.  NOTE 7: The requirements should be verified for UL EARFCN of the aggressor (lower) band (superscript LB) such that in MHz and  with carrier frequency in the victim (higher) band in MHz and the channel bandwidth configured in the lower band.  NOTE 8: These requirements apply when there is at least one individual RE within the uplink transmission bandwidth of the aggressor (lower) for which the 3rd transmitter harmonic is within the downlink transmission bandwidth of a victim (higher) band.  NOTE 9 The requirements should be verified for UL EARFCN of the aggressor (lower) band (superscript LBsuch that  in MHz and  with the carrier frequency in the victim (higher) band in MHz and  the channel bandwidth configured in the low band.  NOTE 10: Applicable for the operations with 2 or 4 antenna ports supported in the band with carrier aggregation configured.  NOTE 11: These requirements apply when the lower edge frequency of the 5 MHz uplink channel in Band 71 is located at or below 668 MHz and the downlink channel in Band 2 is located with its upper edge at 1990 MHz.  NOTE 12: These requirements apply when the lower edge frequency of the 10 MHz, 15 MHz, or 20 MHz uplink channel in Band 71 is located at or below 668 MHz and the downlink channel in Band 2 is located with its upper edge at 1990 MHz.  NOTE 13: These requirements apply when there is at least one individual RE within the uplink transmission bandwidth of the aggressor (lower) band for which the 2nd transmitter harmonic is within the downlink transmission bandwidth of a victim (higher) band and a range ∆FHD above and below the edge of this downlink transmission bandwidth. The value ∆FHD depends on the EN-DC band combination: ∆FHD = 10 MHz for DC\_1\_n77, DC\_2\_n48, DC\_2\_n77, DC\_48\_n66, DC\_66\_n48, DC\_66\_n77, DC\_3\_n77, DC\_3\_n78, DC\_11\_n28 and DC\_28\_n50  NOTE 14: No requirements apply when there is at least one individual RE within the uplink transmission bandwidth of the low band for which the 2nd transmitter harmonic is within the downlink transmission bandwidth of the high band. The reference sensitivity for all active downlink component carriers is only verified when this is not the case (the requirements specified in clause 7.3.1 from TS 36.101-1 apply unless otherwise specified). | | | | | | | | | | | | | |

Table 7.3B.2.3.1-2: Uplink configuration for reference sensitivity exceptions due to UL harmonic interference for EN-DC in NR FR1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | E-UTRA or NR Band / Channel bandwidth of the affected DL band / UL RB allocation of the agressor band | | | | | | | | | | | | |
| UL band | DL band | 5  MHz  (LCRB) | 10 MHz  (LCRB) | 15 MHz  (LCRB) | 20 MHz  (LCRB) | 25 MHz  (LCRB) | 30 MHz  (LCRB) | 40 MHz  (LCRB) | 50 MHz  (LCRB) | 60 MHz  (LCRB) | 80 MHz  (LCRB) | 90 MHz  (LCRB) | 100 MHz  (LCRB) |
| 1 | n77 |  | 25 | 36 | 50 |  |  | 100 | 100 | 100 | 100 | 100 | 100 |
| 2 | n48 | 12 | 25 | 36 | 50 |  |  | 100 | 100 | 100 | 100 | 100 | 100 |
| 2 | n78 |  | 25 | 36 | 50 |  |  | 50 | 50 | 50 | 50 | 50 | 50 |
| 3 | n77, n78 |  | 25 | 36 | 50 |  |  | 50 | 50 | 50 | 50 | 50 | 50 |
| 4 | n78 |  | 25 | 36 | 50 |  |  | 100 | 100 | 100 | 100 | 100 | 100 |
| 5 | n78 | 8 | 16 | 25 | 25 |  |  | 25 |  |  |  |  |  |
| 8 | n41 |  | 16 | 25 | 25 |  |  | 25 | 25 | 25 | 25 | 25 | 25 |
| 8 | n77  n78 |  | 16 | 25 | 25 |  |  | 25 | 25 | 25 | 25 | 25 | 25 |
| 8 | n79 |  |  |  |  |  |  | 25 | 25 | 25 | 25 |  | 25 |
| n8 | 7 | 8 | 16 | 25 | 25 |  |  |  |  |  |  |  |  |
| 12 | n66 | 8 | 16 | 20 | 20 |  |  | 20 |  |  |  |  |  |
| 12 | n78 |  | 10 | 15 | 20 |  |  | 25 | 25 | 25 | 25 | 25 | 25 |
| n12 | 48 | 5 | 10 | 15 | 20 |  |  |  |  |  |  |  |  |
| 18 | n77 |  | 16 | 25 | 25 |  |  | 25 | 25 | 25 | 25 | 25 | 25 |
| 19 | n77 |  | 16 | 25 | 25 |  |  | 25 | 25 | 25 | 25 | 25 | 25 |
| 20 | n38 | 8 | 16 | 25 | 25 |  |  |  |  |  |  |  |  |
| 20 | n77, n78 |  | 16 | 25 | 25 |  |  | 25 | 25 | 25 | 25 | 25 | 25 |
| 26 | n41 |  | 16 | 25 | 25 |  |  | 25 | 25 |  |  |  |  |
| 26 | n77,  n78 |  | 16 | 25 | 25 |  |  | 25 | 25 | 25 | 25 | 25 | 25 |
| n28 | 1 | 8 | 16 | 25 | 25 |  |  |  |  |  |  |  |  |
| n28 | 11 | 12 | 25 |  |  |  |  |  |  |  |  |  |  |
| n28 | 42 | 5 | 10 | 15 | 20 |  |  |  |  |  |  |  |  |
| 28 | n50 | 12 | 25 | 25 | 25 |  |  | 25 | 25 | 25 | 25 |  |  |
| 28 | n77,  n78 |  | 10 | 15 | 20 |  |  | 25 | 25 | 25 | 25 | 25 | 25 |
| 66 | n48 | 12 | 25 | 36 | 50 |  |  | 100 | 100 | 100 | 100 | 100 | 100 |
| 66 | n78 |  | 25 | 36 | 50 |  |  | 100 | 100 | 100 | 100 | 100 | 100 |
| n66 | 48 | 12 | 25 | 36 | 50 |  |  |  |  |  |  |  |  |
| n71 | 2 | 254  85 | 254  85 | 204  85 | 204  85 |  |  |  |  |  |  |  |  |
| n71 | 7 | 8 | 16 | 25 | 25 |  |  |  |  |  |  |  |  |
| 71 | n78 |  | 10 | 15 | 20 |  |  | 25 | 25 | 25 | 25 | 25 | 25 |
| NOTE 1: The UL configuration applies regardless of the channel bandwidth of the UL band unless the UL resource blocks exceed that specified in Table 7.3.1-2 in TS 36.101 [4] or Table 7.3.2-3 in TS 38.101-1 [2] for the uplink bandwidth in which case the allocation according to Table 7.3.1-2 in TS 36.101 [4] or Table 7.3.2-3 in TS 38.101-1 [2] applies  NOTE 2: Void  NOTE 3: Unless stated otherwise, UL resource blocks shall be centred within the transmission bandwidth configuration for the channel bandwidth.  NOTE 4: These requirements apply when the lower edge frequency of the 5 MHz uplink channel in Band 71 is located at or below 668 MHz and the downlink channel in Band 2 is located with its upper edge at 1990 MHz.  NOTE 5: These requirements apply when the lower edge frequency of the 10 MHz, 15 MHz, or 20 MHz uplink channel in Band 71 is located at or below 668 MHz and the downlink channel in Band 2 is located with its upper edge at 1990 MHz. | | | | | | | | | | | | | |

##### 7.3B.2.3.2 Reference sensitivity exceptions due to receiver harmonic mixing for EN-DC in NR FR1

Sensitivity degradation is allowed for a band if it is impacted by receiver harmonic mixing due to another band part of the same EN-DC configuration. Reference sensitivity exceptions for the victim band (low) are specified in Table 7.3B.2.3.2-1 with uplink configuration of the agressor band (high) specified in Table 7.3B.2.3.2-2.

Table 7.3B.2.3.2-1: Reference sensitivity 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  (dB) | 10 MHz  (dB) | 15 MHz  (dB) | 20 MHz  (dB) | 25 MHz  (dB) | 40 MHz  (dB) | 50 MHz  (dB) | 60 MHz  (dB) | 80 MHz  (dB) | 90 MHz  (dB) | 100 MHz  (dB) |
| 1 | n714 | 26.8 | 23.6 | 21.2 | 15.6 |  |  |  |  |  |  |  |
| 2 | n714 | 26.8 | 23.6 | 21.2 | 15.6 |  |  |  |  |  |  |  |
| n38 | 59 | N/A | N/A |  |  |  |  |  |  |  |  |  |
| n40 | 284 | 37.8 | 34.8 | 33 | 30.3 |  |  |  |  |  |  |  |
| n41 | 264 | 24.3 | 24.3 | 22.5 | N/A |  |  |  |  |  |  |  |
| n77 | 3 | 5.7 | 4.0 | 3.0 | 2.7 |  |  |  |  |  |  |  |
| n78 | 3 | 5.7 | 4.0 | 3.0 | 2.7 |  |  |  |  |  |  |  |
| n77 | 78 | 10.4 | 10.4 | 10.4 | 10.4 |  |  |  |  |  |  |  |
| n77 | 418 | 10.4 | 10.4 | 10.4 | 10.4 |  |  |  |  |  |  |  |
| n77 | 282 | 28 | 25 | 23.2 | 22 |  |  |  |  |  |  |  |
| n78 | 408 | 10.4 | 10.4 | 10.4 | 10.4 |  |  |  |  |  |  |  |
| n78 | 418 | 10.4 | 10.4 | 10.4 | 10.4 |  |  |  |  |  |  |  |
| n79 | 114 | 39.3 | 36.3 | 34.5 |  |  |  |  |  |  |  |  |
| n79 | 192 | 29.5 | 26.5 | 24.7 |  |  |  |  |  |  |  |  |
| n79 | 214 | 39.3 | 36.3 | 34.5 |  |  |  |  |  |  |  |  |
| n79 | 262 | 27 | 24 | 22.2 |  |  |  |  |  |  |  |  |
| NOTE 1: These requirements apply when there is at least one individual RE within the uplink transmission bandwidth of the aggressor (higher) band for which the mixing product due to harmonic of victim (lower) band LO with leakage of aggressor (higher) band is within the downlink transmission bandwidth of a victim (lower) band.  NOTE 2: The requirements should be verified for DL EARFCN of the victim (lower) band (superscript LB) such that  with  the DL carrier frequency in the lower band and the UL carrier frequency in the higher band, both in MHz.  NOTE 3: Void.  NOTE 4: The requirements should be verified for DL EARFCN or NR ARFCN of the victim (lower) band (superscript LB) such that  with   the DL carrier frequency in the lower band and the UL carrier frequency in the higher band, both in MHz.  NOTE 5: Void  NOTE 6: Void  NOTE 7: Void  NOTE 8: The requirements should be verified for DL EARFCN of the victim (lower) band (superscript LB) such that with the DL carrier frequency in the lower band and the UL carrier frequency in the higher band, both in MHz.  NOTE 9: No requirements apply for the case that there is at least one individual RE within the uplink transmission bandwidth of the relative higher band and when the frequency range of relative higher band’s uplink channel bandwidth or uplink 1st adjacent channel bandwidth is fully or partially overlapped with the 3 times of the frequency range of the relative lower band’s downlink channel bandwidth. The reference sensitivity is only verified when this is not the case. | | | | | | | | | | | | |

Table 7.3B.2.3.2-2: Uplink configuration for reference sensitivity exceptions due to receiver harmonic mixing for EN-DC in NR FR1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| E-UTRA or NR Band / SCS / Channel bandwidth of the affected DL band / UL RB allocation of the agressor band | | | | | | | | | | | | | |
| UL band | DL band | SCS of UL band  (kHz) | 5 MHz  (LCRB) | 10 MHz  (LCRB) | 15 MHz  (LCRB) | 20 MHz  (LCRB) | 25 MHz  (LCRB) | 40 MHz  (LCRB) | 50 MHz  (LCRB) | 60 MHz  (LCRB) | 80 MHz  (LCRB) | 90 MHz  (LCRB) | 100 MHz  (LCRB) |
| 1 | n71 | 15 | 25 | 50 | 75 | 100 |  |  |  |  |  |  |  |
| 2 | n71 | 15 | 25 | 50 | 50 | 50 |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| n40 | 28 | 15 | 25 | 50 | 75 | 100 |  |  |  |  |  |  |  |
| n41 | 26 | 15 | 25 | 50 | 75 |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| n77 | 3 | 15 | 25 | 50 | 75 | 100 |  |  |  |  |  |  |  |
| n78 | 3 | 15 | 25 | 50 | 75 | 100 |  |  |  |  |  |  |  |
| n77 | 7 | 15 | 12 | 25 | 36 | 50 |  |  |  |  |  |  |  |
| n77 | 28 | 15 | 25 | 50 | 75 | 100 |  |  |  |  |  |  |  |
| n77 | 41 | 15 | 12 | 25 | 36 | 50 |  |  |  |  |  |  |  |
| n78 | 40 | 15 | 12 | 25 | 36 | 50 |  |  |  |  |  |  |  |
| n78 | 41 | 15 | 12 | 25 | 36 | 50 |  |  |  |  |  |  |  |
| n79 | 11 | 15 | 25 | 50 | 75 |  |  |  |  |  |  |  |  |
| n79 | 19 | 15 | 25 | 50 | 75 |  |  |  |  |  |  |  |  |
| n79 | 21 | 15 | 25 | 50 | 75 |  |  |  |  |  |  |  |  |
| n79 | 26 | 15 | 25 | 50 | 75 |  |  |  |  |  |  |  |  |
| NOTE 1: Void  NOTE 2: Void  NOTE 3: The UL configuration applies regardless of the channel bandwidth of the UL band. UL resource blocks allocation in the table shall be further limited to that specified in Table 7.3.1-2 in TS 36.101 [4] or Table 7.3.2-3 in TS 38.101-1 [2].  NOTE 4: Unless otherwise stated, the UL resource blocks allocation is applied at the center of the channel bandwidth. The note applies to the entire table | | | | | | | | | | | | | |

##### 7.3B.2.3.3 Void

##### 7.3B.2.3.4 Reference sensitivity exceptions due to cross band isolation for EN-DC in NR FR1

Sensitivity degradation is allowed for a band if it is impacted by UL of another band part of the same EN-DC configuration due to cross band isolation issues. Reference sensitivity exceptions for the victim band are specified in Table 7.3B.2.3.4-1 with uplink configuration of the agressor band specified in Table 7.3B.2.3.4-2.

Table 7.3B.2.3.4-1: Reference sensitivity exceptions (MSD) due to cross band isolation 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  (dB) | 10 MHz  (dB) | 15 MHz  (dB) | 20 MHz  (dB) | 25 MHz  (dB) | 30 MHz  (dB) | 40 MHz  (dB) | 50 MHz  (dB) | 60 MHz  (dB) | 80 MHz  (dB) | 90 MHz  (dB) | 100 MHz  (dB) |
| n13 | | 3 | 3 | 2.3 | 2 | 1.8 |  |  |  |  |  |  |  |  |
| n1 | | 40 | 6.6 | 6.6 | 6.6 | 6.6 |  |  |  |  |  |  |  |  |
| 13 | | n3 | 3 | 2.2 | 1.9 | 1.7 | 1.6 | 1.5 |  |  |  |  |  |  |
| 1 | | n41 |  | 6.1 | 6.1 | 6.1 |  |  | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 | 6.1 |
| n3 | | 11 | 6.4 | 6.1 |  |  |  |  |  |  |  |  |  |  |
| 3 | | n41 |  | 0.7 | 0.7 | 0.7 |  |  | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 |
| n3 | | 41 | 0.7 | 0.7 | 0.7 | 0.7 |  |  |  |  |  |  |  |  |
| n5 | | 28 | 4.5 | 3 | 2.2 | 0.3 |  |  |  |  |  |  |  |  |
| 7 | | n40 | 3.7 | 3.4 | 3.2 | 3.1 |  |  | 3.1 | 3.1 | 3.1 | 3.1 |  |  |
| n38 | | 1 | 1.9 | 1.9 | 1.9 | 1.9 |  |  |  |  |  |  |  |  |
| n38 | | 2 | 0.6 | 0.6 | 0.6 | 0.6 |  |  |  |  |  |  |  |  |
| n38 | | 4 | 1.9 | 1.9 | 1.9 | 1.9 |  |  |  |  |  |  |  |  |
| n38 | | 66 | 1.9 | 1.9 | 1.9 | 1.9 |  |  |  |  |  |  |  |  |
| n41 | | 4 | 3.5 | 3.5 | 3.5 | 3.5 |  |  |  |  |  |  |  |  |
| 40 | | n1 | 8.3 | 8.3 | 8.3 | 8.3 |  |  |  |  |  |  |  |  |
| n40 | | 7 | 3.7 | 3.7 | 3.7 | 3.7 |  |  |  |  |  |  |  |  |
| n41 | | 1 | 9.1 | 9.1 | 9.1 | 9.1 |  |  |  |  |  |  |  |  |
| n41 | | 2 | 0.6 | 0.6 | 0.6 | 0.6 |  |  |  |  |  |  |  |  |
| n41 | | 3 | 0.6 | 0.6 | 0.6 | 0.6 |  |  |  |  |  |  |  |  |
| 41 | | n3 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |  |  |  |  |  |  |
| n41 | | 661 | 3.5 | 3.5 | 3.5 | 3.5 |  |  |  |  |  |  |  |  |
| n41 | | 25 | 0.6 | 0.6 | 0.6 | 0.6 |  |  |  |  |  |  |  |  |
| n50 | | 3 | 2.5 | 1.9 | 1.6 | 1.5 |  |  |  |  |  |  |  |  |
| n77 | | 71 | 4.5 | 4.5 | 4.5 | 4.5 |  |  |  |  |  |  |  |  |
| n77 | | 411 | 4.5 | 4.5 | 4.5 | 4.5 |  |  |  |  |  |  |  |  |
| 41 | | n77 |  | 8.3 | 8.3 | 8.3 |  |  | 6.3 | 5.3 | 4.5 | 4.0 | 3.9 | 3.8 |
| n78 | | 71 | 4.5 | 4.5 | 4.5 | 4.5 |  |  |  |  |  |  |  |  |
| n78 | | 38 | 3.3 | 3.3 | 3.3 | 3.3 |  |  |  |  |  |  |  |  |
| n78 | | 411 | 4.5 | 4.5 | 4.5 | 4.5 |  |  |  |  |  |  |  |  |
| 41 | | n78 |  | 8.3 | 8.3 | 8.3 |  |  | 6.3 | 5.3 | 4.5 | 4.0 | 3.9 | 3.8 |
| n843 | | 3 | 3 | 2.3 | 2 | 1.8 |  |  |  |  |  |  |  |  |
| NOTE 1: Applicable only when harmonic mixing MSD for this combination is not applied.  NOTE 2: The B41 requirements are modified by -0.5dB when carrier frequency of the assigned E-UTRA channel bandwidth is within 2515 – 2690 MHz.  NOTE 3: These requirements apply when the uplink is active in Band n1, n84 and the separation between the lower edge of the uplink channel in Band n1, n84 and the upper edge of the downlink channel in Band 3 is < 60 MHz. For each channel bandwidth in Band 3, the requirement applies regardless of channel bandwidth in Band n1, n84.  NOTE 4: The DL victim band should be configured using the lowest SCS that is compatible with the highest CBW for which an MSD is specified | | | | | | | | | | | | | | |

Table 7.3B.2.3.4-2: Uplink configuration for reference sensitivity exceptions due to cross band isolation for EN-DC in NR FR1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| E-UTRA or NR Band / SCS / Channel bandwidth of the affected DL band / UL RB allocation of the agressor band | | | | | | | | | | | | | | |
| UL band | DL band | SCS of UL band (kHz) | 5 MHz  (LCRB) | 10 MHz  (LCRB) | 15 MHz  (LCRB) | 20 MHz  (LCRB) | 25 MHz  (LCRB) | 30 MHz  (LCRB) | 40 MHz  (LCRB) | 50 MHz  (LCRB) | 60 MHz  (LCRB) | 80 MHz  (LCRB) | 90 MHz  (LCRB) | 100 MHz  (LCRB) |
| n1 | 3 | 15 | 25 | 25 | 25 | 25 |  |  |  |  |  |  |  |  |
| n1 | 40 | 15 | 25 | 50 | 75 | 100 |  |  |  |  |  |  |  |  |
| 1 | n3 | 15 | 25 | 25 | 25 | 25 | 25 | 25 |  |  |  |  |  |  |
| 1 | n41 | 15 |  | 100 | 100 | 100 |  |  | 100 | 100 | 100 | 100 | 100 | 100 |
| n3 | 11 | 15 | 25 | 50 |  |  |  |  |  |  |  |  |  |  |
| 3 | n41 | 15 |  | 50 | 50 | 50 |  |  | 50 | 50 | 50 | 50 | 50 | 50 |
| n3 | 41 | 15 | 25 | 502 | 502 | 502 |  |  |  |  |  |  |  |  |
| n5 | 28 | 15 | 25 | 25 | 20 | 20 |  |  |  |  |  |  |  |  |
| 7 | n40 | 15 | 25 | 50 | 75 | 75 |  |  | 100 | 100 | 100 | 100 |  |  |
| n38 | 1 | 15 | 100 | 100 | 100 | 100 |  |  |  |  |  |  |  |  |
| n38 | 2 | 15 | 100 | 100 | 100 | 100 |  |  |  |  |  |  |  |  |
| n38 | 4 | 15 | 100 | 100 | 100 | 100 |  |  |  |  |  |  |  |  |
| n38 | 66 | 15 | 100 | 100 | 100 | 100 |  |  |  |  |  |  |  |  |
| 40 | n1 | 15 | 25 | 50 | 75 | 100 |  |  |  |  |  |  |  |  |
| n40 | 7 | 30 | 216 | 216 | 216 | 216 |  |  |  |  |  |  |  |  |
| n41 | 1 | 30 | 128 | 128 | 128 | 128 |  |  |  |  |  |  |  |  |
| n41 | 2 | 30 | 160 | 160 | 160 | 160 |  |  |  |  |  |  |  |  |
| n41 | 3 | 30 | 160 | 160 | 160 | 160 |  |  |  |  |  |  |  |  |
| 41 | n3 | 15 | 25 | 50 | 75 | 100 | 100 | 100 |  |  |  |  |  |  |
| n41 | 4 | 30 | 128 | 128 | 128 | 128 |  |  |  |  |  |  |  |  |
| n41 | 25 | 30 | 160 | 160 | 160 | 160 |  |  |  |  |  |  |  |  |
| n41 | 66 | 30 | 128 | 128 | 128 | 128 |  |  |  |  |  |  |  |  |
| n50 | 3 | 30 | 160 | 160 | 160 | 160 |  |  |  |  |  |  |  |  |
| n77 | 7 | 30 | 270 | 270 | 270 | 270 |  |  |  |  |  |  |  |  |
| n77 | 41 | 30 | 270 | 270 | 270 | 270 |  |  |  |  |  |  |  |  |
| 41 | n77 | 15 |  | 100 | 100 | 100 |  |  | 100 | 100 | 100 | 100 | 100 | 100 |
| n78 | 7 | 30 | 270 | 270 | 270 | 270 |  |  |  |  |  |  |  |  |
| n78 | 38 | 30 | 270 | 270 | 270 | 270 |  |  |  |  |  |  |  |  |
| n78 | 41 | 30 | 270 | 270 | 270 | 270 |  |  |  |  |  |  |  |  |
| 41 | n78 | 15 |  | 100 | 100 | 100 |  |  | 100 | 100 | 100 | 100 | 100 | 100 |
| n84 | 3 | 15 | 25 | 25 | 25 | 25 |  |  |  |  |  |  |  |  |
| NOTE 1: The UL configuration applies regardless of the channel bandwidth of the UL band. UL resource blocks allocation in the table shall be further limited to that specified in Table 7.3.1-2 in TS 36.101 [4] or Table 7.3.2-3 in TS 38.101-1 [2].  NOTE 2: The UL resource blocks shall be located as close as possible to the downlink operating band but confined within the transmission bandwidth configuration for the channel bandwidth.  NOTE 3: When the maximum UL RB allocation “LCRB” value is less than the maximum transmission bandwidth configuration “NRB” defined in Table 5.3.2-1 in 38.101-1 [2] for the specified UL band SCS, the UL band should be configured using the lowest CBW that is compatible with the maximum specified LCRB value. | | | | | | | | | | | | | | |

##### 7.3B.2.3.5 MSD for intermodulation interference due to dual uplink operation for EN-DC in NR FR1

For EN-DC configurations in NR FR1 the UE may indicate capability of not supporting simultaneous dual uplink operation due to possible intermodulation interference overlapping in frequency to its own primary downlink channel bandwidth if

- the intermodulation order is 2;

- the intermodulation order is 3 when both operating bands are between 450 MHz – 960 MHz or between 1427 MHz – 2690 MHz

In the case for EN-DC configurations in NR FR1 for which the intermodulation products caused by dual uplink operation do not interfere with its own primary downlink channel bandwidth as defined in Annex I the UE is mandated to operate in dual and triple uplink mode.

For EN-DC configurations in NR FR1 with uplink and downlink assigned to E-UTRA and NR FR1 bands given in Table 7.3B.2.3.5.1-1, Table 7.3B.2.3.5.2-0 and Table 7.3B.2.3.5.2-1 the reference sensitivity is defined only for the specific uplink and downlink test points specified in Table 7.3B.2.3.5.1-1, Table 7.3B.2.3.5.2-0 and Table 7.3B.2.3.5.2-1. For these test points the reference sensitivity levels specified in clause 7.3.1 in TS 36.101 [4] and 7.3.2 of TS 38.101-1 [2] for the corresponding channel bandwidths or in clause 7.3.1 of TS 36.101 [4] are relaxed by the amount of the parameter MSD given in Table 7.3B.2.3.5.1-1, Table 7.3B.2.3.5.2-0 and Table 7.3B.2.3.5.2-1.

The throughput on each of the CGs shall be ≥ 95% of the maximum throughput of the respective reference measurement channels as specified in Annex A of TS 38.101-1 [2] and Annex A of TS 36.101 [4], with parameters specified in Table 7.3B.2.3.5.1-1, Table 7.3B.2.3.5.2-0 and Table 7.3B.2.3.5.2-1 with dual UL transmissions overlapping in time unless otherwise stated.

###### 7.3B.2.3.5.1 MSD test points for intermodulation interference due to dual uplink operation for EN-DC in NR FR1 involving two bands

Table 7.3B.2.3.5.1-1: MSD test points for PCell due to dual uplink operation for 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  (dB) | IMD order |
| DC\_1\_n3 | 1 | 1950 | 5 | 25 | 2140 | 23 | IMD3 |
| n3 | 1760 | 5 | 25 | 1855 | N/A | N/A |
| DC\_1A-n5A | 1 | 1965 | 5 | 25 | 2155 | 6 | IMD4 |
| n5 | 836.5 | 5 | 25 | 876.5 | N/A | N/A |
| DC\_1A\_n8A | 1 | 1965 | 5 | 25 | 2155 | 6.0 | IMD4 |
| n8 | 887.5 | 5 | 25 | 932.5 | N/A | N/A |
| DC\_1A\_n71A  DC\_1A\_n71B | 1 | 1958 | 5 | 25 | 2148 | N/A | N/A |
| n71 | 668 | 5 | 25 | 622 | 15.1 | IMD3 |
| DC\_1A\_n77A,  DC\_1A\_SUL\_n77A-n84A,  DC\_1A\_n77(2A), | 1 | 1950 | 5 | 25 | 2140 | 29.8 | IMD23 |
| 32.54 |
| n77 | 4090 | 10 | 50 | 4090 | N/A | N/A |
| DC\_1A\_n77A,  DC\_1A-SUL\_n77A-n84A,  DC\_1A\_n77(2A),  DC\_1A\_n78A,  DC\_1A\_SUL\_n78A-n84A,  DC\_1A\_n78(2A) | 1 | 1950 | 5 | 25 | 2140 | 8.0 | IMD43 |
| 10.74 |
| n77 | 3710 | 10 | 50 | 3710 | N/A | N/A |
| DC\_2A\_n48A | 2 | 1852.5 | 5 | 25 | 1932.5 | 12 | IMD4 |
| n48 | 3625 | 20 | 100 | 3625 | N/A | N/A |
| DC\_2A\_n66A, DC\_2A-2A\_n66A | 2 | 1855 | 5 | 25 | 1935 | 20 | IMD3 |
| n66 | 1775 | 5 | 25 | 2175 | N/A | N/A |
| DC\_2A\_n66A, DC\_2A-2A\_n66A | 2 | 1883.3 | 5 | 25 | 1963.3 | N/A | N/A |
| n66 | 1750 | 5 | 25 | 2150 | 4 | IMD5 |
| DC\_2A\_n78A  DC\_2A\_n78(2A) | 2 | 1855 | 5 | 25 | 1935 | 26 | IMD23 |
| 28.74 |
| n78 | 3790 | 10 | 50 | 3790 | N/A | N/A |
| DC\_2A\_n78A  DC\_2A\_n78(2A) | 2 | 1885 | 5 | 25 | 1965 | 8.0 | IMD43 |
| 10.74 |
| n78 | 3690 | 10 | 50 | 3690 | N/A | N/A |
| DC\_3\_n1 | 3 | 1760 | 5 | 25 | 1855 | N/A | N/A |
| n1 | 1950 | 5 | 25 | 2140 | 23 | IMD3 |
| DC\_3\_n5 | 3 | 1771 | 10 | 50 | 1866 | 4 | IMD4 |
| n5 | 838 | 5 | 25 | 883 | N/A | N/A |
| 3 | 1721 | 10 | 50 | 1816 | N/A | N/A |
| n5 | 838 | 5 | 25 | 883 | 24 | IMD23 |
| DC\_3A\_n7A  DC\_3C\_n7A | 3 | 1730 | 5 | 25 | 1825 | N/A | N/A |
| n7 | 2535 | 10 | 50 | 2655 | 10.2 | IMD4 |
| DC\_3\_n8 | n8 | 900 | 5 | 25 | 945 | 8 | IMD43 |
| 3 | 1755 | 10 | 50 | 1850 | N/A | N/A |
| n8 | 897.5 | 5 | 25 | 942.5 | N/A | N/A |
| 3 | 1747.5 | 10 | 50 | 1842.5 | 6.4 | IMD5 |
| CA\_3A-n20A | 3 | 1775 | 5 | 25 | 1870 | 4 | IMD4 |
| n20 | 840 | 5 | 25 | 799 | N/A | N/A |
| 3 | 1735 | 5 | 25 | 1830 | N/A | N/A |
| n20 | 847 | 5 | 25 | 806 | 9 | IMD4 |
| DC\_3A\_n38A | 3 | 1713 | 5 | 25 | 1808 | 8.2 | IMD4 |
| n38 | 2617 | 5 | 25 | 2617 | N/A | N/A |
| DC\_3A\_n41A  DC\_3C\_n41A  DC\_3A\_SUL\_n41A-n80A, DC\_3C\_SUL\_n41A-n80A | 3 | 1740 | 5 | 25 | 1835 | 8.2 | IMD4 |
| n41 | 2657.5 | 10 | 50 | 2657.5 | N/A | N/A |
| DC\_3A\_n77A,  DC\_3A\_n77(2A),  DC\_3A\_SUL\_n77A-n80A,  DC\_3A\_n78A,  DC\_3A-SUL\_n78A-n80A,  DC\_3A\_n78(2A),  DC\_3C\_n78A  DC\_3C\_n78(2A) | 3 | 1740 | 5 | 25 | 1835 | 26 | IMD23 |
| 28.74 |
| n77, n78 | 3575 | 10 | 50 | 3575 | N/A | N/A |
| DC\_3A\_n77A,  DC\_3A\_n77(2A),  DC\_3A\_SUL\_n77A-n80A,  DC\_3A\_n78A, DC\_3A-SUL\_n78A-n80A,  DC\_3A\_n78(2A),  DC\_3C\_n78A  DC\_3C\_n78(2A) | 3 | 1765 | 5 | 25 | 1860 | 8.0 | IMD43 |
| 10.74 |
| n77, n78 | 3435 | 10 | 50 | 3435 | N/A | N/A |
| DC\_5\_n7 | n7 | 2547 | 10 | 50 | 2667 | N/A | N/A |
| 5 | 834 | 5 | 25 | 879 | 12 | IMD33 |
| DC\_5\_n38 | 5 | 844 | 5 | 25 | 889 | 12 | IMD33 |
| n38 | 2577 | 10 | 50 | 2577 | N/A | N/A |
| DC\_5A\_n66A | 5 | 838 | 5 | 25 | 883 | 30 | IMD23 |
| n66 | 1721 | 5 | 25 | 2121 | N/A | N/A |
| DC\_5A\_n78A  DC\_5A\_n78(2A) | 5 | 844 | 5 | 25 | 889 | 8.3 | IMD4 |
| n78 | 3421 | 10 | 50 | 3421 | N/A | N/A |
| DC\_7\_n3 | 7 | 2535 | 10 | 50 | 2655 | 13 | IMD4 |
| n3 | 1730 | 5 | 25 | 1825 | N/A | N/A |
| DC\_7\_n5 | 7 | 2547 | 10 | 50 | 2667 | N/A | N/A |
| n5 | 834 | 5 | 25 | 879 | 12 | IMD33 |
| DC\_7A\_n20A | 7 | 2512 | 10 | 50 | 2632 | N/A | N/A |
| n20 | 851 | 5 | 25 | 810 | 12 | IMD33 |
| DC\_7\_n40 | 7 | 2510 | 5 | 25 | 2630 | 23 | IMD3 |
| n40 | 2390 | 5 | 25 | 2390 | N/A | N/A |
| DC\_7A\_n66A  DC\_7A-7A\_n66A  DC\_7C\_n66A | 7 | 2535 | 10 | 50 | 2655 | 15 | 4th IMD |
| n66 | 1730 | 5 | 25 | 2130 | N/A | N/A |
| DC\_7A\_n77A | 7 | 2540 | 5 | 25 | 2660 | 7.1 | IMD4 |
| n77 | 3870 | 10 | 50 | 3870 | N/A | N/A |
| DC\_8A\_n1A | 8 | 887.5 | 5 | 25 | 932.5 | N/A | N/A |
| n1 | 1965 | 5 | 25 | 2155 | 6 | IMD4 |
| DC\_8A\_n3A | 8 | 900 | 5 | 25 | 945 | 8 | IMD43 |
| n3 | 1755 | 10 | 50 | 1850 | N/A | N/A |
| 8 | 897.5 | 5 | 25 | 942.5 | N/A | N/A |
| n3 | 1747.5 | 10 | 50 | 1842.5 | 6.4 | IMD5 |
| DC\_8A\_n20A | n20 | 849.5 | 5 | 25 | 808.5 | 25 | IMD33 |
| 8 | 890.5 | 5 | 25 | 935.5 | N/A | N/A |
| n20 | 847.5 | 5 | 25 | 806.5 | N/A | N/A |
| 8 | 892.5 | 5 | 25 | 937.5 | 25 | IMD33 |
| DC\_8A\_n41A  DC\_8A\_SUL\_n41A-n81A | 8 | 882.5 | 5 | 25 | 927.5 | 12.1 | IMD33 |
| n41 | 2685 | 10 | 50 | 2685 | N/A | N/A |
| DC\_8A\_n77A,  DC\_8A\_n78A, DC\_8A-SUL\_n78A-n81A | 8 | 897.5 | 5 | 25 | 942.5 | 8.3 | IMD4 |
| n77, n78 | 3635 | 10 | 50 | 3635 | N/A | N/A |
| DC\_8A\_n79A,  DC\_8A-n79C,  DC\_8A-SUL\_n79A-n81A | 8 | 897.5 | 5 | 25 | 942.5 | 4.8 | IMD5 |
| n79 | 4532.5 | 40 | 216 | 4532.5 | N/A | N/A |
| DC\_11A\_n28A | 11 | 1430.5 | 5 | 25 | 1478.5 | N/A | N/A |
| n28 | 743 | 5 | 25 | 798 | 10.4 | IMD4 |
| DC\_12\_n78 | 12 | 710 | 5 | 25 | 740 | 5.5 | IMD5 |
| n78 | 3580 | 10 | 50 | 3580 | N/A | N/A |
| DC\_13\_n5 | 13 | 783 | 5 | 25 | 752 | N/A | N/A |
| n5 | 828 | 5 | 25 | 873 | 25 | IMD3 |
| DC\_13A\_n7A  DC\_13A\_n7(2A) | 13 | 784.5 | 5 | 25 | 753.5 | N/A | N/A |
| n7 | 2520 | 40 | 216 | 2640 | 2.5 | IMD5 |
| DC\_18A\_n3A | 18 | 823 | 5 | 25 | 868 | N/A | N/A |
| n3 | 1721 | 5 | 25 | 1816 | 4 | IMD4 |
| DC\_20A\_n3A | 20 | 840 | 5 | 25 | 799 | N/A | N/A |
| n3 | 1775 | 5 | 25 | 1870 | 4 | IMD4 |
| 20 | 847 | 5 | 25 | 806 | 9 | IMD4 |
| n3 | 1735 | 5 | 25 | 1830 | N/A | N/A |
| DC\_20\_n7 | 20 | 851 | 5 | 25 | 810 | 12 | IMD33 |
| n7 | 2512 | 10 | 50 | 2632 | N/A | N/A |
| DC\_20A\_n8A | 20 | 849.5 | 5 | 25 | 808.5 | 25 | IMD3 |
| n8 | 892.5 | 5 | 25 | 937.5 | 25 | IMD3 |
| DC\_20\_n41 | 20 | 851 | 5 | 25 | 810 | 12.1 | IMD3 |
| n41 | 2512 | 10 | 50 | 2512 | N/A | N/A |
| DC\_20\_n41 | 20 | 841 | 5 | 25 | 800 | 8.1 | IMD5 |
| n41 | 2564 | 10 | 50 | 2564 | N/A | N/A |
| DC\_20A\_n77A,  DC\_20A\_n78A,  DC\_20A\_n78(2A),  DC\_20A-SUL\_n78A-n82A | 20 | 850 | 5 | 25 | 809 | 11 | IMD4 |
| n77, n78 | 3359 | 10 | 50 | 3359 | N/A | N/A |
| DC\_20A\_n77A | 20 | 840 | 5 | 25 | 799 | 6.5 | IMD5 |
| n77 | 4159 | 10 | 50 | 4159 | N/A | N/A |
| DC\_21A\_n79A | 21 | 1457.5 | 5 | 25 | 1505.5 | 18.4 | IMD3 |
| n79 | 4420.5 | 40 | 216 | 4420.5 | N/A | N/A |
| DC\_26A\_n41A | 26 | 839 | 5 | 25 | 884 | 15.6 | IMD33 |
| n41 | 2562 | 10 | 50 | 2562 | N/A | N/A |
| DC\_28\_n50 | 28 | 730 | 10 | 50 | 775 | 15.3 | IMD 2 |
| n50 | 1500 | 10 | 50 | 1500 | N/A | N/A |
| 28 | 740 | 10 | 50 | 785 | 6 | IMD 4 |
| n50 | 1500 | 10 | 50 | 1500 | N/A | N/A |
| 28 | 740 | 10 | 50 | 785 | 0.5 | IMD 5 |
| n50 | 1500 | 10 | 50 | 1500 | N/A | N/A |
| DC\_28A\_n51A | 28 | 742.3 | 5 | 25 | 797.3 | 5 | IMD4 |
| n51 | 1429.5 | 5 | 25 | 1429.5 | N/A | N/A |
| DC\_26A\_n77A,  DC\_26A\_n78A | 26 | 836.5 | 5 | 25 | 881.5 | 11.1 | IMD4 |
| n77, n78 | 3391 | 10 | 50 | 3391 | N/A | N/A |
| DC\_28A\_n77A,  DC\_28A\_n78A,  DC\_28A\_n78(2A),  DC\_28A-SUL\_n78A-n83A | 28 | 705.5 | 5 | 25 | 760.5 | 5.5 | IMD5 |
| n77, n78 | 3582.5 | 10 | 50 | 3582.5 | N/A | N/A |
| DC\_41A\_n3A  DC\_41C\_n3A | n3 | 1740 | 5 | 25 | 1835 | 8.2 | IMD4 |
| 41 | 2657.5 | 5 | 25 | 2657.5 | N/A | N/A |
| DC\_42\_n28 | 42 | 3582.5 | 10 | 50 | 3582.5 | N/A | N/A |
| n28 | 705.5 | 5 | 25 | 760.5 | 5.5 | IMD5 |
| DC\_48A\_n12A | 48 | 3557.5 | 10 | 50 | 3557.5 | N/A | N/A |
| n12 | 705.5 | 5 | 25 | 735.5 | 5.5 | IMD5 |
| DC\_48A\_n66A | 48 | 3630 | 20 | 100 | 3630 | N/A | N/A |
| n66 | 1715 | 5 | 25 | 2115 | 4 | IMD5 |
| DC\_66A\_n2A, DC\_66A-66A\_n2A | 66 | 1775 | 5 | 25 | 2175 | N/A | N/A |
| n2 | 1855 | 5 | 25 | 1935 | 20 | IMD3 |
| 66 | 1750 | 5 | 25 | 2150 | 4 | IMD5 |
| n2 | 1883.3 | 5 | 25 | 1963.3 | N/A | N/A |
| DC\_66A\_n5A | n5 | 838 | 5 | 25 | 883 | 30 | IMD23 |
| 66 | 1721 | 5 | 25 | 2121 | N/A | N/A |
| DC\_66A\_n7A  DC\_66A-66A\_n7A  DC\_66A\_n7(2A)  DC\_66A-66A\_n7(2A) | 66 | 1730 | 5 | 25 | 2130 | N/A | N/A |
| n7 | 2535 | 10 | 50 | 2655 | 15 | IMD4 |
| DC\_66A\_n25A | 66 | 1775 | 5 | 25 | 2175 | N/A | N/A |
| n25 | 1855 | 5 | 25 | 1935 | 20 | IMD3 |
| 66 | 1712.5 | 5 | 25 | 2112.5 | 23 | IMD3 |
| n25 | 1912.5 | 5 | 25 | 1992.5 | N/A | N/A |
| 66 | 1750 | 5 | 25 | 2150 | 4 | IMD5 |
| n25 | 1883.3 | 5 | 25 | 1963.3 | N/A | N/A |
| DC\_66A\_n48A | 66 | 1715 | 5 | 25 | 2115 | 4 | IMD5 |
| n48 | 3630 | 20 | 100 | 3630 | N/A | N/A |
| DC\_66A\_n71A | 66 | 1750 | 5 | 25 | 2150 | 5 | IMD4 |
| n71 | 675 | 5 | 25 | 629 | N/A | N/A |
| DC\_71A\_n38A | 71 | 665 | 5 | 25 | 619 | 11 | IMD4 |
| n38 | 2614 | 5 | 25 | 2614 | N/A | N/A |
| DC\_71A\_n66A | 71 | 675 | 5 | 25 | 629 | N/A | N/A |
| n66 | 1750 | 5 | 25 | 2150 | 5 | IMD4 |
| DC\_71A\_n78A | 71 | 681.5 | 5 | 25 | 635.5 | 5.5 | IMD5 |
| n78 | 3361.5 | 10 | 50 | 3582.5 | N/A | N/A |
| NOTE 1: Both of the transmitters shall be set min(+20 dBm, PCMAX\_L,c) as defined in clause 6.2.5A.  NOTE 2: RBstart = 0  NOTE 3: This band is subject to IMD5 also which MSD is not specified.  NOTE 4: Applicable only if operation with 4 antenna ports is supported in the band with EN-DC configured.  NOTE 5: Void | | | | | | | |

## << Eighth changes >>

#### 7.3B.3.2 Intra-band non-contiguous EN-DC

Table 7.3B.3.2-1: Intra-band non-contiguous EN-DC with one uplink configuration on E-UTRA for reference sensitivity (E-UTRA carrier is higher than the NR carrier)

| DC configuration | Aggregated channel bandwidth | | Wgap / (MHz) | UL E-UTRA allocation | ΔRIBNC (dB) | Duplex mode |
| --- | --- | --- | --- | --- | --- | --- |
| E-UTRA | NR |
| DC\_3A\_n3A | 5 MHz | 5 MHz | 45.0 < Wgap ≤ 65.0 | 121 | 4.7 | FDD |
| 0.0 < Wgap ≤ 45.0 | 251 | 0 |
| 5 MHz | 10 MHz | 40.0 < Wgap ≤ 60.0 | 121 | 3.8 |
| 0.0 < Wgap ≤ 40.0 | 251 | 0 |
| 5 MHz | 15 MHz | 35.0 < Wgap ≤ 55.0 | 121 | 3.6 |
| 0.0 < Wgap ≤ 35.0 | 251 | 0 |
| 5 MHz | 20 MHz | 30.0 < Wgap ≤ 50.0 | 121 | 3.4 |
| 0.0 < Wgap ≤ 30.0 | 251 | 0 |
| 5 MHz | 25 MHz | 25.0 < Wgap ≤ 45.0 | 121 | 3.2 |
| 0.0 < Wgap ≤ 25.0 | 251 | 0 |
| 5 MHz | 30 MHz | 20.0 < Wgap ≤ 40.0 | 121 | 3.0 |
| 0.0 < Wgap ≤ 20.0 | 251 | 0 |
| 10 MHz | 5 MHz | 30.0 < Wgap ≤ 60.0 | 125 | 5.1 |
| 0.0 < Wgap ≤ 30.0 | 321 | 0 |
| 10 MHz | 10MHz | 25.0 < Wgap ≤ 55.0 | 125 | 4.3 |
| 0.0 < Wgap ≤ 25.0 | 321 | 0 |
| 10 MHz | 15 MHz | 20.0 < Wgap ≤ 50.0 | 125 | 3.8 |
| 0.0 < Wgap ≤ 20.0 | 321 | 0 |
| 10 MHz | 20 MHz | 15.0 < Wgap ≤ 45.0 | 125 | 3.5 |
| 0.0 < Wgap ≤ 15.0 | 321 | 0 |
| 10 MHz | 25 MHz | 10.0 < Wgap ≤ 40.0 | 125 | 3.2 |
| 0.0 < Wgap ≤ 10.0 | 321 | 0 |
| 10 MHz | 30 MHz | 5.0 < Wgap ≤ 35.0 | 125 | 2.8 |
| 0.0 < Wgap ≤ 5.0 | 321 | 0 |
| 15 MHz | 5 MHz | 25.0 < Wgap ≤ 55.0 | 126 | 6.0 |
| 0.0 < Wgap ≤ 25.0 | 321 | 0 |
| 15 MHz | 10 MHz | 20.0 < Wgap ≤ 50.0 | 126 | 4.7 |
| 0.0 < Wgap ≤ 20.0 | 321 | 0 |
| 15 MHz | 15 MHz | 15.0 < Wgap ≤ 45.0 | 126 | 4.2 |
| 0.0 < Wgap ≤ 15.0 | 321 | 0 |
| 15 MHz | 20 MHz | 10.0 < Wgap ≤ 40.0 | 126 | 3.8 |
| 0.0 < Wgap ≤ 10.0 | 321 | 0 |
| 15 MHz | 25 MHz | 5.0 < Wgap ≤ 35.0 | 126 | 3.5 |
| 0.0 < Wgap ≤ 5.0 | 321 | 0 |
| 15 MHz | 30 MHz | 0.0 < Wgap ≤ 30.0 | 126 | 3.3 |
| 20 MHz | 5 MHz | 15.0 < Wgap ≤ 50.0 | 167 | 6.5 |
| 0.0 < Wgap ≤ 15.0 | 321 | 0 |
| 20 MHz | 10 MHz | 10.0 < Wgap ≤ 45.0 | 167 | 5.1 |
| 0.0 < Wgap ≤ 10.0 | 321 | 0 |
| 20 MHz | 15 MHz | 5.0 < Wgap ≤ 40.0 | 167 | 4.5 |
| 0.0 < Wgap ≤ 5.0 | 321 | 0 |
| 20 MHz | 20 MHz | 0.0 < Wgap ≤ 35.0 | 167 | 4.1 |
| 20 MHz | 25 MHz | 0.0 < Wgap ≤ 30.0 | 167 | 3.8 |
| 20 MHz | 30 MHz | 0.0 < Wgap ≤ 25.0 | 167 | 3.6 |
| DC\_66A\_n66A | NOTE 4 | | NOTE 8 | NOTE 9 | 0 | FDD |
| NOTE 1: UL resource blocks shall be located as close as possible to the downlink operating band but confined within the transmission.  NOTE 2: Wgap is the sub-block gap between the two sub-blocks.  NOTE 3: The table only applies when the center frequency of E-UTRA carrier is higher than the NR carrier, and the ΔRIBNC applies to the NR DL carrier only  NOTE 4: All combinations of channel bandwidths defined in Table 5.3B.1.3-1.  NOTE 5: UL resource blocks shall be located at RBstart = 25.  NOTE 6: UL resource blocks shall be located at RBstart = 35.  NOTE 7: UL resource blocks shall be located at RBstart = 50.  NOTE 8: All applicable sub-block gap sizes.  NOTE 9: The UL LTE allocation is same as Transmission bandwidth configuration NRB as defined in Table 5.6-1 in TS 36.101 [4]. | | | | | | |

Table 7.3B.3.2-2: Intra-band non-contiguous EN-DC with one uplink configuration on NR for reference sensitivity (NR carrier is higher than the E-UTRA carrier)

| DC configuration | Aggregated bandwidth | | Wgap / (MHz) | UL NR allocation | ΔRIBNC (dB) | Duplex mode |
| --- | --- | --- | --- | --- | --- | --- |
| NR | E-UTRA |
| DC\_2A\_n2A | 5MHz | 5MHz | 30.0 < Wgap ≤ 50.0 | 121 | 5.3 | FDD |
| 0.0 < Wgap ≤ 30.0 | 251 | 0 |
| 5MHz | 10MHz | 25.0 < Wgap ≤ 45.0 | 121 | 4.4 |
| 0.0 < Wgap ≤ 25.0 | 251 | 0 |
| 5MHz | 15MHz | 20.0 < Wgap ≤ 40.0 | 121 | 4.2 |
| 0.0 < Wgap ≤ 20.0 | 251 | 0 |
| 5MHz | 20MHz | 15.0 < Wgap ≤ 35.0 | 121 | 3.8 |
| 0.0 < Wgap ≤ 15.0 | 251 | 0 |
| 10MHz | 5MHz | 15.0 < Wgap ≤ 45.0 | 121 | 5.9 |
| 0.0 < Wgap ≤ 15.0 | 321 | 0 |
| 10MHz | 10MHz | 10.0 < Wgap ≤ 40.0 | 121 | 4.6 |
| 0.0 < Wgap ≤ 10.0 | 321 | 0 |
| 10MHz | 15MHz | 5.0 < Wgap ≤ 35.0 | 121 | 4.1 |
| 0.0 < Wgap ≤ 5.0 | 321 | 0 |
| 10MHz | 20MHz | 0.0 < Wgap ≤ 30.0 | 121 | 4.0 |
| 15MHz | 5MHz | 10.0 < Wgap ≤ 40.0 | 1211 | 6.7 |
| 0.0 < Wgap ≤ 10.0 | 361 | 0 |
| 15MHz | 10MHz | 5.0 < Wgap ≤ 35.0 | 1211 | 5.4 |
| 0.0 < Wgap ≤ 5.0 | 361 | 0 |
| 15MHz | 15MHz | 0.0 < Wgap ≤ 30.0 | 1211 | 4.6 |
| 15MHz | 20MHz | 0.0 < Wgap ≤ 25.0 | 1211 | 4.2 |
| 20MHz | 5MHz | 0.0 < Wgap ≤ 35.0 | 1612 | 7.2 |
| 20MHz | 10MHz | 0.0 < Wgap ≤ 30.0 | 1612 | 5.8 |
| 20MHz | 15MHz | 0.0 < Wgap ≤ 25.0 | 1612 | 5.0 |
| 20MHz | 20MHz | 0.0 < Wgap ≤ 20.0 | 1612 | 4.6 |
| DC\_3A\_n3A | 5MHz | 5MHz | 45.0 < Wgap ≤ 65.0 | 121 | 4.7 | FDD |
| 0.0 < Wgap ≤ 45.0 | 251 | 0 |
| 5MHz | 10MHz | 40.0 < Wgap ≤ 60.0 | 121 | 3.8 |
| 0.0 < Wgap ≤ 40.0 | 251 | 0 |
| 5MHz | 15MHz | 35.0 < Wgap ≤ 55.0 | 121 | 3.6 |
| 0.0 < Wgap ≤ 35.0 | 251 | 0 |
| 5MHz | 20MHz | 30.0 < Wgap ≤ 50.0 | 121 | 3.4 |
| 0.0 < Wgap ≤ 30.0 | 251 | 0 |
| 10MHz | 5MHz | 30.0 < Wgap ≤ 60.0 | 125 | 5.1 |
| 0.0 < Wgap ≤ 30.0 | 321 | 0 |
| 10MHz | 10MHz | 25.0 < Wgap ≤ 55.0 | 125 | 4.3 |
| 0.0 < Wgap ≤ 25.0 | 321 | 0 |
| 10MHz | 15MHz | 20.0 < Wgap ≤ 50.0 | 125 | 3.8 |
| 0.0 < Wgap ≤ 20.0 | 321 | 0 |
| 10MHz | 20MHz | 15.0 < Wgap ≤ 45.0 | 125 | 3.5 |
| 0.0 < Wgap ≤ 15.0 | 321 | 0 |
| 15MHz | 5MHz | 25.0 < Wgap ≤ 55.0 | 126 | 6.0 |
| 0.0 < Wgap ≤ 25.0 | 321 | 0 |
| 15MHz | 10MHz | 20.0 < Wgap ≤ 50.0 | 126 | 4.7 |
| 0.0 < Wgap ≤ 20.0 | 321 | 0 |
| 15MHz | 15MHz | 15.0 < Wgap ≤ 45.0 | 126 | 4.2 |
| 0.0 < Wgap ≤ 15.0 | 321 | 0 |
| 15MHz | 20MHz | 10.0 < Wgap ≤ 40.0 | 126 | 3.8 |
| 0.0 < Wgap ≤ 10.0 | 321 | 0 |
| 20MHz | 5MHz | 15.0 < Wgap ≤ 50.0 | 167 | 6.5 |
| 0.0 < Wgap ≤ 15.0 | 321 | 0 |
| 20MHz | 10MHz | 10.0 < Wgap ≤ 45.0 | 167 | 5.1 |
| 0.0 < Wgap ≤ 10.0 | 321 | 0 |
| 20MHz | 15MHz | 5.0 < Wgap ≤ 40.0 | 167 | 4.5 |
| 0.0 < Wgap ≤ 5.0 | 321 | 0 |
| 20MHz | 20MHz | 0.0 < Wgap ≤ 35.0 | 167 | 4.1 |
| 25MHz | 5MHz | 10.0 < Wgap ≤ 45.0 | 168 | 7.4 |
| 0.0 < Wgap ≤ 10.0 | 321 | 0 |
| 25MHz | 10MHz | 5.0 < Wgap ≤ 40.0 | 168 | 5.5 |
| 0.0 < Wgap ≤ 5.0 | 321 | 0 |
| 25MHz | 15MHz | 0.0 < Wgap ≤ 35.0 | 168 | 4.9 |
| 25MHz | 20MHz | 0.0 < Wgap ≤ 30.0 | 168 | 4.6 |
| 30MHz | 5MHz | 5.0 < Wgap ≤ 40.0 | 169 | 8.3 |
| 0.0 < Wgap ≤ 5.0 | 321 | 0 |
| 30MHz | 10MHz | 0.0 < Wgap ≤ 35.0 | 169 | 5.9 |
| 30MHz | 15MHz | 0.0 < Wgap ≤ 30.0 | 169 | 5.5 |
| 30MHz | 20MHz | 0.0 < Wgap ≤ 25.0 | 169 | 4.9 |
| DC\_5A\_n5A | 5 MHz | 5 MHz | NOTE 10 | 121 | 5.3 | FDD |
| 10 MHz | 5 MHz | 4.4 |
| 15 MHz | 5 MHz | 6.1 |
| 5 MHz | 10 MHz | 5.9 |
| 10 MHz | 10 MHz | 4.6 |
| DC\_7A\_n7A | 5MHz | 5MHz | 0< Wgap ≤ 60 | 25 | 0.0 | FDD |
| 5MHz | 10MHz | 0 < Wgap ≤ 55 | 25 | 0.0 |
| 5MHz | 15MHz | 0 < Wgap ≤ 50 | 25 | 0.0 |
| 5MHz | 20MHz | 0 < Wgap ≤ 45 | 25 | 0.0 |
| 10MHz | 5MHz | 30 < Wgap ≤ 55 | 321 | 0.0 |
| 0 < Wgap ≤ 30 | 50 | 0.0 |
| 10MHz | 10MHz | 25.0 < Wgap ≤ 50.0 | 321 | 0.0 |
| 0.0 < Wgap ≤ 25.0 | 50 | 0.0 |
| 10MHz | 15MHz | 20 < Wgap ≤ 45 | 321 | 0.0 |
| 0 < Wgap ≤ 20 | 50 | 0.0 |
| 10MHz | 20MHz | 15 < Wgap ≤ 40 | 321 | 0.0 |
| 0 < Wgap ≤ 15 | 50 | 0.0 |
| 15MHz | 5MHz | 20.0 < Wgap ≤ 50.0 | 321 | 0.0 |
| 0.0 < Wgap ≤ 20.0 | 501 | 0.0 |
| 15MHz | 10MHz | 20.0 < Wgap ≤ 45.0 | 321 | 0.0 |
| 0.0 < Wgap ≤ 20.0 | 501 | 0.0 |
| 15MHz | 15MHz | 15.0 < Wgap ≤ 40.0 | 321 | 0.0 |
| 0.0 < Wgap ≤ 15.0 | 501 | 0.0 |
| 15MHz | 20MHz | 10 < Wgap ≤ 35 | 321 | 0.0 |
| 0 < Wgap ≤ 10 | 501 | 0.0 |
| 20MHz | 5MHz | 25 < Wgap ≤ 45 | 321 | 0.0 |
| 0 < Wgap ≤ 25 | 451 | 0.0 |
| 20MHz | 10MHz | 20 < Wgap ≤ 40 | 321 | 0.0 |
| 0 < Wgap ≤ 20 | 451 | 0.0 |
| 20MHz | 15MHz | 15.0 < Wgap ≤ 35.0 | 361 | 0.0 |
| 0.0 < Wgap ≤ 15.0 | 501 | 0.0 |
| 20MHz | 20MHz | 15.0 < Wgap ≤ 30.0 | 321 | 0.0 |
| 0.0 < Wgap ≤ 15.0 | 451 | 0.0 |
| NOTE 1: 1 refers to the UL resource blocks shall be located as close as possible to the downlink operating band but confined within the transmission.  NOTE 2: Wgap is the sub-block gap between the two sub-blocks.  NOTE 3: The table only applies when the center frequency of NR carrier is higher than the E-UTRA carrier, and the ΔRIBNC applies to the E-UTRA DL carrier only.  NOTE 4: All combinations of channel bandwidths defined in Table 5.3B.1.3-1.  NOTE 5: 5 refers to the UL resource blocks shall be located at RBstart=25.  NOTE 6: 6 refers to the UL resource blocks shall be located at RBstart=35.  NOTE 7: 7 refers to the UL resource blocks shall be located at RBstart=50.  NOTE 8: 8 refers to the UL resource blocks shall be located at RBstart=60.  NOTE 9: 9 refers to the UL resource blocks shall be located at RBstart=75.  NOTE 10: All applicable sub-block gap sizes.  NOTE 11: 11 refers to the UL resource blocks shall be located at RBstart=39.  NOTE 12: 12 refers to the UL resource blocks shall be located at RBstart=57. | | | | | | |

#### 7.3B.3.3 Inter-band EN-DC within FR1

##### 7.3B.3.3.1 ΔRIB,c for EN-DC in two bands

Table 7.3B.3.3.1-1: ΔRIB,c due to EN-DC(two bands)

| Inter-band EN-DC configuration | E-UTRA or NR Band | ΔRIB,c (dB) |
| --- | --- | --- |
| DC\_1\_n28 | n28 | 0.2 |
| DC\_1\_n51 | n51 | 0.1 |
| DC\_1\_n77 | 1 | 0.2 |
| n77 | 0.5 |
| DC\_1\_n78 | n78 | 0.5 |
| DC\_2\_n48 | 2 | 0.2 |
| n48 | 0.5 |
| DC\_2\_n66 | 2 | 0.3 |
| n66 | 0.3 |
| DC\_2\_n78 | 2 | 0.2 |
| n78 | 0.5 |
| DC\_3-n41 | n41 | 03 |
| 0.54 |
| DC\_3\_n51 | 3 | 0.2 |
| n51 | 0.2 |
| DC\_3\_n77, DC\_3-3\_n77 | 3 | 0.2 |
| n77 | 0.5 |
| DC\_3\_n78, DC\_3-3\_n78 | 3 | 0.2 |
| n78 | 0.5 |
| DC\_5\_n78 | 5 | 0.2 |
| n78 | 0.5 |
| DC\_4\_n38 | 4 | 0.5 |
| n38 | 0.5 |
| DC\_4\_n41 | 4 | 0.5 |
| n41 | 0.51 |
| 12 |
| DC\_4\_n78 | 4 | 0.2 |
| n78 | 0.5 |
| DC\_5\_n12 | 5 | 0.5 |
| n12 | 0.3 |
| DC\_7\_n8 | n8 | 0.2 |
| DC\_7\_n40 | n40 | 0.5 |
| DC\_7\_n51 | n51 | 0.2 |
| DC\_7\_n66, DC\_7-7\_n66 | 7 | 0.5 |
| n66 | 0.5 |
| DC\_7\_n71 | n71 | 0.2 |
| DC\_7\_n77, DC\_7-7\_n77 | n77 | 0.5 |
| DC\_7\_n78, DC\_7-7\_n78 | n78 | 0.5 |
| DC\_8\_n28 | 8 | 0.2 |
| n28 | 0.1 |
| DC\_8\_n77 | 8 | 0.2 |
| n77 | 0.5 |
| DC\_8\_n78 | 8 | 0.2 |
| n78 | 0.5 |
| DC\_11\_n3 | 11 | 0.3 |
| n3 | 0.5 |
| DC\_11\_n28 | n28 | 0.2 |
| DC\_11\_n77 | n77 | 0.5 |
| DC\_11\_n78 | n78 | 0.5 |
| DC\_12\_n5 | 12 | 0.3 |
| n5 | 0.5 |
| DC\_12\_n66 | 12 | 0.5 |
| DC\_12\_n78 | 12 | 0.2 |
| n78 | 0.5 |
| DC\_13\_n7 | 13 | 0.5 |
| n7 | 0.5 |
| DC\_13\_n78 | 13 | 0.2 |
| n78 | 0.5 |
| DC\_18\_n77 | n77 | 0.5 |
| DC\_19\_n77 | n77 | 0.5 |
| DC\_19\_n78 | n78 | 0.5 |
| DC\_20\_n51 | n51 | 0.2 |
| DC\_20\_n77 | n77 | 0.5 |
| DC\_20\_n78 | n78 | 0.5 |
| DC\_21\_n77 | n77 | 0.5 |
| DC\_21\_n78 | n78 | 0.5 |
| DC\_25\_n41,  DC\_25-25\_n41 | n41 | 01 |
| 0.52 |
| DC\_26\_n77 | n77 | 0.5 |
| DC\_26\_n78 | n78 | 0.5 |
| DC\_28\_n8 | 28 | 0.1 |
| n8 | 0.2 |
| DC\_28A\_n51 | n51 | 0.2 |
| DC\_28\_n77 | 28 | 0.2 |
| n77 | 0.5 |
| DC\_28\_n78 | 28 | 0.2 |
| n78 | 0.5 |
| DC\_30\_n66 | 30 | 0.5 |
| n66 | 0.4 |
| DC\_38\_n78 | 38 | 0.4 |
| n78 | 0.5 |
| DC\_39\_n40 | 39 | 0.3 |
| n40 | 0.3 |
| DC\_39-n41 | 39 | 0.2 |
| n41 | 0.2 |
| DC\_39\_n78 | n78 | 0.5 |
| DC\_39\_n79 | n79 | 0.5 |
| DC\_40\_n77 | 40 | 0.4 |
| n77 | 0.5 |
| DC\_40\_n78 | 40 | 0.45 |
| n78 | 0.55 |
| DC\_40\_n79 | n79 | 0.5 |
| DC\_41\_n3 | 41 | 03 |
| 0.54 |
| DC\_42\_n28 | 42 | 0.2 |
| n28 | 0.5 |
| DC\_41\_n77 | n77 | 0.5 |
| DC\_41\_n78 | n78 | 0.5 |
| DC\_41\_n79 | n79 | 0.5 |
| DC\_42\_n51 | n51 | 0.2 |
| DC\_48\_n66 | 48 | 0.5 |
| n66 | 0.2 |
| DC\_66\_n2 | 66 | 0.3 |
| n2 | 0.3 |
| DC\_66\_n7 | 66 | 0.5 |
| n7 | 0.5 |
| DC\_66\_n12 | 66 | 0.5 |
| DC\_66\_n25 | 66 | 0.3 |
| n25 | 0.3 |
| DC\_66\_n38 | 66 | 0.5 |
| n38 | 0.5 |
| DC\_66\_n41 | 66 | 0.5 |
| n41 | 0.51 |
| 12 |
| DC\_66\_n48,  DC\_66-66\_n48 | 66 | 0.2 |
| n48 | 0.5 |
| DC\_66\_n78 | 66 | 0.2 |
| n78 | 0.5 |
| DC\_71\_n38 | 71 | 0.2 |
| DC\_71\_n78 | 71 | 0.2 |
| n78 | 0.5 |
| NOTE 1: The requirement is applied for UE transmitting on the frequency range of 2545 – 2690 MHz.  NOTE 2: The requirement is applied for UE transmitting on the frequency range of 2496 – 2545 MHz.  NOTE 3: Applicable for the frequency range of 2515 – 2690 MHz.  NOTE 4: Applicable for the frequency range of 2496 – 2515 MHz.  NOTE 5: Only applicable for UE supporting inter-band carrier aggregation with uplink in one E-UTRA band and without simultaneous Rx/Tx. | | |

## << Ninth changes >>

Annex I (normative):  
Dual uplink interferer

UE is mandated to support operation in dual and triple uplink mode for EN-DC configuration in NR FR1 listed in Table 5.5B.2-1, Table 5.5B.3-1, and Table 5.5B.4.1-1 and indicated by column single uplink allowed, Table 7.3B.2.3.5.1-1, Table 7.3B.2.3.5.2-0, Table 7.3B.2.3.5.2-1 or NE-DC configuration in NR FR1 listed in Table 5.5B.4a.1-1 and indicated by column single uplink allowed if the intermodulation products caused by the dual uplink operation do not interfere with its own primary downlink transmission channel bandwidth of PCell or PSCell. For intermodulation products falling into any secondary downlink channel bandwidth, UE single UL capability is not considered.

Formula for determining if the EN-DC in NR FR1 configuration with dual uplink operation interferes with its own downlink reception.

Interference bandwidth: IBW = |a| \* CBW1 + |b| \* CBW2

- |a| + |b| = 2 (or 3)

- CBW1 and CBW2 are the transmission bandwidth configurations of the UL channels

Center frequency of IBW: fIBW = |a \* f1 + b \* f2|

- f1 and f2 are center frequency of the transmission bandwidth configurations of each UL channel

The range of IMD 2 (or 3): [fIBW – IBW/2, fIBW + IBW/2]

NOTE 1: UE shall be able to apply operations which are configured by RRC reconfiguration and corresponding HARQ timing on the transmission bandwidth.

NOTE 2: For identified difficult band combination, during two adjacent RRC reconfiguration, the changing of transmission bandwidth should not introduce IM2 and IM3, which will result in UE changing from 2Tx to 1Tx. Otherwise, UE behavior is not specified.

For DC\_3A\_n3A intra-band non-contiguous EN-DC combination, only single switched UL is supported in Rel-15.

For DC\_2A\_n2A, DC\_5A\_n5A, DC\_7A\_n7A, DC\_48A\_n48A, DC\_66A\_n66A intra-band non-contiguous EN-DC combination, and DC\_(n)5AA, DC\_(n)12AA, DC\_(n)38AA, DC\_(n)48AA intra-band contiguous EN-DC combination,only single switched UL is supported.

## << End of changes >>