**3GPP TSG-RAN4 Meeting #102-e *R4-2204673***

**Electronic Meeting, Feb 21- Mar 03, 2022**

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| --- |
| *CR-Form-v12.1* |
| **CHANGE REQUEST** |
|  |
|  | **38.101-3** | **CR** | **0686** | **rev** | **-** | **Current version:** | **17.4.0** |  |
|  |
| *For* [***HE******LP***](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:***  | CR introduction completed band combinations for Dual Connectivity (DC) of 5 bands LTE inter-band CA (5DL/1UL) and 1 NR band (1DL/1UL) |
|  |  |
| ***Source to WG:*** | Samsung |
| ***Source to TSG:*** | R4 |
|  |  |
| ***Work item code:*** | DC\_R17\_5BLTE\_1BNR\_6DL2UL-Core |  | ***Date:*** | 2022-03-07 |
|  |  |  |  |  |
| ***Category:*** | **B** |  | ***Release:*** |  |
|  | *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 canbe 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-15 (Release 15)Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)* |
|  |  |
| ***Reason for change:*** | Completed new DC inter-band combinations for Dual Connectivity (DC) of 5 bands LTE inter-band CA (5DL/1UL) and 1 NR band (1DL/1UL) are introduced into TS 38.101-3 in RAN4 #102e meeting. |
|  |  |
| ***Summary of change:*** | The following EN-DC band combinations completed are added from RAN4 #102-e meeting, please note that there are no contributions of RAN4#101-bis-e for 37.717-51-11.R4-2206263 TP for TR 37.717-51-11: DC\_1-3-7-8-32\_n78 R4-2206264 TP for TR 37.717-51-11: DC\_1-3-7-20-32\_n78 R4-2206265 TP for TR 37.717-51-11: DC\_1-3-8-20-28\_n78 R4-2206266 TP for TR 37.717-51-11: DC\_7-8-20-32-38\_n1 R4-2206267 TP for TR 37.717-51-11: DC\_7-20-28-32-38\_n1  |
|  |  |
| ***Consequences if not approved:*** | The requirements for above band combinations are incomplete. |
|  |  |
| ***Clauses affected:*** | 5.5B.4.5, 6.2B.4.2.3.5, 7.3B.3.3.5 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  |  |
| ***affected:*** | **X** |  |  Test specifications | TS 38.521-3  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications |  |
|  |  |
| ***Other comments:*** |  |
|  |  |
| ***This CR's revision history:*** |  |

## <Unchanged sections omitted>

#### 5.5B.4.5 Inter-band EN-DC configurations within FR1 (six bands)

Table 5.5B.4.5-1: Inter-band EN-DC configurations within FR1 (six bands)

|  |  |
| --- | --- |
| **EN-DC****configuration** | **Uplink EN-DC****configuration****(NOTE 1)** |
| DC\_1A-3A-7A-8A\_n28A-n78A | DC\_1A\_n28ADC\_1A\_n78ADC\_3A\_n28ADC\_3A\_n78ADC\_7A\_n28ADC\_7A\_n78ADC\_8A\_n28ADC\_8A\_n78A |
| DC\_1A-3A-7A-8A-32A\_n78A | DC\_1A\_n78ADC\_3A\_n78ADC\_7A\_n78ADC\_8A\_n78A |
| DC\_1A-3A-7A-8A-40A\_n78ADC\_1A-3A-7A-8A-40C\_n78A | DC\_1A\_n78ADC\_3A\_n78ADC\_7A\_n78ADC\_8A\_n78ADC\_40A\_n78A |
| DC\_1A-3A-7A-8A-40A\_n78(2A)DC\_1A-3A-7A-8A-40C\_n78(2A) | DC\_1A\_n78ADC\_3A\_n78ADC\_7A\_n78ADC\_8A\_n78ADC\_40A\_n78A |
| DC\_1A-3A-7A-20A\_n8A-n78A | DC\_1A\_n8ADC\_1A\_n78ADC\_3A\_n8ADC\_3A\_n78ADC\_7A\_n8ADC\_7A\_n78ADC\_20A\_n8ADC\_20A\_n78A |
| DC\_1A-3A-7A-20A\_n28A-n78A2,3 | DC\_1A\_n28ADC\_1A\_n78ADC\_3A\_n28ADC\_3A\_n78ADC\_7A\_n28ADC\_7A\_n78ADC\_20A\_n28ADC\_20A\_n78A |
| DC\_1A-3A-7A-20A-32A\_n78A | DC\_1A\_n78ADC\_3A\_n78ADC\_7A\_n78ADC\_20A\_n78A |
| DC\_1A-3A-7A-20A\_n38A-n78A | DC\_1A\_n78ADC\_3A\_n78ADC\_20A\_n78A |
| DC\_1A-3A-7A-28A\_n3A-n78A | DC\_1A\_n3ADC\_3A\_n3A4DC\_7A\_n3ADC\_28A\_n3ADC\_1A\_n78ADC\_3A\_n78ADC\_7A\_n78ADC\_28A\_n78A |
| DC\_1A-3A-7C-28A\_n3A-n78A | DC\_1A\_n3ADC\_3A\_n3A4DC\_7A\_n3ADC\_7C\_n3ADC\_28A\_n3ADC\_1A\_n78ADC\_3A\_n78ADC\_7A\_n78A DC\_7C\_n78ADC\_28A\_n78A |
| DC\_1A-3A-7A-28A\_n5A-n78ADC\_1A-3A-7C-28A\_n5A-n78ADC\_1A-3C-7A-28A\_n5A-n78ADC\_1A-3C-7C-28A\_n5A-n78A | DC\_1A\_n5ADC\_1A\_n78ADC\_3A\_n5ADC\_3C\_n5ADC\_3A\_n78ADC\_3C\_n78ADC\_7A\_n5ADC\_7C\_n5ADC\_7A\_n78ADC\_7C\_n78ADC\_28A\_n5ADC\_28A\_n78A |
| DC\_1A-3A-7A-28A\_n7A-n78A | DC\_1A\_n7ADC\_3A\_n7ADC\_7A\_n7A4DC\_28A\_n7ADC\_1A\_n78ADC\_3A\_n78ADC\_7A\_n78ADC\_28A\_n78A |
| DC\_1A-3C-7A-28A\_n7A-n78A | DC\_1A\_n7ADC\_3A\_n7ADC\_3C\_n7ADC\_7A\_n7A4DC\_28A\_n7ADC\_1A\_n78ADC\_3A\_n78ADC\_3C\_n78ADC\_7A\_n78ADC\_28A\_n78A |
| DC\_1A-3A-7A-28A\_n40A-n78A | DC\_1A\_n40ADC\_1A\_n78ADC\_3A\_n40ADC\_3A\_n78ADC\_7A\_n40ADC\_7A\_n78ADC\_28A\_n40ADC\_28A\_n78A |
| DC\_1A-3A-8A-11A\_n28A-n77A2 | DC\_1A\_n28ADC\_1A\_n77ADC\_3A\_n28ADC\_3A\_n77ADC\_8A\_n28ADC\_8A\_n77ADC\_11A\_n28ADC\_11A\_n77A |
| DC\_1A-3A-8A-11A\_n28A-n77(2A) 2 | DC\_1A\_n28ADC\_1A\_n77ADC\_3A\_n28ADC\_3A\_n77ADC\_8A\_n28ADC\_8A\_n77ADC\_11A\_n28ADC\_11A\_n77A |
| DC\_1A-3A-8A-20A-28A\_n78A | DC\_1A\_n78ADC\_3A\_n78ADC\_8A\_n78ADC\_20A\_n78ADC\_28A\_n78A |
| DC\_1A-7A-20A-28A-32A\_n3ADC\_1A-7C-20A-28A-32A\_n3A | DC\_1A\_n3ADC\_7A\_n3ADC\_20A\_n3ADC\_28A\_n3A |
| DC\_1A-8A-11A\_n3A-n28A-n77A2 | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77ADC\_11A\_n3ADC\_11A\_n28ADC\_11A\_n77A |
| DC\_1A-8A-11A\_n3A-n28A-n77(2A) 2 | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77ADC\_11A\_n3ADC\_11A\_n28ADC\_11A\_n77A |
| DC\_1A-8A-42A\_n3A-n28A-n77A | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77ADC\_42A\_n3ADC\_42A\_n28A |
| DC\_1A-8A-42A\_n3A-n28A-n77(2A) | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77ADC\_42A\_n3ADC\_42A\_n28A |
| DC\_1A-8A-42C\_n3A-n28A-n77A | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77ADC\_42A\_n3ADC\_42C\_n3ADC\_42A\_n28ADC\_42C\_n28A |
| DC\_1A-8A-42C\_n3A-n28A-n77(2A) | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77ADC\_42A\_n3ADC\_42C\_n3ADC\_42A\_n28ADC\_42C\_n28A |
| DC\_3A-7A-8A-40A\_n1A-n78A | DC\_3A\_n1ADC\_3A\_n78ADC\_7A\_n1ADC\_7A\_n78ADC\_8A\_n1ADC\_8A\_n78ADC\_40A\_n1ADC\_40A\_n78A |
| DC\_3A-7A-8A-40C\_n1A-n78A | DC\_3A\_n1ADC\_3A\_n78ADC\_7A\_n1ADC\_7A\_n78ADC\_8A\_n1ADC\_8A\_n78ADC\_40A\_n1ADC\_40A\_n78A |
| DC\_7A-8A-20A-32A-38A\_n1A | DC\_8A\_n1ADC\_20A\_n1A |
| DC\_7A-20A-28A-32A-38A\_n1A | DC\_20A\_n1ADC\_28A\_n1A |
| 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.NOTE 3: 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 4: Only single switched UL is supported. |

## <Next Change>

###### 6.2B.4.2.3.5 ΔTIB,c for EN-DC six bands

Table 6.2B.4.2.3.5-1: ΔTIB,c due to EN-DC (six bands)

|  |  |  |
| --- | --- | --- |
| **Inter-band EN-DC configuration** | **E-UTRA or NR Band** | **ΔTIB,c (dB)** |
| DC\_1-3-7-8\_n28-n78 | 1 | 0.6 |
|  | 3 | 0.6 |
|  | 7 | 0.6 |
|  | 8 | 0.6 |
|  | n28 | 0.6 |
|  | n78 | 0.8 |
| DC\_1-3-7-8-32\_n78 | 1 | 0.6 |
|  | 3 | 0.6 |
|  | 7 | 0.6 |
|  | 8 | 0.6 |
|  | n78 | 0.8 |
| DC\_1-3-7-8-40\_n78 | 1 | 0.6 |
|  | 3 | 0.6 |
|  | 7 | 0.5 |
|  | 8 | 0.6 |
|  | 40 | 0.31 |
|  | n78 | 0.81 |
| DC\_1-3-7-20\_n8-n78 | 1 | 0.6 |
|  | 3 | 0.6 |
|  | 7 | 0.6 |
|  | 20 | 0.6 |
|  | n8 | 0.6 |
|  | n78 | 0.8 |
| DC\_1-3-7-20\_n28-n78 | 1 | 0.7 |
|  | 3 | 0.7 |
|  | 7 | 0.7 |
|  | 20 | 0.6 |
|  | n28 | 0.6 |
|  | n78 | 0.8 |
| DC\_1-3-7-20-32\_n78 | 1 | 0.7 |
|  | 3 | 0.7 |
|  | 7 | 0.7 |
|  | 20 | 0.4 |
|  | n78 | 0.8 |
| DC\_1-3-7-20\_n38-n78 | 1 | 0.6 |
|  | 3 | 0.6 |
|  | 20 | 0.6 |
|  | n78 | 0.8 |
| DC\_1-3-7-28\_n3-n78 | 1 | 0.7 |
|  | 3 | 0.7 |
|  | 7 | 0.7 |
|  | 28 | 0.6 |
|  | n3 | 0.7 |
|  | n78 | 0.8 |
| DC\_1-3-7-28\_n7-n78 | 1 | 0.7 |
|  | 3 | 0.7 |
|  | 7 | 0.7 |
|  | 28 | 0.6 |
|  | n7 | 0.7 |
|  | n78 | 0.8 |
| DC\_1-3-7-28\_n40-n78 | 1 | 0.6 |
|  | 3 | 0.6 |
|  | 7 | 0.8 |
|  | 28 | 0.3 |
|  | n40 | 0.9 |
|  | n78 | 0.8 |
| DC\_1-3-8-11\_n28-n77 | 1 | 0.6 |
|  | 3 | 0.8 |
|  | 8 | 0.6 |
|  | 11 | 0.9 |
|  | n28 | 0.6 |
|  | n77 | 0.8 |
| DC\_1-3-8-20-28\_n78 | 1 | 0.3 |
|  | 3 | 0.3 |
|  | 8 | 0.6 |
|  | 20 | 0.6 |
|  | 28 | 0.6 |
|  | n78 | 0.8 |
| DC\_1-7-20-28-32\_n3 | 1 | 0.6 |
|  | 7 | 0.6 |
|  | 20 | 0.6 |
|  | 28 | 0.6 |
|  | n3 | 0.6 |
| DC\_1-8-11\_n3-n28-n77 | 1 | 0.6 |
|  | 8 | 0.6 |
|  | 11 | 0.8 |
|  | n3 | 0.9 |
|  | n28 | 0.6 |
| DC\_1-8-42\_n3-n28-n77 | n77 | 0.8 |
|  | 1 | 0.6 |
|  | 8 | 0.6 |
|  | 42 | 0.8 |
|  | n3 | 0.8 |
| DC\_3-7-8-40\_n1-n78 | 3 | 0.6 |
|  | 7 | 0.5 |
|  | 8 | 0.6 |
|  | 40 | 0.32 |
|  | n1 | 0.6 |
|  | n78 | 0.82 |
| DC\_7-8-20-32-38\_n1 | 8 | 0.6 |
|  | 20 | 0.6 |
|  | n1 | 0.7 |
| DC\_7-20-28-32-38\_n1 | 20 | 0.6 |
|  | 28 | 0.6 |
|  | n1 | 0.7 |
| NOTE 1: Only applicable for UE supporting inter-band carrier aggregation with uplink in one NR band and without simultaneous Rx/Tx.NOTE 2: Only applicable for UE supporting inter-band carrier aggregation with uplink in one E-UTRA band and without simultaneous Rx/Tx. |

## <Next Change>

##### 7.3B.3.3.5 ΔRIB,c for EN-DC six bands

Table 7.3B.3.3.5-1: ΔRIB,c due to EN-DC (six bands)

|  |  |  |
| --- | --- | --- |
| **Inter-band EN-DC configuration** | **E-UTRA or NR Band** | **ΔRIB,c (dB)** |
| DC\_1-3-7-8\_n28-n78 | 1 | 0.2 |
|  | 3 | 0.2 |
|  | 7 | 0.2 |
|  | 8 | 0.2 |
|  | n28 | 0.2 |
|  | n78 | 0.5 |
| DC\_1-3-7-8-32\_n78 | 1 | 0.2 |
|  | 3 | 0.2 |
|  | 7 | 0.2 |
|  | 8 | 0.2 |
|  | n78 | 0.5 |
| DC\_1-3-7-8-40\_n78 | 1 | 0.2 |
|  | 3 | 0.2 |
|  | 8 | 0.2 |
|  | 40 | 0.41 |
|  | n78 | 0.51 |
| DC\_1-3-7-20\_n8-n78 | 1 | 0.2 |
|  | 3 | 0.2 |
|  | 7 | 0.2 |
|  | 20 | 0.2 |
|  | n8 | 0.2 |
|  | n78 | 0.5 |
| DC\_1-3-7-20\_n28-n78 | 1 | 0.2 |
|  | 3 | 0.2 |
|  | 7 | 0.2 |
|  | 20 | 0.2 |
|  | n28 | 0.2 |
|  | n78 | 0.5 |
| DC\_1-3-7-20-32\_n78 | 1 | 0.2 |
|  | 7 | 0.2 |
|  | 20 | 0.2 |
|  | n78 | 0.5 |
| DC\_1-3-7-20\_n38-n78 | 1 | 0.2 |
|  | 3 | 0.2 |
|  | 7 | 0.2 |
|  | 20 | 0.2 |
|  | n38 | 0.2 |
|  | n78 | 0.5 |
| DC\_1-3-7-28\_n3-n78 | 1 | 0.2 |
|  | 3 | 0.2 |
|  | 7 | 0.2 |
|  | 28 | 0.2 |
|  | n3 | 0.2 |
|  | n78 | 0.5 |
| DC\_1-3-7-28\_n7-n78 | 1 | 0.2 |
|  | 3 | 0.2 |
|  | 7 | 0.2 |
|  | 28 | 0.2 |
|  | n7 | 0.2 |
|  | n78 | 0.5 |
| DC\_1-3-7-28\_n40-n78 | 7 | 0.3 |
|  | 28 | 0.2 |
|  | n40 | 0.8 |
|  | n78 | 0.5 |
| DC\_1-3-8-11\_n28-n77 | 1 | 0.2 |
|  | 3 | 0.3 |
|  | 8 | 0.2 |
|  | 11 | 0.5 |
|  | n28 | 0.2 |
|  | n77 | 0.5 |
| DC\_1-3-8-20-28\_n78 | 8 | 0.2 |
|  | 20 | 0.2 |
|  | 28 | 0.2 |
|  | n78 | 0.5 |
| DC\_1-7-20-28-32\_n3 | 20 | 0.2 |
| 28 | 0.2 |
| DC\_1-8-11\_n3-n28-n77 | 1 | 0.2 |
| 8 | 0.2 |
| 11 | 0.3 |
| n3 | 0.5 |
| n28 | 0.2 |
| n77 | 0.5 |
| DC\_1-8-42\_n3-n28-n77 | 1 | 0.2 |
| 8 | 0.2 |
| 42 | 0.5 |
| n3 | 0.2 |
| n28 | 0.5 |
| n77 | 0.5 |
| DC\_3-7-8-40\_n1-n78 | n1 | 0.2 |
|  | 3 | 0.2 |
|  | 8 | 0.2 |
|  | 40 | 0.42 |
|  | n78 | 0.52 |
| DC\_7-8-20-32-38\_n1 | 8 | 0.2 |
|  | 20 | 0.2 |
| DC\_7-20-28-32-38\_n1 | 20 | 0.2 |
|  | 28 | 0.2 |
|  | 38 | 0.2 |
| NOTE 1: Only applicable for UE supporting inter-band carrier aggregation with uplink in one NR band and without simultaneous Rx/Tx.NOTE 2: Only applicable for UE supporting inter-band carrier aggregation with uplink in one E-UTRA band and without simultaneous Rx/Tx. |

## <Unchanged sections omitted>