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

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

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *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 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-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\_n28A  DC\_1A\_n78A  DC\_3A\_n28A  DC\_3A\_n78A  DC\_7A\_n28A  DC\_7A\_n78A  DC\_8A\_n28A  DC\_8A\_n78A |
| DC\_1A-3A-7A-8A-32A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_7A\_n78A  DC\_8A\_n78A |
| DC\_1A-3A-7A-8A-40A\_n78A  DC\_1A-3A-7A-8A-40C\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_7A\_n78A  DC\_8A\_n78A  DC\_40A\_n78A |
| DC\_1A-3A-7A-8A-40A\_n78(2A)  DC\_1A-3A-7A-8A-40C\_n78(2A) | DC\_1A\_n78A  DC\_3A\_n78A  DC\_7A\_n78A  DC\_8A\_n78A  DC\_40A\_n78A |
| DC\_1A-3A-7A-20A\_n8A-n78A | DC\_1A\_n8A  DC\_1A\_n78A  DC\_3A\_n8A  DC\_3A\_n78A  DC\_7A\_n8A  DC\_7A\_n78A  DC\_20A\_n8A  DC\_20A\_n78A |
| DC\_1A-3A-7A-20A\_n28A-n78A2,3 | DC\_1A\_n28A  DC\_1A\_n78A  DC\_3A\_n28A  DC\_3A\_n78A  DC\_7A\_n28A  DC\_7A\_n78A  DC\_20A\_n28A  DC\_20A\_n78A |
| DC\_1A-3A-7A-20A-32A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_7A\_n78A  DC\_20A\_n78A |
| DC\_1A-3A-7A-20A\_n38A-n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_20A\_n78A |
| DC\_1A-3A-7A-28A\_n3A-n78A | DC\_1A\_n3A DC\_3A\_n3A4 DC\_7A\_n3A DC\_28A\_n3A DC\_1A\_n78A DC\_3A\_n78A DC\_7A\_n78A DC\_28A\_n78A |
| DC\_1A-3A-7C-28A\_n3A-n78A | DC\_1A\_n3A DC\_3A\_n3A4 DC\_7A\_n3A  DC\_7C\_n3A DC\_28A\_n3A DC\_1A\_n78A DC\_3A\_n78A DC\_7A\_n78A  DC\_7C\_n78A DC\_28A\_n78A |
| DC\_1A-3A-7A-28A\_n5A-n78A  DC\_1A-3A-7C-28A\_n5A-n78A  DC\_1A-3C-7A-28A\_n5A-n78A  DC\_1A-3C-7C-28A\_n5A-n78A | DC\_1A\_n5A  DC\_1A\_n78A  DC\_3A\_n5A  DC\_3C\_n5A  DC\_3A\_n78A  DC\_3C\_n78A  DC\_7A\_n5A  DC\_7C\_n5A  DC\_7A\_n78A  DC\_7C\_n78A  DC\_28A\_n5A  DC\_28A\_n78A |
| DC\_1A-3A-7A-28A\_n7A-n78A | DC\_1A\_n7A  DC\_3A\_n7A  DC\_7A\_n7A4  DC\_28A\_n7A  DC\_1A\_n78A  DC\_3A\_n78A  DC\_7A\_n78A  DC\_28A\_n78A |
| DC\_1A-3C-7A-28A\_n7A-n78A | DC\_1A\_n7A  DC\_3A\_n7A  DC\_3C\_n7A  DC\_7A\_n7A4  DC\_28A\_n7A  DC\_1A\_n78A  DC\_3A\_n78A  DC\_3C\_n78A  DC\_7A\_n78A  DC\_28A\_n78A |
| DC\_1A-3A-7A-28A\_n40A-n78A | DC\_1A\_n40A  DC\_1A\_n78A  DC\_3A\_n40A  DC\_3A\_n78A  DC\_7A\_n40A  DC\_7A\_n78A  DC\_28A\_n40A  DC\_28A\_n78A |
| DC\_1A-3A-8A-11A\_n28A-n77A2 | DC\_1A\_n28A  DC\_1A\_n77A  DC\_3A\_n28A  DC\_3A\_n77A  DC\_8A\_n28A  DC\_8A\_n77A  DC\_11A\_n28A  DC\_11A\_n77A |
| DC\_1A-3A-8A-11A\_n28A-n77(2A) 2 | DC\_1A\_n28A  DC\_1A\_n77A  DC\_3A\_n28A  DC\_3A\_n77A  DC\_8A\_n28A  DC\_8A\_n77A  DC\_11A\_n28A  DC\_11A\_n77A |
| DC\_1A-3A-8A-20A-28A\_n78A | DC\_1A\_n78A  DC\_3A\_n78A  DC\_8A\_n78A  DC\_20A\_n78A  DC\_28A\_n78A |
| DC\_1A-7A-20A-28A-32A\_n3A  DC\_1A-7C-20A-28A-32A\_n3A | DC\_1A\_n3A  DC\_7A\_n3A  DC\_20A\_n3A  DC\_28A\_n3A |
| DC\_1A-8A-11A\_n3A-n28A-n77A2 | DC\_1A\_n3A  DC\_1A\_n28A  DC\_1A\_n77A  DC\_8A\_n3A  DC\_8A\_n28A  DC\_8A\_n77A  DC\_11A\_n3A  DC\_11A\_n28A  DC\_11A\_n77A |
| DC\_1A-8A-11A\_n3A-n28A-n77(2A) 2 | DC\_1A\_n3A  DC\_1A\_n28A  DC\_1A\_n77A  DC\_8A\_n3A  DC\_8A\_n28A  DC\_8A\_n77A  DC\_11A\_n3A  DC\_11A\_n28A  DC\_11A\_n77A |
| DC\_1A-8A-42A\_n3A-n28A-n77A | DC\_1A\_n3A  DC\_1A\_n28A  DC\_1A\_n77A  DC\_8A\_n3A  DC\_8A\_n28A  DC\_8A\_n77A  DC\_42A\_n3A  DC\_42A\_n28A |
| DC\_1A-8A-42A\_n3A-n28A-n77(2A) | DC\_1A\_n3A  DC\_1A\_n28A  DC\_1A\_n77A  DC\_8A\_n3A  DC\_8A\_n28A  DC\_8A\_n77A  DC\_42A\_n3A  DC\_42A\_n28A |
| DC\_1A-8A-42C\_n3A-n28A-n77A | DC\_1A\_n3A  DC\_1A\_n28A  DC\_1A\_n77A  DC\_8A\_n3A  DC\_8A\_n28A  DC\_8A\_n77A  DC\_42A\_n3A  DC\_42C\_n3A  DC\_42A\_n28A  DC\_42C\_n28A |
| DC\_1A-8A-42C\_n3A-n28A-n77(2A) | DC\_1A\_n3A  DC\_1A\_n28A  DC\_1A\_n77A  DC\_8A\_n3A  DC\_8A\_n28A  DC\_8A\_n77A  DC\_42A\_n3A  DC\_42C\_n3A  DC\_42A\_n28A  DC\_42C\_n28A |
| DC\_3A-7A-8A-40A\_n1A-n78A | DC\_3A\_n1A  DC\_3A\_n78A  DC\_7A\_n1A  DC\_7A\_n78A  DC\_8A\_n1A  DC\_8A\_n78A  DC\_40A\_n1A  DC\_40A\_n78A |
| DC\_3A-7A-8A-40C\_n1A-n78A | DC\_3A\_n1A  DC\_3A\_n78A  DC\_7A\_n1A  DC\_7A\_n78A  DC\_8A\_n1A  DC\_8A\_n78A  DC\_40A\_n1A  DC\_40A\_n78A |
| DC\_7A-8A-20A-32A-38A\_n1A | DC\_8A\_n1A  DC\_20A\_n1A |
| DC\_7A-20A-28A-32A-38A\_n1A | DC\_20A\_n1A  DC\_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>