3GPP TR 37.717-11-31 V0.5.0 (2021-08)

Technical Report

3rd Generation Partnership Project;

Technical Specification Group Radio Access Networks;

 Rel-17 Dual Connectivity (DC) of x bands (x=1,2,3) LTE inter-band CA (xDL/1UL) and 3 bands NR inter-band CA (3DL/1UL)

(Release 17)

** 

The present document has been developed within the 3rd Generation Partnership Project (3GPP TM) and may be further elaborated for the purposes of 3GPP.
The present document has not been subject to any approval process by the 3GPPOrganizational Partners and shall not be implemented.
This Report is provided for future development work within 3GPPonly. The Organizational Partners accept no liability for any use of this Specification.
Specifications and Reports for implementation of the 3GPP TM system should be obtained via the 3GPP Organizational Partners' Publications Offices.

Keywords

<keyword[, keyword]>

***3GPP***

Postal address

3GPP support office address

650 Route des Lucioles - Sophia Antipolis

Valbonne - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Internet

http://www.3gpp.org

***Copyright Notification***

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© 2021, 3GPP Organizational Partners (ARIB, ATIS, CCSA, ETSI, TSDSI, TTA, TTC).

All rights reserved.

UMTS™ is a Trade Mark of ETSI registered for the benefit of its members

3GPP™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners
LTE™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners

GSM® and the GSM logo are registered and owned by the GSM Association

# Contents

Contents 3

Foreword 19

1 Scope 20

2 References 20

3 Definitions, symbols and abbreviations 20

3.1 Definitions 20

3.2 Symbols 21

3.3 Abbreviations 21

4 Background 21

4.1 TR Maintenance 21

5 DC band combinations of LTE x bands DL/1UL(x=1,2,3) + NR 3 bands DL/1UL: General Part 21

5.1 General 21

5.2 General treatment of ∆TIB and ∆RIB values 21

6 DC band combinations of LTE 1 band DL/1UL + NR 3 bands DL/1UL: Specific Band Combination Part 21

6.1 DC\_1\_n3-n28-n77 21

6.1.1 Operating bands for DC 22

6.1.2 Inter-band DC Configurations 22

6.1.3 Co-existence studies 22

6.1.4 ∆TIB and ∆RIB values 22

6.1.5 MSD 22

6.2 DC\_8\_n3-n28-n77 23

6.2.1 Operating bands for DC 23

6.2.2 Inter-band DC Configurations 23

6.2.3 Co-existence studies 23

6.2.4 ∆TIB and ∆RIB values 23

6.2.5 MSD 24

6.3 DC\_8A\_n40A-n41A-n79A 24

6.3.1 Operating bands for DC 24

6.3.3 Co-existence studies 24

6.3.4 ∆TIB and ∆RIB values 24

6.3.5 MSD 24

6.4 DC\_3\_n1-n78-n257, DC\_3-3\_n1-n78-n257 25

6.4.1 Operating bands for DC 25

6.4.2 Inter-band DC Configurations 25

6.4.3 Co-existence studies 25

6.4.4 ∆TIB and ∆RIB values 25

6.4.5 MSD 25

6.5 DC\_7\_n1-n78-n257, DC\_7-7\_n1-n78-n257 25

6.5.1 Operating bands for DC 26

6.5.2 Inter-band DC Configurations 26

6.5.3 Co-existence studies 26

6.5.4 ∆TIB and ∆RIB values 26

6.5.5 MSD 26

6.6 DC\_11\_n3-n28-n77 27

6.6.1 Operating bands for DC 27

6.6.2 Inter-band DC Configurations 27

6.6.3 Co-existence studies 27

6.6.4 ∆TIB and ∆RIB values 27

6.6.5 MSD 28

6.7 DC\_42\_n3-n28-n77 28

6.7.1 Operating bands for DC 28

6.7.2 Inter-band DC Configurations 28

6.7.3 Co-existence studies 28

6.7.4 ∆TIB and ∆RIB values 28

6.7.5 MSD 29

6.8 DC\_1A\_n28A-n77A-n79A 29

6.8.1 Operating bands for DC 29

6.8.2 Inter-band DC Configurations 29

6.8.3 Co-existence studies 29

6.8.4 ∆TIB and ∆RIB values 29

6.8.5 MSD 30

6.9 DC\_1A\_n28A-n78A-n79A 30

6.9.1 Operating bands for DC 30

6.9.2 Inter-band DC Configurations 30

6.9.3 Co-existence studies 30

6.9.4 ∆TIB and ∆RIB values 30

6.9.5 MSD 31

6.10 DC\_3A\_n1A-n77A-n79A 31

6.10.1 Operating bands for DC 31

6.10.2 Inter-band DC Configurations 31

6.10.3 Co-existence studies 31

6.10.4 ∆TIB and ∆RIB values 31

6.10.5 MSD 32

6.11 DC\_3A\_n1A-n78A-n79A 32

6.11.1 Operating bands for DC 32

6.11.2 Inter-band DC Configurations 32

6.11.3 Co-existence studies 32

6.11.4 ∆TIB and ∆RIB values 32

6.11.5 MSD 33

6.12 DC\_3A\_n28A-n77A-n79A 33

6.12.1 Operating bands for DC 33

6.12.2 Inter-band DC Configurations 33

6.12.3 Co-existence studies 33

6.12.4 ∆TIB and ∆RIB values 33

6.12.5 MSD 34

6.13 DC\_3A\_n28A-n78A-n79A 34

6.13.1 Operating bands for DC 34

6.13.2 Inter-band DC Configurations 34

6.13.3 Co-existence studies 34

6.13.4 ∆TIB and ∆RIB values 34

6.13.5 MSD 35

6.14 DC\_19A\_n1A-n77A-n79A 35

6.14.1 Operating bands for DC 35

6.14.2 Inter-band DC Configurations 35

6.14.3 Co-existence studies 35

6.14.4 ∆TIB and ∆RIB values 35

6.14.5 MSD 36

6.15 DC\_19A\_n1A-n78A-n79A 36

6.15.1 Operating bands for DC 36

6.15.2 Inter-band DC Configurations 36

6.15.3 Co-existence studies 36

6.15.4 ∆TIB and ∆RIB values 36

6.15.5 MSD 37

6.16 DC\_21A\_n1A-n77A-n79A 37

6.16.1 Operating bands for DC 37

6.16.2 Inter-band DC Configurations 37

6.16.3 Co-existence studies 37

6.16.4 ∆TIB and ∆RIB values 37

6.16.5 MSD 38

6.17 DC\_21A\_n1A-n78A-n79A 38

6.17.1 Operating bands for DC 38

6.17.2 Inter-band DC Configurations 38

6.17.3 Co-existence studies 38

6.17.4 ∆TIB and ∆RIB values 38

6.17.5 MSD 39

6.18 DC\_21A\_n28A-n77A-n79A 39

6.18.1 Operating bands for DC 39

6.18.2 Inter-band DC Configurations 39

6.18.3 Co-existence studies 39

6.18.4 ∆TIB and ∆RIB values 39

6.18.5 MSD 40

6.19 DC\_21A\_n28A-n78A-n79A 40

6.19.1 Operating bands for DC 40

6.19.2 Inter-band DC Configurations 40

6.19.3 Co-existence studies 40

6.19.4 ∆TIB and ∆RIB values 40

6.19.5 MSD 41

6.20 DC\_42A\_n1A-n77A-n79A 41

6.20.1 Operating bands for DC 41

6.20.2 Inter-band DC Configurations 41

6.20.3 Co-existence studies 41

6.20.4 ∆TIB and ∆RIB values 41

6.20.5 MSD 42

6.21 DC\_42A\_n1A-n78A-n79A 42

6.21.1 Operating bands for DC 42

6.21.2 Inter-band DC Configurations 42

6.21.3 Co-existence studies 42

6.21.4 ∆TIB and ∆RIB values 42

6.21.5 MSD 43

6.22 DC\_8A\_n39-n40-n41 43

6.22.1 Operating bands for DC 43

6.22.3 Co-existence studies 43

6.22.4 ∆TIB and ∆RIB values 43

6.22.5 MSD 44

6.23 DC\_8A\_n39-n40-n79 44

6.23.1 Operating bands for DC 44

6.23.3 Co-existence studies 44

6.23.4 ∆TIB and ∆RIB values 44

6.23.5 MSD 45

6.24 DC\_3\_n41-n79-n258 45

6.24.1 Operating bands for DC 45

DC\_3\_n41-n79-n258 45

6.24.3 Co-existence studies 45

6.24.4 ∆TIB and ∆RIB values 45

6.24.5 MSD 45

7 DC band combinations of LTE 2 bands DL/1UL + NR 3 bands DL/1UL: Specific Band Combination Part 46

7.1 DC\_3-7\_n1-n78-n257, DC\_3-3-7\_n1-n78-n257, DC\_3-7-7\_n1-n78-n257, DC\_3-3-7-7\_n1-n78-n257 46

7.1.1 Operating bands for DC 46

7.1.2 Inter-band DC Configurations 46

7.1.3 Co-existence studies 47

7.1.4 ∆TIB and ∆RIB values 47

7.1.5 MSD 47

7.2 DC\_1-8\_n3-n28-n77 47

7.2.1 Operating bands for DC 47

7.2.2 Inter-band DC Configurations 48

7.2.3 Co-existence studies 48

7.2.4 ∆TIB and ∆RIB values 48

7.2.5 MSD 48

7.3 DC\_1-11\_n3-n28-n77 49

7.3.1 Operating bands for DC 49

7.3.2 Inter-band DC Configurations 49

7.3.3 Co-existence studies 49

7.3.4 ∆TIB and ∆RIB values 49

7.3.5 MSD 50

7.4 DC\_1-42\_n3-n28-n77 50

7.4.1 Operating bands for DC 50

7.4.2 Inter-band DC Configurations 51

7.4.3 Co-existence studies 51

7.4.4 ∆TIB and ∆RIB values 51

7.4.5 MSD 52

7.5 DC\_8-11\_n3-n28-n77 52

7.5.1 Operating bands for DC 52

7.5.2 Inter-band DC Configurations 52

7.5.3 Co-existence studies 52

7.5.4 ∆TIB and ∆RIB values 52

7.5.5 MSD 53

7.6 DC\_8-42\_n3-n28-n77 53

7.6.1 Operating bands for DC 53

7.6.2 Inter-band DC Configurations 54

7.6.3 Co-existence studies 54

7.6.4 ∆TIB and ∆RIB values 54

7.6.5 MSD 55

7.7 DC\_1A-3A\_n28A-n77A-n79A 56

7.7.1 Operating bands for DC 56

7.7.2 Inter-band DC Configurations 56

7.7.3 Co-existence studies 56

7.7.4 ∆TIB and ∆RIB values 56

7.7.5 MSD 57

7.8 DC\_1A-3A\_n28A-n78A-n79A 57

7.8.1 Operating bands for DC 57

7.8.2 Inter-band DC Configurations 57

7.8.3 Co-existence studies 57

7.8.4 ∆TIB and ∆RIB values 57

7.8.5 MSD 58

7.9 DC\_1A-21A\_n28A-n77A-n79A 58

7.9.1 Operating bands for DC 58

7.9.2 Inter-band DC Configurations 58

7.9.3 Co-existence studies 58

7.9.4 ∆TIB and ∆RIB values 58

7.9.5 MSD 59

7.10 DC\_1A-21A\_n28A-n78A-n79A 59

7.10.1 Operating bands for DC 59

7.10.2 Inter-band DC Configurations 59

7.10.3 Co-existence studies 59

7.10.4 ∆TIB and ∆RIB values 59

7.10.5 MSD 60

7.11 DC\_3A-21A\_n1A-n77A-n79A 60

7.11.1 Operating bands for DC 60

7.11.2 Inter-band DC Configurations 60

7.11.3 Co-existence studies 60

7.11.4 ∆TIB and ∆RIB values 60

7.11.5 MSD 61

7.12 DC\_3A-21A\_n1A-n78A-n79A 61

7.12.1 Operating bands for DC 61

7.12.2 Inter-band DC Configurations 61

7.12.3 Co-existence studies 61

7.12.4 ∆TIB and ∆RIB values 61

7.12.5 MSD 62

7.13 DC\_3A-21A\_n28A-n77A-n79A 62

7.13.1 Operating bands for DC 62

7.13.2 Inter-band DC Configurations 62

7.13.3 Co-existence studies 62

7.13.4 ∆TIB and ∆RIB values 62

7.13.5 MSD 63

7.14 DC\_3A-21A\_n28A-n78A-n79A 63

7.14.1 Operating bands for DC 63

7.14.2 Inter-band DC Configurations 63

7.14.3 Co-existence studies 63

7.14.4 ∆TIB and ∆RIB values 63

7.14.5 MSD 64

7.15 DC\_19A-42A\_n1A-n77A-n79A 64

7.15.1 Operating bands for DC 64

7.15.2 Inter-band DC Configurations 64

7.15.3 Co-existence studies 64

7.15.4 ∆TIB and ∆RIB values 64

7.15.5 MSD 65

7.16 DC\_19A-42A\_n1A-n78A-n79A 65

7.16.1 Operating bands for DC 65

7.16.2 Inter-band DC Configurations 65

7.16.3 Co-existence studies 65

7.16.4 ∆TIB and ∆RIB values 65

7.16.5 MSD 66

8 DC band combinations of LTE 3 bands DL/1UL + NR 3 bands DL/1UL: Specific Band Combination Part 66

8.1 DC\_1-8-11\_n3-n28-n77 66

8.1.1 Operating bands for DC 66

8.1.2 Inter-band DC Configurations 67

8.1.3 Co-existence studies 67

8.1.4 ∆TIB and ∆RIB values 67

8.1.5 MSD 68

8.2 DC\_1-8-42\_n3-n28-n77 68

8.2.1 Operating bands for DC 68

8.2.2 Inter-band DC Configurations 69

8.2.3 Co-existence studies 69

8.2.4 ∆TIB and ∆RIB values 69

8.2.5 MSD 70

Annex A: Change history 71

# Foreword

This Technical Report has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

In the present document, modal verbs have the following meanings:

**shall** indicates a mandatory requirement to do something

**shall not** indicates an interdiction (prohibition) to do something

The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.

The constructions "must" and "must not" are not used as substitutes for "shall" and "shall not". Their use is avoided insofar as possible, and they are not used in a normative context except in a direct citation from an external, referenced, non-3GPP document, or so as to maintain continuity of style when extending or modifying the provisions of such a referenced document.

**should** indicates a recommendation to do something

**should not** indicates a recommendation not to do something

**may** indicates permission to do something

**need not** indicates permission not to do something

The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

**can** indicates that something is possible

**cannot** indicates that something is impossible

The constructions "can" and "cannot" are not substitutes for "may" and "need not".

**will** indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

**will not** indicates that something is certain or expected not to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

**might** indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

**might not** indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

**is** (or any other verb in the indicative mood) indicates a statement of fact

**is not** (or any other negative verb in the indicative mood) indicates a statement of fact

The constructions "is" and "is not" do not indicate requirements.

# 1 Scope

The present document is a technical report for DC of x bands (x=1,2,3) LTE inter-band CA (xDL/1UL) and 3 bands NR inter-band CA (3DL/1UL) under Rel-17 time frame, including EN-DC and NE-DC. The purpose is to gather the relevant background information and studies in order to address DC of x bands (x=1,2,3) LTE inter-band CA (xDL/1UL) and 3 bands NR inter-band CA (3DL/1UL) in Rel-17 as .

This TR contains a general part and band specific combination part. The actual requirements are added to the corresponding technical specifications.

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non‑specific.

- For a specific reference, subsequent revisions do not apply.

- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TR 30.007: “Guideline on WI/SI for new Operating Bands”

[3] 3GPP TS 38.101-1: “NR; User Equipment (UE) radio transmission and reception; Part 1: Range 1 Standalone”

[4] 3GPP TS 38.101-2: “NR; User Equipment (UE) radio transmission and reception; Part 2: Range 2 Standalone”

[5] 3GPP TS 38.101-3: “NR; User Equipment (UE) radio transmission and reception; Part 3: Range 1 and Range 2 Interworking operation with other radios”

# 3 Definitions, symbols and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in TR 21.905 [1] and the following apply.
A term defined in the present document takes precedence over the definition of the same term, if any, in TR 21.905 [1].

## 3.2 Symbols

For the purposes of the present document, the following symbols apply:

ΔRIB,c Allowed reference sensitivity relaxation due to support for CA or DC operation, for serving cell *c*.

ΔTIB,c Allowed maximum configured output power relaxation due to support for CA or DC operation, for serving cell *c*.

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in TR 21.905 [1] and the following apply.
An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in TR 21.905 [1].

# 4 Background

The present document is a technical report for DC of x bands (x=1,2,3) LTE inter-band CA (xDL/1UL) and 3 bands NR inter-band CA (3DL/1UL) under Rel-17 time frame, including EN-DC and NE-DC.

## 4.1 TR Maintenance

A single company is responsible for introducing all approved TPs in the current TR, i.e. TR editor. However, it is the responsibility of the contact person of each band combination to ensure that the TPs related to the band combination have been implemented.

# 5 DC band combinations of LTE x bands DL/1UL(x=1,2,3) + NR 3 bands DL/1UL: General Part

## 5.1 General

In order to support DC of LTE CA for up to 3 different bands DL with 1 band UL + NR CA for 3 different bands DL with 1 band UL in rel-17, the corresponding fallback modes shall be shall be completed and specified in advance.

Unless otherwise stated, the requirements for EN-DC and NE-DC for the same band combination are the same.

## 5.2 General treatment of ∆TIB and ∆RIB values

For DC of x bands (x=1,2,3) LTE inter-band CA (xDL/1UL) and 3 bands NR inter-band CA (3DL/1UL) band combination, RAN4 should consider to reuse agreed additional insertion losses for all EN-DC band combinations when new RF components are not introduced to support this basket WI. If the new RF components are introduced, then more detail description will be captured in some specific EN-DC band combinations.

#  DC band combinations of LTE 1 band DL/1UL + NR 3 bands DL/1UL: Specific Band Combination Part

## 6.1 DC\_1\_n3-n28-n77

### 6.1.1 Operating bands for DC

Table 6.1.1-1: EN-DC band combination (four bands)

| EN-DC Band | E-UTRA Band | NR CA Band |
| --- | --- | --- |
| DC\_1\_n3-n28-n77 | 1 | CA\_n3-n28-n77 |

### 6.1.2 Inter-band DC Configurations

Table 6.1.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_1A\_n3A-n28A-n77A | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77A |
| DC\_1A\_n3A-n28A-n77(2A) | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77A |

### 6.1.3 Co-existence studies

Co-existence study for DC\_1\_n3-n28-n77 was covered by the studies for the fallback modes of DC\_1\_n3-n28, DC\_1\_n3-n77 and DC\_1\_n28-n77.

No additional MSD requirement needs to be defined for this dual connectivity configuration.

### 6.1.4 ∆TIB and ∆RIB values

For DC\_1\_n3-n28-n77, the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 6.1.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_1\_n3-n28-n77 | 1 | 0.6 |
| n3 | 0.8 |
| n28 | 0.6 |
| n77 | 0.8 |

Table 6.1.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| DC\_1\_n3-n28-n77 | 1 | 0.2 |
| n3 | 0.2 |
| n28 | 0.2 |
| n77 | 0.5 |

### 6.1.5 MSD

As mentioned in 6.1.3, there is no need to specify additional MSD requirement for this UL DC configuration..

## 6.2 DC\_8\_n3-n28-n77

### 6.2.1 Operating bands for DC

Table 6.2.1-1: EN-DC band combination (four bands)

| EN-DC Band | E-UTRA Band | NR CA Band |
| --- | --- | --- |
| DC\_8\_n3-n28-n77 | 8 | CA\_n3-n28-n77 |

### 6.2.2 Inter-band DC Configurations

Table 6.2.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_8A\_n3A-n28A-n77A | DC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77A |
| DC\_8A\_n3A-n28A-n77(2A) | DC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77A |

### 6.2.3 Co-existence studies

Co-existence study for DC\_8\_n3-n28-n77 was covered by the studies for the fallback modes of DC\_8\_n3-n28, DC\_8\_n3-n77 and DC\_8\_n28-n77.

No additional MSD requirement needs to be defined for this dual connectivity configuration.

### 6.2.4 ∆TIB and ∆RIB values

For DC\_8\_n3-n28-n77, the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 6.2.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_8\_n3-n28-n77 | 8 | 0.6 |
| n3 | 0.6 |
| n28 | 0.5 |
| n77 | 0.8 |

Table 6.2.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| DC\_8\_n3-n28-n77 | 8 | 0.2 |
| n3 | 0.2 |
| n28 | 0.2 |
| n77 | 0.5 |

### 6.2.5 MSD

As mentioned in 6.2.3, there is no need to specify additional MSD requirement for this UL DC configuration.

## 6.3 DC\_8A\_n40A-n41A-n79A

### 6.3.1 Operating bands for DC

Table 6.3.1-1: EN-DC band combination (four bands)

| EN-DC Band | E-UTRA Band | NR CA Band |
| --- | --- | --- |
| DC\_8\_n40-n41-n79 | 8 | CA\_n40-n41-n79 |

6.3.2 Inter-band DC Configurations

Table 6.3.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_8A\_n40A-n41A-n79A | DC\_8A\_n40ADC\_8A\_n41ADC\_8A\_n79A |

### 6.3.3 Co-existence studies

For DC\_8A\_n40A-n41A-n79A co-existence studies, the lower order DC\_8A\_n40A-n41A, DC\_8A\_n40A-n79A and DC\_8A\_n41A-n79A can be applied.

### 6.3.4 ∆TIB and ∆RIB values

For DC\_8A\_n40A-n41A-n79A , the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 6.3.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_8\_n40-n41-n79 | 8 | 0.3 |
| n40 | 0.3 |
| n41 | 0.3 |
| n79 | 0 |

Table 6.3.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| DC\_8\_n40-n41-n79 | 8 | 0 |
| n40 | 0 |
| n41 | 0 |
| n79 | 0 |

### 6.3.5 MSD

No additional MSD requirement is needed.

## 6.4 DC\_3\_n1-n78-n257, DC\_3-3\_n1-n78-n257

### 6.4.1 Operating bands for DC

Table 6.4.1-1: EN-DC band combination (four bands)

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_3\_n1-n78-n257DC\_3-3\_n1-n78-n257 | 3CA\_3-3 | CA\_n1-n78-n257 |

### 6.4.2 Inter-band DC Configurations

Table 6.4.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_3A\_n1A-n78A-n257ADC\_3A\_n1A-n78A-n257DDC\_3A\_n1A-n78A-n257EDC\_3A\_n1A-n78A-n257FDC\_3A\_n1A-n78A-n257GDC\_3A\_n1A-n78A-n257HDC\_3A\_n1A-n78A-n257IDC\_3A\_n1A-n78A-n257JDC\_3A\_n1A-n78A-n257KDC\_3A\_n1A-n78A-n257LDC\_3A\_n1A-n78A-n257M | DC\_3A\_n1ADC\_3A\_n78ADC\_3A\_n257A |
| DC\_3A-3A\_n1A-n78A-n257ADC\_3A-3A\_n1A-n78A-n257DDC\_3A-3A\_n1A-n78A-n257EDC\_3A-3A\_n1A-n78A-n257FDC\_3A-3A\_n1A-n78A-n257GDC\_3A-3A\_n1A-n78A-n257HDC\_3A-3A\_n1A-n78A-n257IDC\_3A-3A\_n1A-n78A-n257JDC\_3A-3A\_n1A-n78A-n257KDC\_3A-3A\_n1A-n78A-n257LDC\_3A-3A\_n1A-n78A-n257M | DC\_3A\_n1ADC\_3A\_n78ADC\_3A\_n257A |

### 6.4.3 Co-existence studies

The co-existence studies can be covered by the studies of the constituent combinations mentioned in 37.716-21-21.

### 6.4.4 ∆TIB and ∆RIB values

For DC\_3\_n1-n78-n257, DC\_3-3\_n1-n78-n257, ΔTIB,c and ΔRIB,c values are set to zero for n257, and the values for constituent E-UTRA and FR1 NR bands are same as those for the corresponding inter band EN-DC configurations which are defined in the TS 38.101-3 already.

### 6.4.5 MSD

No additional MSD requirement is needed.

<Next session>

## 6.5 DC\_7\_n1-n78-n257, DC\_7-7\_n1-n78-n257

### 6.5.1 Operating bands for DC

Table 6.5.1-1: EN-DC band combination (four bands)

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_7\_n1-n78-n257DC\_7-7\_n1-n78-n257 | 7CA\_7-7 | CA\_n1-n78-n257 |

### 6.5.2 Inter-band DC Configurations

Table 6.5.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_7A\_n1A-n78A-n257ADC\_7A\_n1A-n78A-n257DDC\_7A\_n1A-n78A-n257EDC\_7A\_n1A-n78A-n257FDC\_7A\_n1A-n78A-n257GDC\_7A\_n1A-n78A-n257HDC\_7A\_n1A-n78A-n257IDC\_7A\_n1A-n78A-n257JDC\_7A\_n1A-n78A-n257KDC\_7A\_n1A-n78A-n257LDC\_7A\_n1A-n78A-n257M | DC\_7A\_n1ADC\_7A\_n78ADC\_7A\_n257A |
| DC\_7A-7A\_n1A-n78A-n257ADC\_7A-7A\_n1A-n78A-n257DDC\_7A-7A\_n1A-n78A-n257EDC\_7A-7A\_n1A-n78A-n257FDC\_7A-7A\_n1A-n78A-n257GDC\_7A-7A\_n1A-n78A-n257HDC\_7A-7A\_n1A-n78A-n257IDC\_7A-7A\_n1A-n78A-n257JDC\_7A-7A\_n1A-n78A-n257KDC\_7A-7A\_n1A-n78A-n257LDC\_7A-7A\_n1A-n78A-n257M | DC\_7A\_n1ADC\_7A\_n78ADC\_7A\_n257A |

### 6.5.3 Co-existence studies

The co-existence studies can be covered by the studies for the constituent combinations mentioned in 37.716-21-21.

### 6.5.4 ∆TIB and ∆RIB values

For DC\_7\_n1-n78-n257, DC\_7-7\_n1-n78-n257, ΔTIB,c and ΔRIB,c values are set to zero for n257, and the values for constituent E-UTRA and FR1 NR bands are same as those for the corresponding inter band EN-DC configurations which are defined in the TS 38.101-3 already.

### 6.5.5 MSD

No additional MSD requirement is needed.

## 6.6 DC\_11\_n3-n28-n77

### 6.6.1 Operating bands for DC

Table 6.6.1-1: EN-DC band combination (four bands)

| EN-DC Band | E-UTRA Band | NR CA Band |
| --- | --- | --- |
| DC\_11\_n3-n28-n77 | 11 | CA\_n3-n28-n77 |

### 6.6.2 Inter-band DC Configurations

Table 6.6.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_11A\_n3A-n28A-n77A | DC\_11A\_n3ADC\_11A\_n28ADC\_11A\_n77A |
| DC\_11A\_n3A-n28A-n77(2A) | DC\_11A\_n3ADC\_11A\_n28ADC\_11A\_n77A |

### 6.6.3 Co-existence studies

Co-existence study for DC\_11\_n3-n28-n77 was covered by the studies for the fallback modes of DC\_11\_n3-n28, DC\_11\_n3-n77 and DC\_11\_n28-n77.

No additional MSD requirement needs to be defined for this dual connectivity configuration.

### 6.6.4 ∆TIB and ∆RIB values

For DC\_11\_n3-n28-n77, the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 6.6.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_11\_n3-n28-n77 | 11 | 0.8 |
| n3 | 0.9 |
| n28 | 0.6 |
| n77 | 0.8 |

Table 6.6.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| DC\_11\_n3-n28-n77 | 11 | 0.3 |
| n3 | 0.5 |
| n28 | 0.2 |
| n77 | 0.5 |

### 6.6.5 MSD

As mentioned in 6.6.3, there is no need to specify additional MSD requirement for this UL DC configuration..

## 6.7 DC\_42\_n3-n28-n77

### 6.7.1 Operating bands for DC

Table 6.7.1-1: EN-DC band combination (four bands)

| EN-DC Band | E-UTRA Band | NR CA Band |
| --- | --- | --- |
| DC\_42\_n3-n28-n77 | 42 | CA\_n3-n28-n77 |

### 6.7.2 Inter-band DC Configurations

Table 6.7.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_42A\_n3A-n28A-n77A | DC\_42A\_n3ADC\_42A\_n28A |
| DC\_42A\_n3A-n28A-n77(2A) | DC\_42A\_n3ADC\_42A\_n28A |
| DC\_42C\_n3A-n28A-n77A | DC\_42A\_n3ADC\_42C\_n3ADC\_42A\_n28ADC\_42C\_n28A |
| DC\_42C\_n3A-n28A-n77(2A) | DC\_42A\_n3ADC\_42C\_n3ADC\_42A\_n28ADC\_42C\_n28A |

### 6.7.3 Co-existence studies

Co-existence study for DC\_42\_n3-n28-n77 was covered by the studies for the fallback modes of DC\_42\_n3-n28, DC\_42\_n3-n77 and DC\_42\_n28-n77.

No additional MSD requirement needs to be defined for this dual connectivity configuration.

### 6.7.4 ∆TIB and ∆RIB values

For DC\_42\_n3-n28-n77, the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 6.7.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_42\_n3-n28-n77 | 42 | 0.8 |
| n3 | 0.6 |
| n28 | 0.8 |
| n77 | 0.8 |

Table 6.7.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| DC\_42\_n3-n28-n77 | 42 | 0.5 |
| n3 | 0.2 |
| n28 | 0.5 |
| n77 | 0.5 |

### 6.7.5 MSD

As mentioned in 6.7.3, there is no need to specify additional MSD requirement for this UL DC configuration..

## 6.8 DC\_1A\_n28A-n77A-n79A

### 6.8.1 Operating bands for DC

Table 6.8.1-1: EN-DC band combination (four bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_1\_n28-n77-n79 | 1 | CA\_n28-n77-n79 |

### 6.8.2 Inter-band DC Configurations

Table 6.8.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_1A\_n28A-n77A-n79A | DC\_1A\_n28ADC\_1A\_n77ADC\_1A\_n79A |

### 6.8.3 Co-existence studies

Co-existence study for DC\_1A\_n28A-n77A-n79A was covered by the studies for the fallback modes of DC\_1A\_n28A-n77A, DC\_1A\_n28A-n79A and DC\_1A\_n77A-n79A.

### 6.8.4 ∆TIB and ∆RIB values

For DC\_1A\_n28A-n77A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 6.8.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_1A\_n28A-n77A-n79A | 1 | 0.6 |
| n28 | 0.6 |
| n77 | 0.8 |
| n79 | 0.5 |

**Table 6.8.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_1\_n28-n77-n79 | 1 | 0.3 |
| n28 | 0.3 |
| n77 | 0.5 |

### 6.8.5 MSD

No additional MSD requirement is needed.

## 6.9 DC\_1A\_n28A-n78A-n79A

### 6.9.1 Operating bands for DC

Table 6.9.1-1: EN-DC band combination (four bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_1\_n28-n78-n79 | 1 | CA\_n28-n78-n79 |

### 6.9.2 Inter-band DC Configurations

Table 6.9.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_1A\_n28A-n78A-n79A | DC\_1A\_n28ADC\_1A\_n78ADC\_1A\_n79A |

### 6.9.3 Co-existence studies

Co-existence study for DC\_1A\_n28A-n78A-n79A was covered by the studies for the fallback modes of DC\_1A\_n28A-n78A, DC\_1A\_n28A-n79A and DC\_1A\_n78A-n79A.

### 6.9.4 ∆TIB and ∆RIB values

For DC\_1A\_n28A-n78A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 6.9.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_1A\_n28A-n78A-n79A | 1 | 0.3 |
| n28 | 0.6 |
| n78 | 0.8 |
| n79 | 0.5 |

**Table 6.9.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_1A\_n28A-n78A-n79A | 1 | 0.3 |
| n28 | 0.3 |
| n78 | 0.5 |
| n79 | 0 |

### 6.9.5 MSD

No additional MSD requirement is needed.

## 6.10 DC\_3A\_n1A-n77A-n79A

### 6.10.1 Operating bands for DC

Table 6.10.1-1: EN-DC band combination (four bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_3\_n1-n77-n79 | 3 | CA\_n1-n77-n79 |

### 6.10.2 Inter-band DC Configurations

Table 6.10.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_3A\_n1A-n77A-n79A | DC\_3A\_n1ADC\_3A\_n77ADC\_3A\_n79A |

### 6.10.3 Co-existence studies

Co-existence study for DC\_3A\_n1A-n77A-n79A was covered by the studies for the fallback modes of DC\_3A\_n1A-n77A, DC\_3A\_n1A-n79A and DC\_3A\_n77A-n79A.

### 6.10.4 ∆TIB and ∆RIB values

For DC\_3A\_n1A-n77A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 6.10.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_3A\_n1A-n77A-n79A | 3 | 0.6 |
| n1 | 0.6 |
| n77 | 0.8 |
| n79 | 0.5 |

**Table 6.10.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_3A\_n1A-n77A-n79A | 3 | 0.2 |
| n1 | 0.2 |
| n77 | 0.5 |
| n79 | 0 |

### 6.10.5 MSD

No additional MSD requirement is needed.

## 6.11 DC\_3A\_n1A-n78A-n79A

### 6.11.1 Operating bands for DC

Table 6.11.1-1: EN-DC band combination (four bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_3\_n1-n78-n79 | 3 | CA\_n1-n78-n79 |

### 6.11.2 Inter-band DC Configurations

Table 6.11.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_3A\_n1A-n78A-n79A | DC\_3A\_n1ADC\_3A\_n78ADC\_3A\_n79A |

### 6.11.3 Co-existence studies

Co-existence study for DC\_3A\_n1A-n78A-n79A was covered by the studies for the fallback modes of DC\_3A\_n1A-n78A, DC\_3A\_n1A-n79A and DC\_3A\_n78A-n79A.

### 6.11.4 ∆TIB and ∆RIB values

For DC\_3A\_n1A-n78A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 6.11.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_3A\_n1A-n78A-n79A | 3 | 0.6 |
| n1 | 0.3 |
| n78 | 0.8 |
| n79 | 0.5 |

**Table 6.11.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_3A\_n1A-n78A-n79A | 3 | 0.2 |
| n1 | 0.2 |
| n78 | 0.5 |
| n79 | 0 |

### 6.11.5 MSD

No additional MSD requirement is needed.

## 6.12 DC\_3A\_n28A-n77A-n79A

### 6.12.1 Operating bands for DC

Table 6.12.1-1: EN-DC band combination (four bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_3\_n28-n77-n79 | 3 | CA\_n28-n77-n79 |

### 6.12.2 Inter-band DC Configurations

Table 6.12.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_3A\_n28A-n77A-n79A | DC\_3A\_n28ADC\_3A\_n77ADC\_3A\_n79A |

### 6.12.3 Co-existence studies

Co-existence study for DC\_3A\_n28A-n77A-n79A was covered by the studies for the fallback modes of DC\_3A\_n28A-n77A, DC\_3A\_n28A-n79A and DC\_3A\_n77A-n79A.

### 6.12.4 ∆TIB and ∆RIB values

For DC\_3A\_n28A-n77A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 6.12.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_3A\_n28A-n77A-n79A | 3 | 0.6 |
| n28 | 0.5 |
| n77 | 0.8 |
| n79 | 0.5 |

**Table 6.12.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_3A\_n28A-n77A-n79A | 3 | 0.2 |
| n28 | 0.2 |
| n77 | 0.5 |
| n79 | 0 |

### 6.12.5 MSD

No additional MSD requirement is needed.

## 6.13 DC\_3A\_n28A-n78A-n79A

### 6.13.1 Operating bands for DC

Table 6.13.1-1: EN-DC band combination (four bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_3\_n28-n78-n79 | 3 | CA\_n28-n78-n79 |

### 6.13.2 Inter-band DC Configurations

Table 6.13.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_3A\_n28A-n78A-n79A | DC\_3A\_n28ADC\_3A\_n78ADC\_3A\_n79A |

### 6.13.3 Co-existence studies

Co-existence study for DC\_3A\_n28A-n78A-n79A was covered by the studies for the fallback modes of DC\_3A\_n28A-n78A, DC\_3A\_n28A-n79A and DC\_3A\_n78A-n79A.

### 6.13.4 ∆TIB and ∆RIB values

For DC\_3A\_n28A-n78A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 6.13.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_3A\_n28A-n78A-n79A | 3 | 0.6 |
| n28 | 0.5 |
| n78 | 0.8 |
| n79 | 0.5 |

**Table 6.13.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_3A\_n28A-n78A-n79A | 3 | 0.2 |
| n28 | 0.2 |
| n78 | 0.5 |
| n79 | 0 |

### 6.13.5 MSD

No additional MSD requirement is needed.

## 6.14 DC\_19A\_n1A-n77A-n79A

### 6.14.1 Operating bands for DC

Table 6.14.1-1: EN-DC band combination (four bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_19\_n1-n77-n79 | 19 | CA\_n1-n77-n79 |

### 6.14.2 Inter-band DC Configurations

Table 6.14.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_19A\_n1A-n77A-n79A | DC\_19A\_n1ADC\_19A\_n77ADC\_19A\_n79A |

### 6.14.3 Co-existence studies

Co-existence study for DC\_19A\_n1A-n77A-n79A was covered by the studies for the fallback modes of DC\_19A\_n1A-n77A, DC\_19A\_n1A-n79A and DC\_19A\_n77A-n79A.

### 6.14.4 ∆TIB and ∆RIB values

For DC\_19A\_n1A-n77A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 6.14.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_19A\_n1A-n77A-n79A | 19 | 0.3 |
| n1 | 0.6 |
| n77 | 0.8 |
| n79 | 0.5 |

**Table 6.14.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_19A\_n1A-n77A-n79A | 19 | 0.3 |
| n1 | 0.3 |
| n77 | 0.5 |
| n79 | 0 |

### 6.14.5 MSD

No additional MSD requirement is needed.

## 6.15 DC\_19A\_n1A-n78A-n79A

### 6.15.1 Operating bands for DC

Table 6.15.1-1: EN-DC band combination (four bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_19\_n1-n78-n79 | 19 | CA\_n1-n78-n79 |

### 6.15.2 Inter-band DC Configurations

Table 6.15.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_19A\_n1A-n78A-n79A | DC\_19A\_n1ADC\_19A\_n78ADC\_19A\_n79A |

### 6.15.3 Co-existence studies

Co-existence study for DC\_19A\_n1A-n78A-n79A was covered by the studies for the fallback modes of DC\_19A\_n1A-n78A, DC\_19A\_n1A-n79A and DC\_19A\_n78A-n79A.

### 6.15.4 ∆TIB and ∆RIB values

For DC\_19A\_n1A-n78A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 6.15.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_19A\_n1A-n78A-n79A | 19 | 0.3 |
| n1 | 0.3 |
| n78 | 0.8 |
| n79 | 0.5 |

**Table 6.15.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_19A\_n1A-n78A-n79A | 19 | 0.3 |
| n1 | 0.3 |
| n78 | 0.5 |
| n79 | 0 |

### 6.15.5 MSD

No additional MSD requirement is needed.

## 6.16 DC\_21A\_n1A-n77A-n79A

### 6.16.1 Operating bands for DC

Table 6.16.1-1: EN-DC band combination (four bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_21\_n1-n77-n79 | 21 | CA\_n1-n77-n79 |

### 6.16.2 Inter-band DC Configurations

Table 6.16.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_21A\_n1A-n77A-n79A | DC\_21A\_n1ADC\_21A\_n77ADC\_21A\_n79A |

### 6.16.3 Co-existence studies

Co-existence study for DC\_21A\_n1A-n77A-n79A was covered by the studies for the fallback modes of DC\_21A\_n1A-n77A, DC\_21A\_n1A-n79A and DC\_21A\_n77A-n79A.

### 6.16.4 ∆TIB and ∆RIB values

For DC\_21A\_n1A-n77A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 6.16.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_21\_n1-n77-n79 | 21 | 0.4 |
| n1 | 0.6 |
| n77 | 0.8 |
| n79 | 0.5 |

**Table 6.16.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_21\_n1-n77-n79 | n1 | 0.2 |
| n77 | 0.5 |

### 6.16.5 MSD

No additional MSD requirement is needed.

### 6.17 DC\_21A\_n1A-n78A-n79A

### 6.17.1 Operating bands for DC

Table 6.17.1-1: EN-DC band combination (four bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_21\_n1-n78-n79 | 21 | CA\_n1-n78-n79 |

### 6.17.2 Inter-band DC Configurations

Table 6.17.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_21A\_n1A-n78A-n79A | DC\_21A\_n1ADC\_21A\_n78ADC\_21A\_n79A |

### 6.17.3 Co-existence studies

Co-existence study for DC\_21A\_n1A-n78A-n79A was covered by the studies for the fallback modes of DC\_21A\_n1A-n78A, DC\_21A\_n1A-n79A and DC\_21A\_n78A-n79A.

### 6.17.4 ∆TIB and ∆RIB values

For DC\_21A\_n1A-n78A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 6.17.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_21A\_n1A-n78A-n79A | 21 | 0.4 |
| n1 | 0.6 |
| n78 | 0.8 |
| n79 | 0.5 |

**Table 6.17.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_21A\_n1A-n78A-n79A | 21 | 0 |
| n1 | 0.2 |
| n78 | 0.5 |
| n79 | 0 |

### 6.17.5 MSD

No additional MSD requirement is needed.

## 6.18 DC\_21A\_n28A-n77A-n79A

### 6.18.1 Operating bands for DC

Table 6.18.1-1: EN-DC band combination (four bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_21\_n28-n77-n79 | 21 | CA\_n28-n77-n79 |

### 6.18.2 Inter-band DC Configurations

Table 6.18.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_21A\_n28A-n77A-n79A | DC\_21A\_n28ADC\_21A\_n77ADC\_21A\_n79A |

### 6.18.3 Co-existence studies

Co-existence study for DC\_21A\_n28A-n77A-n79A was covered by the studies for the fallback modes of DC\_21A\_n28A-n77A, DC\_21A\_n28A-n79A and DC\_21A\_n77A-n79A.

### 6.18.4 ∆TIB and ∆RIB values

For DC\_21A\_n28A-n77A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 6.18.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_21A\_n28A-n77A-n79A | 21 | 0.4 |
| n28 | 0.5 |
| n77 | 0.8 |
| n79 | 0.5 |

**Table 6.18.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_21A\_n28A-n77A-n79A | 21 | 0 |
| n28 | 0.2 |
| n77 | 0.5 |
| n79 | 0 |

### 6.18.5 MSD

No additional MSD requirement is needed.

## 6.19 DC\_21A\_n28A-n78A-n79A

### 6.19.1 Operating bands for DC

Table 6.19.1-1: EN-DC band combination (four bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_21\_n28-n78-n79 | 21 | CA\_n28-n78-n79 |

### 6.19.2 Inter-band DC Configurations

Table 6.19.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_21A\_n28A-n78A-n79A | DC\_21A\_n28ADC\_21A\_n78ADC\_21A\_n79A |

### 6.19.3 Co-existence studies

Co-existence study for DC\_21A\_n28A-n78A-n79A was covered by the studies for the fallback modes of DC\_21A\_n28A-n78A, DC\_21A\_n28A-n79A and DC\_21A\_n78A-n79A.

### 6.19.4 ∆TIB and ∆RIB values

For DC\_21A\_n28A-n78A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 6.19.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_21\_n28-n78-n79 | 21 | 0.4 |
| n28 | 0.5 |
| n78 | 0.8 |

**Table 6.19.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_21\_n28-n78-n79 | 21 | 0 |
| n28 | 0.2 |
| n78 | 0.5 |
| n79 | 0 |

### 6.19.5 MSD

No additional MSD requirement is needed.

## 6.20 DC\_42A\_n1A-n77A-n79A

### 6.20.1 Operating bands for DC

Table 6.20.1-1: EN-DC band combination (four bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_42\_n1-n77-n79 | 42 | CA\_n1-n77-n79 |

### 6.20.2 Inter-band DC Configurations

Since Uplink EN-DC configuration is N/A, the combination is not used alone as described in NOTE X. This is the same NOTE with NOTE 9 specified in Table 5.5B.4.1-1 in TS 38.101-3 v17.0.0.

Table 6.20.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_42A\_n1A-n77A-n79A | N/A |
| NOTE X: The combination is not used alone as fall back mode of other band combinations in which UL in Band 42 is not used. |

### 6.20.3 Co-existence studies

Co-existence study for DC\_42A\_n1A-n77A-n79A was covered by the studies for the fallback modes of DC\_42A\_n1A-n77A, DC\_42A\_n1A-n79A and DC\_42A\_n77A-n79A.

### 6.20.4 ∆TIB and ∆RIB values

For DC\_42A\_n1A-n77A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 6.20.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_42\_n1-n77-n79 | 42 | 0.8 |
| n1 | 0.6 |
| n77 | 0.8 |

**Table 6.20.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_42\_n1-n77-n79 | 42 | 0.5 |
| n1 | 0.2 |
| n77 | 0.5 |

### 6.20.5 MSD

No additional MSD requirement is needed.

## 6.21 DC\_42A\_n1A-n78A-n79A

### 6.21.1 Operating bands for DC

Table 6.21.1-1: EN-DC band combination (four bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_42\_n1-n78-n79 | 42 | CA\_n1-n78-n79 |

### 6.21.2 Inter-band DC Configurations

Since Uplink EN-DC configuration is N/A, the combination is not used alone as described in NOTE X. This is the same NOTE with NOTE 9 specified in Table 5.5B.4.1-1 in TS 38.101-3 v17.0.0.

Table 6.21.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_42A\_n1A-n78A-n79A | N/A |
| NOTE X: The combination is not used alone as fall back mode of other band combinations in which UL in Band 42 is not used. |

### 6.21.3 Co-existence studies

Co-existence study for DC\_42A\_n1A-n78A-n79A was covered by the studies for the fallback modes of DC\_42A\_n1A-n78A, DC\_42A\_n1A-n79A and DC\_42A\_n78A-n79A.

### 6.21.4 ∆TIB and ∆RIB values

For DC\_42A\_n1A-n78A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 6.21.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_42A\_n1A-n78A-n79A | 42 | 0.8 |
| n1 | 0.3 |
| n78 | 0.8 |
| n79 | 0 |

**Table 6.21.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_42A\_n1A-n78A-n79A | 42 | 0.5 |
| n1 | 0.2 |
| n78 | 0.5 |
| n79 | 0 |

### 6.21.5 MSD

No additional MSD requirement is needed.

## 6.22 DC\_8A\_n39-n40-n41

### 6.22.1 Operating bands for DC

Table 6.22.1-1: EN-DC band combination (four bands)

| EN-DC Band | E-UTRA Band | NR CA Band |
| --- | --- | --- |
| DC\_8\_n39-n40-n41 | 8 | CA\_n39-n40-n41 |

6.22.2 Inter-band DC Configurations

Table 6.22.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_8A\_n39A-n40A-n41A | DC\_8A\_n39ADC\_8A\_n40ADC\_8A\_n41A |

### 6.22.3 Co-existence studies

For DC\_8A\_n39A-n40A-n41A co-existence studies, the lower order DC\_8A\_n40A-n41A, DC\_8A\_n39A-n40A and DC\_8A\_n39A-n41A can be applied.

### 6.22.4 ∆TIB and ∆RIB values

For DC\_8A\_n40A-n41A-n79A , the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 6.22.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_8\_n39-n40-n41 | 8 | 0.3 |
| n39 | 0.3 |
| n40 | 0.3 |
| n41 | 0.3 |

Table 6.22.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| DC\_8\_n39-n40-n41 | 8 | 0 |
| n39 | 0 |
| n40 | 0 |
| n41 | 0 |

### 6.22.5 MSD

No additional MSD requirement is needed.

## 6.23 DC\_8A\_n39-n40-n79

### 6.23.1 Operating bands for DC

Table 6.23.1-1: EN-DC band combination (four bands)

| EN-DC Band | E-UTRA Band | NR CA Band |
| --- | --- | --- |
| DC\_8\_n39-n40-n79 | 8 | CA\_n39-n40-n79 |

6.23.2 Inter-band DC Configurations

Table 6.23.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_8A\_n39A-n40A-n79A | DC\_8A\_n39ADC\_8A\_n40ADC\_8A\_n79A |

### 6.23.3 Co-existence studies

For DC\_8A\_n39A-n40A-n79A co-existence studies, the lower order DC\_8A\_n40A-n79A, DC\_8A\_n39A-n40A and DC\_8A\_n39A-n79A can be applied.

### 6.23.4 ∆TIB and ∆RIB values

For DC\_8A\_n40A-n79A-n79A , the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 6.23.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_8\_n39-n40-n79 | 8 | 0.3 |
| n39 | 0.3 |
| n40 | 0.3 |
| n79 | 0.8 |

Table 6.23.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| DC\_8\_n39-n40-n79 | 8 | 0 |
| n39 | 0.3 |
| n40 | 0.3 |
| n79 | 0.5 |

### 6.23.5 MSD

No additional MSD requirement is needed.

## 6.24 DC\_3\_n41-n79-n258

### 6.24.1 Operating bands for DC

Table 6.24.1-1: EN-DC band combination (four bands)

| EN-DC Band | E-UTRA Band | NR CA Band |
| --- | --- | --- |
| DC\_3\_n41-n79-n258 | 3 | CA\_n41-n79-n258 |

6.24.2 Inter-band DC Configurations

Table 6.24.2-1: Inter-band EN-DC configurations (four bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_3A\_n41A-n79A-n258A | DC\_3A\_n41ADC\_3A\_n79ADC\_3A\_n258A |

### 6.24.3 Co-existence studies

For DC\_3A\_n41A-n79A-n258A co-existence studies, the lower order DC\_3A\_n41A-n79A, DC\_3A\_n41A-n258A and DC\_3A\_n79A-n258A can be applied.

### 6.24.4 ∆TIB and ∆RIB values

For DC\_3A\_n41A-n79A-n258A, ΔTIB,c and ΔRIB,c values are set to zero for n258, and the values for constituent E-UTRA and FR1 NR bands are same as those for the corresponding inter band EN-DC configurations which are defined in the TS 38.101-3 already.

### 6.24.5 MSD

No additional MSD requirement is needed.

# 7 DC band combinations of LTE 2 bands DL/1UL + NR 3 bands DL/1UL: Specific Band Combination Part

## 7.1 DC\_3-7\_n1-n78-n257, DC\_3-3-7\_n1-n78-n257, DC\_3-7-7\_n1-n78-n257, DC\_3-3-7-7\_n1-n78-n257

### 7.1.1 Operating bands for DC

Table 7.1.1-1: EN-DC band combination (five bands)

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_3-7\_n1-n78-n257DC\_3-3-7\_n1-n78-n257DC\_3-7-7\_n1-n78-n257DC\_3-3-7-7\_n1-n78-n257 | CA\_3-7CA\_3-3-7CA\_3-7-7CA\_3-3-7-7 | CA\_n1-n78-n257 |

### 7.1.2 Inter-band DC Configurations

Table 7.1.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_3A-7A\_n1A-n78A-n257ADC\_3A-7A\_n1A-n78A-n257DDC\_3A-7A\_n1A-n78A-n257EDC\_3A-7A\_n1A-n78A-n257FDC\_3A-7A\_n1A-n78A-n257GDC\_3A-7A\_n1A-n78A-n257HDC\_3A-7A\_n1A-n78A-n257IDC\_3A-7A\_n1A-n78A-n257JDC\_3A-7A\_n1A-n78A-n257KDC\_3A-7A\_n1A-n78A-n257LDC\_3A-7A\_n1A-n78A-n257M | DC\_3A\_n1ADC\_3A\_n78ADC\_3A\_n257ADC\_7A\_n1ADC\_7A\_n78ADC\_7A\_n257A |
| DC\_3A-3A-7A\_n1A-n78A-n257ADC\_3A-3A-7A\_n1A-n78A-n257DDC\_3A-3A-7A\_n1A-n78A-n257EDC\_3A-3A-7A\_n1A-n78A-n257FDC\_3A-3A-7A\_n1A-n78A-n257GDC\_3A-3A-7A\_n1A-n78A-n257HDC\_3A-3A-7A\_n1A-n78A-n257IDC\_3A-3A-7A\_n1A-n78A-n257JDC\_3A-3A-7A\_n1A-n78A-n257KDC\_3A-3A-7A\_n1A-n78A-n257LDC\_3A-3A-7A\_n1A-n78A-n257M | DC\_3A\_n1ADC\_3A\_n78ADC\_3A\_n257ADC\_7A\_n1ADC\_7A\_n78ADC\_7A\_n257A |
| DC\_3A-7A-7A\_n1A-n78A-n257ADC\_3A-7A-7A\_n1A-n78A-n257DDC\_3A-7A-7A\_n1A-n78A-n257EDC\_3A-7A-7A\_n1A-n78A-n257FDC\_3A-7A-7A\_n1A-n78A-n257GDC\_3A-7A-7A\_n1A-n78A-n257HDC\_3A-7A-7A\_n1A-n78A-n257IDC\_3A-7A-7A\_n1A-n78A-n257JDC\_3A-7A-7A\_n1A-n78A-n257KDC\_3A-7A-7A\_n1A-n78A-n257LDC\_3A-7A-7A\_n1A-n78A-n257M | DC\_3A\_n1ADC\_3A\_n78ADC\_3A\_n257ADC\_7A\_n1ADC\_7A\_n78ADC\_7A\_n257A |
| DC\_3A-3A-7A-7A\_n1A-n78A-n257ADC\_3A-3A-7A-7A\_n1A-n78A-n257DDC\_3A-3A-7A-7A\_n1A-n78A-n257EDC\_3A-3A-7A-7A\_n1A-n78A-n257FDC\_3A-3A-7A-7A\_n1A-n78A-n257GDC\_3A-3A-7A-7A\_n1A-n78A-n257HDC\_3A-3A-7A-7A\_n1A-n78A-n257IDC\_3A-3A-7A-7A\_n1A-n78A-n257JDC\_3A-3A-7A-7A\_n1A-n78A-n257KDC\_3A-3A-7A-7A\_n1A-n78A-n257LDC\_3A-3A-7A-7A\_n1A-n78A-n257M | DC\_3A\_n1ADC\_3A\_n78ADC\_3A\_n257ADC\_7A\_n1ADC\_7A\_n78ADC\_7A\_n257A |

### 7.1.3 Co-existence studies

The co-existence studies can be covered by the studies for the constituent combinations mentioned in 37.716-21-21.

### 7.1.4 ∆TIB and ∆RIB values

For DC\_3-7\_n1-n78-n257, DC\_3-3-7\_n1-n78-n257, DC\_3-7-7\_n1-n78-n257, DC\_3-3-7-7\_n1-n78-n257, ΔTIB,c and ΔRIB,c values are set to zero for n257, and the values for constituent E-UTRA and FR1 NR bands are same as those for the corresponding inter band EN-DC configurations which are defined in the TS 38.101-3 already.

### 7.1.5 MSD

No additional MSD requirement is needed.

## 7.2 DC\_1-8\_n3-n28-n77

### 7.2.1 Operating bands for DC

Table 7.2.1-1: EN-DC band combination (five bands)

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_1-8\_n3-n28-n77 | CA\_1-8 | CA\_n3-n28-n77 |

### 7.2.2 Inter-band DC Configurations

Table 7.2.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_1A-8A\_n3A-n28A-n77A | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77A |
| DC\_1A-8A\_n3A-n28A-n77(2A) | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77A |

### 7.2.3 Co-existence studies

Co-existence studies of this DC LTE inter-band 2DL/1UL + inter-band NR3DL/1UL are already covered by the fallback configurations, DC\_1-8\_n3-n28, DC\_1-8\_n3-n77, DC\_1-8\_n28-n77, DC\_1\_n3\_n28-n77 and DC\_8\_n3-n28-n77. Therefore, there is no additional harmonic and intermodulation impact for the additional band receiver.

### 7.2.4 ∆TIB and ∆RIB values

For DC\_1-8\_n3-n28-n77, the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 7.2.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_1-8\_n3-n28-n77 | 1 | 0.6 |
| 8 | 0.6 |
| n3 | 0.8 |
| n28 | 0.6 |
| n77 | 0.8 |

Table 8.X.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| DC\_1-8\_n3-n28-n77 | 1 | 0.2 |
| 8 | 0.2 |
| n3 | 0.2 |
| n28 | 0.2 |
| n77 | 0.5 |

### 7.2.5 MSD

As mentioned in 7.2.3, there is no need to specify additional MSD requirement for this UL DC configuration.

## 7.3 DC\_1-11\_n3-n28-n77

### 7.3.1 Operating bands for DC

Table 7.3.1-1: EN-DC band combination (five bands)

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_1-11\_n3-n28-n77 | CA\_1-11 | CA\_n3-n28-n77 |

### 7.3.2 Inter-band DC Configurations

Table 7.3.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_1A-11A\_n3A-n28A-n77A | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_11A\_n3ADC\_11A\_n28ADC\_11A\_n77A |
| DC\_1A-11A\_n3A-n28A-n77(2A) | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_11A\_n3ADC\_11A\_n28ADC\_11A\_n77A |

### 7.3.3 Co-existence studies

Co-existence studies of this DC LTE inter-band 2DL/1UL + inter-band NR3DL/1UL are already covered by the fallback configurations, DC\_1-11\_n3-n28, DC\_1-11\_n3-n77, DC\_1-11\_n28-n77, DC\_1\_n3\_n28-n77 and DC\_11\_n3-n28-n77. Therefore, there is no additional harmonic and intermodulation impact for the additional band receiver.

### 7.3.4 ∆TIB and ∆RIB values

For DC\_1-11\_n3-n28-n77, the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 7.3.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_1-11\_n3-n28-n77 | 1 | 0.6 |
| 11 | 0.8 |
| n3 | 0.9 |
| n28 | 0.6 |
| n77 | 0.8 |

Table 8.X.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| DC\_1-11\_n3-n28-n77 | 1 | 0.2 |
| 11 | 0.3 |
| n3 | 0.5 |
| n28 | 0.2 |
| n77 | 0.3 |

### 7.3.5 MSD

As mentioned in 7.3.3, there is no need to specify additional MSD requirement for this UL DC configuration.

## 7.4 DC\_1-42\_n3-n28-n77

### 7.4.1 Operating bands for DC

Table 7.4.1-1: EN-DC band combination (five bands)

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_1-42\_n3-n28-n77 | CA\_1-42 | CA\_n3-n28-n77 |

### 7.4.2 Inter-band DC Configurations

Table 7.4.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_1A-42A\_n3A-n28A-n77A | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_42A\_n3ADC\_42A\_n28A |
| DC\_1A-42A\_n3A-n28A-n77(2A) | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_42A\_n3ADC\_42A\_n28A |
| DC\_1A-42C\_n3A-n28A-n77A | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_42A\_n3ADC\_42C\_n3ADC\_42A\_n28ADC\_42C\_n28A |
| DC\_1A-42C\_n3A-n28A-n77(2A) | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_42A\_n3ADC\_42C\_n3ADC\_42A\_n28ADC\_42C\_n28A |

### 7.4.3 Co-existence studies

Co-existence studies of this DC LTE inter-band 2DL/1UL + inter-band NR3DL/1UL are already covered by the fallback configurations, DC\_1-42\_n3-n28, DC\_1-42\_n3-n77, DC\_1-42\_n28-n77, DC\_1\_n3\_n28-n77 and DC\_42\_n3-n28-n77. Therefore, there is no additional harmonic and intermodulation impact for the additional band receiver.

### 7.4.4 ∆TIB and ∆RIB values

For DC\_1-42\_n3-n28-n77, the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 7.4.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_1-42\_n3-n28-n77 | 1 | 0.6 |
| 42 | 0.8 |
| n3 | 0.8 |
| n28 | 0.8 |
| n77 | 0.8 |

Table 8.X.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| DC\_1-42\_n3-n28-n77 | 1 | 0.2 |
| 42 | 0.5 |
| n3 | 0.2 |
| n28 | 0.5 |
| n77 | 0.5 |

### 7.4.5 MSD

As mentioned in 7.4.3, there is no need to specify additional MSD requirement for this UL DC configuration.

## 7.5 DC\_8-11\_n3-n28-n77

### 7.5.1 Operating bands for DC

Table 7.5.1-1: EN-DC band combination (five bands)

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_8-11\_n3-n28-n77 | CA\_8-11 | CA\_n3-n28-n77 |

### 7.5.2 Inter-band DC Configurations

Table 7.5.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_8A-11A\_n3A-n28A-n77A | DC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77ADC\_11A\_n3ADC\_11A\_n28ADC\_11A\_n77A |
| DC\_8A-11A\_n3A-n28A-n77(2A) | DC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77ADC\_11A\_n3ADC\_11A\_n28ADC\_11A\_n77A |

### 7.5.3 Co-existence studies

Co-existence studies of this DC LTE inter-band 2DL/1UL + inter-band NR3DL/1UL are already covered by the fallback configurations, DC\_8-11\_n3-n28, DC\_8-11\_n3-n77, DC\_8-11\_n28-n77, DC\_8\_n3\_n28-n77 and DC\_11\_n3-n28-n77. Therefore, there is no additional harmonic and intermodulation impact for the additional band receiver.

### 7.5.4 ∆TIB and ∆RIB values

For DC\_8-11\_n3-n28-n77, the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 7.5.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_8-11\_n3-n28-n77 | 8 | 0.6 |
| 11 | 0.8 |
| n3 | 0.9 |
| n28 | 0.6 |
| n77 | 0.8 |

Table 8.X.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| DC\_8-11\_n3-n28-n77 | 8 | 0.2 |
| 11 | 0.3 |
| n3 | 0.5 |
| n28 | 0.2 |
| n77 | 0.5 |

### 7.5.5 MSD

As mentioned in 7.5.3, there is no need to specify additional MSD requirement for this UL DC configuration.

## 7.6 DC\_8-42\_n3-n28-n77

### 7.6.1 Operating bands for DC

Table 7.6.1-1: EN-DC band combination (five bands)

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_8-42\_n3-n28-n77 | CA\_8-42 | CA\_n3-n28-n77 |

### 7.6.2 Inter-band DC Configurations

Table 7.6.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_8A-42A\_n3A-n28A-n77A | DC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77ADC\_42A\_n3ADC\_42A\_n28A |
| DC\_8A-42A\_n3A-n28A-n77(2A) | DC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77ADC\_42A\_n3ADC\_42A\_n28A |
| DC\_8A-42C\_n3A-n28A-n77A | DC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77ADC\_42A\_n3ADC\_42C\_n3ADC\_42A\_n28ADC\_42C\_n28A |
| DC\_8A-42C\_n3A-n28A-n77(2A) | DC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77ADC\_42A\_n3ADC\_42C\_n3ADC\_42A\_n28ADC\_42C\_n28A |

### 7.6.3 Co-existence studies

Co-existence studies of this DC LTE inter-band 2DL/1UL + inter-band NR3DL/1UL are already covered by the fallback configurations, DC\_8-42\_n3-n28, DC\_8-42\_n3-n77, DC\_8-42\_n28-n77, DC\_8\_n3\_n28-n77 and DC\_42\_n3-n28-n77. Therefore, there is no additional harmonic and intermodulation impact for the additional band receiver.

### 7.6.4 ∆TIB and ∆RIB values

For DC\_8-42\_n3-n28-n77, the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 7.6.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_8-42\_n3-n28-n77 | 8 | 0.6 |
| 42 | 0.8 |
| n3 | 0.6 |
| n28 | 0.8 |
| n77 | 0.8 |

Table 8.X.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| DC\_8-42\_n3-n28-n77 | 8 | 0.2 |
| 42 | 0.5 |
| n3 | 0.2 |
| n28 | 0.5 |
| n77 | 0.5 |

### 7.6.5 MSD

As mentioned in 7.6.3, there is no need to specify additional MSD requirement for this UL DC configuration.

## 7.7 DC\_1A-3A\_n28A-n77A-n79A

### 7.7.1 Operating bands for DC

Table 7.7.1-1: EN-DC band combination (five bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_1-3\_n28-n77-n79 | CA\_1-3 | CA\_n28-n77-n79 |

### 7.7.2 Inter-band DC Configurations

Table 7.7.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_1A-3A\_n28A-n77A-n79A | DC\_1A\_n28ADC\_1A\_n77ADC\_1A\_n79ADC\_3A\_n28ADC\_3A\_n77ADC\_3A\_n79A |

### 7.7.3 Co-existence studies

Co-existence study of this DL of LTE 2 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration are already covered by those of DL of LTE 1 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration, and those of the DL of LTE 2 band + NR 2 band and UL of 1 LTE band + 1 NR band DC configuration, respectively. Therefore, additional analysis is not needed.

### 7.7.4 ∆TIB and ∆RIB values

For DC\_1A-3A\_n28A-n77A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 7.7.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_1A-3A\_n28A-n77A-n79A | 1 | 0.6 |
| 3 | 0.6 |
| n28 | 0.6 |
| n77 | 0.8 |
| n79 | 0.5 |

**Table 7.7.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_1A-3A\_n28A-n77A-n79A | 1 | 0.2 |
| 3 | 0.2 |
| n28 | 0.2 |
| n77 | 0.5 |
| n79 | 0 |

### 7.7.5 MSD

No additional MSD requirement is needed.

## 7.8 DC\_1A-3A\_n28A-n78A-n79A

### 7.8.1 Operating bands for DC

Table 7.8.1-1: EN-DC band combination (five bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_1-3\_n28-n78-n79 | CA\_1-3 | CA\_n28-n78-n79 |

### 7.8.2 Inter-band DC Configurations

Table 7.8.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_1A-3A\_n28A-n78A-n79A | DC\_1A\_n28ADC\_1A\_n78ADC\_1A\_n79ADC\_3A\_n28ADC\_3A\_n78ADC\_3A\_n79A |

### 7.8.3 Co-existence studies

Co-existence study of this DL of LTE 2 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration are already covered by those of DL of LTE 1 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration, and those of the DL of LTE 2 band + NR 2 band and UL of 1 LTE band + 1 NR band DC configuration, respectively. Therefore, additional analysis is not needed.

### 7.8.4 ∆TIB and ∆RIB values

For DC\_1A-3A\_n28A-n78A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 7.8.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_1A-3A\_n28A-n78A-n79A | 1 | 0.3 |
| 3 | 0.6 |
| n28 | 0.6 |
| n78 | 0.8 |
| n79 | 0.5 |

**Table 7.8.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_1A-3A\_n28A-n78A-n79A | 1 | 0.2 |
| 3 | 0.2 |
| n28 | 0.2 |
| n78 | 0.5 |
| n79 | 0 |

### 7.8.5 MSD

No additional MSD requirement is needed.

## 7.9 DC\_1A-21A\_n28A-n77A-n79A

### 7.9.1 Operating bands for DC

Table 7.9.1-1: EN-DC band combination (five bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_1-21\_n28-n77-n79 | CA\_1-21 | CA\_n28-n77-n79 |

### 7.9.2 Inter-band DC Configurations

Table 7.9.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_1A-21A\_n28A-n77A-n79A | DC\_1A\_n28ADC\_1A\_n77ADC\_1A\_n79ADC\_21A\_n28ADC\_21A\_n77ADC\_21A\_n79A |

### 7.9.3 Co-existence studies

Co-existence study of this DL of LTE 2 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration are already covered by those of DL of LTE 1 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration, and those of the DL of LTE 2 band + NR 2 band and UL of 1 LTE band + 1 NR band DC configuration, respectively. Therefore, additional analysis is not needed.

### 7.9.4 ∆TIB and ∆RIB values

For DC\_1A-21A\_n28A-n77A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 7.9.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_1A-21A\_n28A-n77A-n79A | 1 | 0.6 |
| 21 | 0.4 |
| n28 | 0.6 |
| n77 | 0.8 |
| n79 | 0.5 |

**Table 7.9.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_1A-21A\_n28A-n77A-n79A | 1 | 0.3 |
| 21 | 0 |
| n28 | 0.3 |
| n77 | 0.5 |
| n79 | 0 |

### 7.9.5 MSD

No additional MSD requirement is needed.

## 7.10 DC\_1A-21A\_n28A-n78A-n79A

### 7.10.1 Operating bands for DC

Table 7.10.1-1: EN-DC band combination (five bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_1-21\_n28-n78-n79 | CA\_1-21 | CA\_n28-n78-n79 |

### 7.10.2 Inter-band DC Configurations

Table 7.10.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_1A-21A\_n28A-n78A-n79A | DC\_1A\_n28ADC\_1A\_n78ADC\_1A\_n79ADC\_21A\_n28ADC\_21A\_n78ADC\_21A\_n79A |

### 7.10.3 Co-existence studies

Co-existence study of this DL of LTE 2 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration are already covered by those of DL of LTE 1 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration, and those of the DL of LTE 2 band + NR 2 band and UL of 1 LTE band + 1 NR band DC configuration, respectively. Therefore, additional analysis is not needed.

### 7.10.4 ∆TIB and ∆RIB values

For DC\_1A-21A\_n28A-n78A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 7.10.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_1A-21A\_n28A-n78A-n79A | 1 | 0.6 |
| 21 | 0.4 |
| n28 | 0.6 |
| n78 | 0.8 |
| n79 | 0.5 |

**Table 7.10.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_1A-21A\_n28A-n78A-n79A | 1 | 0.3 |
| 21 | 0 |
| n28 | 0.3 |
| n78 | 0.5 |
| n79 | 0 |

### 7.10.5 MSD

No additional MSD requirement is needed.

## 7.11 DC\_3A-21A\_n1A-n77A-n79A

### 7.11.1 Operating bands for DC

Table 7.11.1-1: EN-DC band combination (five bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_3-21\_n1-n77-n79 | CA\_3-21 | CA\_n1-n77-n79 |

### 7.11.2 Inter-band DC Configurations

Table 7.11.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_3A-21A\_n1A-n77A-n79A | DC\_3A\_n1ADC\_3A\_n77ADC\_3A\_n79ADC\_21A\_n1ADC\_21A\_n77ADC\_21A\_n79A |

### 7.11.3 Co-existence studies

Co-existence study of this DL of LTE 2 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration are already covered by those of DL of LTE 1 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration, and those of the DL of LTE 2 band + NR 2 band and UL of 1 LTE band + 1 NR band DC configuration, respectively. Therefore, additional analysis is not needed.

### 7.11.4 ∆TIB and ∆RIB values

For DC\_3A-21A\_n1A-n77A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 7.11.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_3A-21A\_n1A-n77A-n79A | 3 | 0.8 |
| 21 | 0.9 |
| n1 | 0.6 |
| n77 | 0.8 |
| n79 | 0.5 |

**Table 7.11.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_3A-21A\_n1A-n77A-n79A | 3 | 0.3 |
| 21 | 0.5 |
| n1 | 0.2 |
| n77 | 0.5 |
| n79 | 0 |

### 7.11.5 MSD

No additional MSD requirement is needed.

## 7.12 DC\_3A-21A\_n1A-n78A-n79A

### 7.12.1 Operating bands for DC

Table 7.12.1-1: EN-DC band combination (five bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_3-21\_n1-n78-n79 | CA\_3-21 | CA\_n1-n78-n79 |

### 7.12.2 Inter-band DC Configurations

Table 7.12.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_3A-21A\_n1A-n78A-n79A | DC\_3A\_n1ADC\_3A\_n78ADC\_3A\_n79ADC\_21A\_n1ADC\_21A\_n78ADC\_21A\_n79A |

### 7.12.3 Co-existence studies

Co-existence study of this DL of LTE 2 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration are already covered by those of DL of LTE 1 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration, and those of the DL of LTE 2 band + NR 2 band and UL of 1 LTE band + 1 NR band DC configuration, respectively. Therefore, additional analysis is not needed.

### 7.12.4 ∆TIB and ∆RIB values

For DC\_3A-21A\_n1A-n78A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 7.12.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_3A-21A\_n1A-n78A-n79A | 3 | 0.8 |
| 21 | 0.9 |
| n1 | 0.6 |
| n78 | 0.8 |
| n79 | 0.5 |

**Table 7.12.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_3A-21A\_n1A-n78A-n79A | 3 | 0.3 |
| 21 | 0.5 |
| n1 | 0.2 |
| n78 | 0.5 |
| n79 | 0 |

### 7.12.5 MSD

No additional MSD requirement is needed.

## 7.13 DC\_3A-21A\_n28A-n77A-n79A

### 7.13.1 Operating bands for DC

Table 7.13.1-1: EN-DC band combination (five bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_3-21\_n28-n77-n79 | CA\_3-21 | CA\_n28-n77-n79 |

### 7.13.2 Inter-band DC Configurations

Table 7.13.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_3A-21A\_n28A-n77A-n79A | DC\_3A\_n28ADC\_3A\_n77ADC\_3A\_n79ADC\_21A\_n28ADC\_21A\_n77ADC\_21A\_n79A |

### 7.13.3 Co-existence studies

Co-existence study of this DL of LTE 2 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration are already covered by those of DL of LTE 1 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration, and those of the DL of LTE 2 band + NR 2 band and UL of 1 LTE band + 1 NR band DC configuration, respectively. Therefore, additional analysis is not needed.

### 7.13.4 ∆TIB and ∆RIB values

For DC\_3A-21A\_n28A-n77A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 7.13.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_3A-21A\_n28A-n77A-n79A | 3 | 0.8 |
| 21 | 0.9 |
| n28 | 0.5 |
| n77 | 0.8 |
| n79 | 0.5 |

**Table 7.13.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_3A-21A\_n28A-n77A-n79A | 3 | 0.3 |
| 21 | 0.5 |
| n28 | 0.2 |
| n77 | 0.5 |
| n79 | 0 |

### 7.13.5 MSD

No additional MSD requirement is needed.

## 7.14 DC\_3A-21A\_n28A-n78A-n79A

### 7.14.1 Operating bands for DC

Table 7.14.1-1: EN-DC band combination (five bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_3-21\_n28-n78-n79 | CA\_3-21 | CA\_n28-n78-n79 |

### 7.14.2 Inter-band DC Configurations

Table 7.14.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_3A-21A\_n28A-n78A-n79A | DC\_3A\_n28ADC\_3A\_n78ADC\_3A\_n79ADC\_21A\_n28ADC\_21A\_n78ADC\_21A\_n79A |

### 7.14.3 Co-existence studies

Co-existence study of this DL of LTE 2 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration are already covered by those of DL of LTE 1 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration, and those of the DL of LTE 2 band + NR 2 band and UL of 1 LTE band + 1 NR band DC configuration, respectively. Therefore, additional analysis is not needed.

### 7.14.4 ∆TIB and ∆RIB values

For DC\_3A-21A\_n28A-n78A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 7.14.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_3A-21A\_n28A-n78A-n79A | 3 | 0.8 |
| 21 | 0.9 |
| n28 | 0.5 |
| n78 | 0.8 |
| n79 | 0.5 |

**Table 7.14.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_3A-21A\_n28A-n78A-n79A | 3 | 0.3 |
| 21 | 0.5 |
| n28 | 0.2 |
| n78 | 0.5 |
| n79 | 0 |

### 7.14.5 MSD

No additional MSD requirement is needed.

## 7.15 DC\_19A-42A\_n1A-n77A-n79A

### 7.15.1 Operating bands for DC

Table 7.15.1-1: EN-DC band combination (five bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_19-42\_n1-n77-n79 | CA\_19-42 | CA\_n1-n77-n79 |

### 7.15.2 Inter-band DC Configurations

Table 7.15.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_19A-42A\_n1A-n77A-n79A | DC\_19A\_n1ADC\_19A\_n77ADC\_19A\_n79A |

### 7.15.3 Co-existence studies

Co-existence study of this DL of LTE 2 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration are already covered by those of DL of LTE 1 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration, and those of the DL of LTE 2 band + NR 2 band and UL of 1 LTE band + 1 NR band DC configuration, respectively. Therefore, additional analysis is not needed.

### 7.15.4 ∆TIB and ∆RIB values

For DC\_19A-42A\_n1A-n77A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 7.15.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_19A-42A\_n1A-n77A-n79A | 19 | 0.3 |
| 42 | 0.8 |
| n1 | 0.6 |
| n77 | 0.8 |
| n79 | 0.5 |

**Table 7.15.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_19A-42A\_n1A-n77A-n79A | 19 | 0.3 |
| 42 | 0.5 |
| n1 | 0.3 |
| n77 | 0.5 |
| n79 | 0 |

### 7.15.5 MSD

No additional MSD requirement is needed.

## 7.16 DC\_19A-42A\_n1A-n78A-n79A

### 7.16.1 Operating bands for DC

Table 7.16.1-1: EN-DC band combination (five bands).

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_19-42\_n1-n78-n79 | CA\_19-42 | CA\_n1-n78-n79 |

### 7.16.2 Inter-band DC Configurations

Table 7.16.2-1: Inter-band EN-DC configurations (five bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_19A-42A\_n1A-n78A-n79A | DC\_19A\_n1ADC\_19A\_n78ADC\_19A\_n79A |

### 7.16.3 Co-existence studies

Co-existence study of this DL of LTE 2 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration are already covered by those of DL of LTE 1 band + NR 3 band and UL of 1 LTE band + 1 NR band DC configuration, and those of the DL of LTE 2 band + NR 2 band and UL of 1 LTE band + 1 NR band DC configuration, respectively. Therefore, additional analysis is not needed.

### 7.16.4 ∆TIB and ∆RIB values

For DC\_19A-42A\_n1A-n78A-n79A, the ∆TIB and ∆RIB values are given in the tables below.

**Table 7.16.4-1: ΔTIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔTIB [dB]** |
| --- | --- | --- |
| DC\_19A-42A\_n1A-n78A-n79A | 19 | 0.3 |
| 42 | 0.8 |
| n1 | 0.3 |
| n78 | 0.8 |
| n79 | 0.5 |

**Table 7.16.4-2: ΔRIB**

| **Inter-band DC Configuration** | **E-UTRA and NR Band** | **ΔRIB [dB]** |
| --- | --- | --- |
| DC\_19A-42A\_n1A-n78A-n79A | 19 | 0.3 |
| 42 | 0.5 |
| n1 | 0.3 |
| n78 | 0.5 |
| n79 | 0 |

### 7.16.5 MSD

No additional MSD requirement is needed.

# 8 DC band combinations of LTE 3 bands DL/1UL + NR 3 bands DL/1UL: Specific Band Combination Part

## 8.1 DC\_1-8-11\_n3-n28-n77

### 8.1.1 Operating bands for DC

Table 8.1.1-1: EN-DC band combination (six bands)

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_1-8-11\_n3-n28-n77 | CA\_1-8-11 | CA\_n3-n28-n77 |

### 8.1.2 Inter-band DC Configurations

Table 8.1.2-1: Inter-band EN-DC configurations (six bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| DC\_1A-8A-11A\_n3A-n28A-n77A | 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) | DC\_1A\_n3ADC\_1A\_n28ADC\_1A\_n77ADC\_8A\_n3ADC\_8A\_n28ADC\_8A\_n77ADC\_11A\_n3ADC\_11A\_n28ADC\_11A\_n77A |

### 8.1.3 Co-existence studies

Co-existence studies of this DC LTE inter-band 3DL/1UL + inter-band NR3DL/1UL are already covered by the fallback configurations, DC\_1-8-11\_n3-n28, DC\_1-8-11\_n3-n77, DC\_1-8-11\_n28-n77, DC\_1-8\_n3-n28-n77, DC\_1-11\_n3\_n28-n77 and DC\_8-11\_n3-n28-n77. Therefore, there is no additional harmonic and intermodulation impact for the additional band receiver.

### 8.1.4 ∆TIB and ∆RIB values

For DC\_1-8-11\_n3-n28-n77, the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 8.1.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_1-8-11\_n3-n28-n77 | 1 | 0.6 |
| 8 | 0.6 |
| 11 | 0.8 |
| n3 | 0.9 |
| n28 | 0.6 |
| n77 | 0.8 |

Table 8.1.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| 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 |

### 8.1.5 MSD

As mentioned in 8.1.3, there is no need to specify additional MSD requirement for this UL DC configuration.

## 8.2 DC\_1-8-42\_n3-n28-n77

### 8.2.1 Operating bands for DC

Table 8.2.1-1: EN-DC band combination (six bands)

| EN-DC Band | E-UTRA CA Band | NR CA Band |
| --- | --- | --- |
| DC\_1-8-42\_n3-n28-n77 | CA\_1-8-42 | CA\_n3-n28-n77 |

### 8.2.2 Inter-band DC Configurations

Table 8.2.2-1: Inter-band EN-DC configurations (six bands)

| EN-DC configuration | Uplink EN-DCconfiguration |
| --- | --- |
| 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 |

### 8.2.3 Co-existence studies

Co-existence studies of this DC LTE inter-band 3DL/1UL + inter-band NR3DL/1UL are already covered by the fallback configurations, DC\_1-8-42\_n3-n28, DC\_1-8-42\_n3-n77, DC\_1-8-42\_n28-n77, DC\_1-8\_n3-n28-n77, DC\_1-42\_n3\_n28-n77 and DC\_8-42\_n3-n28-n77. Therefore, there is no additional harmonic and intermodulation impact for the additional band receiver.

### 8.2.4 ∆TIB and ∆RIB values

For DC\_1-8-42\_n3-n28-n77, the ΔTIB,c and ΔRIB,c values are given in the tables below.

Table 8.2.4-1: ΔTIB,c

| Inter-band DC Configuration | E-UTRA and NR Band | ΔTIB,c [dB] |
| --- | --- | --- |
| DC\_1-8-42\_n3-n28-n77 | 1 | 0.6 |
| 8 | 0.6 |
| 42 | 0.8 |
| n3 | 0.8 |
| n28 | 0.8 |
| n77 | 0.8 |

Table 8.2.4-2: ΔRIB

| Inter-band DC Configuration | E-UTRA and NR Band | ΔRIB [dB] |
| --- | --- | --- |
| 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 |

### 8.2.5 MSD

As mentioned in 8.2.3, there is no need to specify additional MSD requirement for this UL DC configuration.

# Annex A: Change history

|  |
| --- |
| **Change history** |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Subject/Comment** | **Old** | **New**  |
| 2020-08 | RAN4 #96-e | R4-2010661 |  |  | Skeleton  | N/A | 0.0.1 |
| 2020-08 | RAN4 #96-e | R4-2010662 |  |  | Some Editor’s note are corrected  |  | 0.1.0 |
| 2020-11 | RAN4 #97-e | R4-2015067  |  |  | Including the following approved TPs.1. R4-2016765 TP for TR 37.716-11-31: EN-DC\_1\_n3-n28-n77
2. R4-2016766 TP for TR 37.717-11-31: EN-DC\_8\_n3-n28-n77
3. R4-2015050 TP for 37.717-11-31\_ DC\_8A\_n40A-n41A-n79A
4. R4-2015802 TP for TR 37.717-11-31: support of DC\_3\_n1-n78-n257, DC\_3-3\_n1-n78-n257, DC\_7\_n1-n78-n257, DC\_7-7\_n1-n78-n257
5. R4-2015806 TP for TR 37.717-11-31: support of DC\_3-7\_n1-n78-n257, DC\_3-3-7\_n1-n78-n257, DC\_3-7-7\_n1-n78-n257, DC\_3-3-7-7\_n1-n78-n257
 |  | 0.2.0 |
| 2021-02 | RAN4 #98-e | R4-2102232 |  |  | Including the following approved TPs.1. R4-2100669 TP for TR 37.717-11-31: EN-DC\_11\_n3-n28-n77 SoftBank Corp.
2. R4-2100670 TP for TR 37.717-11-31: EN-DC\_42\_n3-n28-n77 SoftBank Corp.
3. R4-2100681 TP for TR 37.717-11-31: EN-DC\_1-8\_n3-n28-n77 SoftBank Corp.
4. R4-2100682 TP for TR 37.717-11-31: EN-DC\_1-11\_n3-n28-n77 SoftBank Corp.
5. R4-2100685 TP for TR 37.717-11-31: EN-DC\_1-42\_n3-n28-n77 SoftBank Corp.
6. R4-2100686 TP for TR 37.717-11-31: EN-DC\_8-11\_n3-n28-n77 SoftBank Corp.
7. R4-2100687 TP for TR 37.717-11-31: EN-DC\_8-42\_n3-n28-n77 SoftBank Corp.
8. R4-2100690 TP for TR 37.717-11-31: EN-DC\_1-8-11\_n3-n28-n77 SoftBank Corp.
9. R4-2100691 TP for TR 37.717-11-31: EN-DC\_1-8-42\_n3-n28-n77 SoftBank Corp.
10. R4-2101019 TP for DC\_1A\_n28A-n77A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
11. R4-2101020 TP for DC\_1A\_n28A-n78A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
12. R4-2101021 TP for DC\_3A\_n1A-n77A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
13. R4-2101022 TP for DC\_3A\_n1A-n78A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
14. R4-2101023 TP for DC\_3A\_n28A-n77A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
15. R4-2101024 TP for DC\_3A\_n28A-n78A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
16. R4-2101025 TP for DC\_19A\_n1A-n77A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
17. R4-2101026 TP for DC\_19A\_n1A-n78A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
18. R4-2101027 TP for DC\_21A\_n1A-n77A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
19. R4-2101028 TP for DC\_21A\_n1A-n78A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
20. R4-2101029 TP for DC\_21A\_n28A-n77A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
21. R4-2101030 TP for DC\_21A\_n28A-n78A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
22. R4-2101031 TP for DC\_1A-3A\_n28A-n77A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
23. R4-2101032 TP for DC\_1A-3A\_n28A-n78A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
24. R4-2101033 TP for DC\_1A-21A\_n28A-n77A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
25. R4-2101034 TP for DC\_1A-21A\_n28A-n78A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
26. R4-2101035 TP for DC\_3A-21A\_n1A-n77A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
27. R4-2101036 TP for DC\_3A-21A\_n1A-n78A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
28. R4-2101037 TP for DC\_3A-21A\_n28A-n77A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
29. R4-2101038 TP for DC\_3A-21A\_n28A-n78A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
30. R4-2101039 TP for DC\_19A-42A\_n1A-n77A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
31. R4-2101040 TP for DC\_19A-42A\_n1A-n78A-n79A for TR37.717-11-31 NTT DOCOMO, INC.
32. R4-2101186 TP for DC\_42A\_n1A-n77A-n79A for TR37.717-11-31 NTT DOCOMO INC.
33. R4-2101187 TP for DC\_42A\_n1A-n78A-n79A for TR37.717-11-31 NTT DOCOMO INC.

R4-2102219 TP for 37.717-11-31\_ DC\_8A\_n39A-n40A-n41A ZTE Corporation |  | 0.3.0 |
| 2021-05 | RAN4 #99-e | R4-2110473 |  |  | Including the following approved TPs.1. R4-2110456 TP for 37.717-11-31\_DC\_8A\_n39A-n40A-n79A,ZTE Corporation
 |  | 0.4.0 |
| 2021-08 | RAN4 #100-e | R4-2112952 |  |  | Including the following approved TPs.1. R4-2112927, TP for 37.717-11-31\_DC\_3A\_n41A-n79A-n258A,ZTE Corporation
 |  | 0.5.0 |