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Technical Specification

3rd Generation Partnership Project;

Technical Specification Group Radio Access Network;

Requirements on User Equipments (UEs) supporting a release-independent frequency band

(Release 16)



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24 Void [7](#__RefHeading___Toc517861541)

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# Foreword

This Technical Specification 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.

# 1 Scope

The present document specifies requirements on UEs supporting a frequency band that is independent of release.

# 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] to [29] Void.

[30] 3GPP TS 25.101: "UE Radio Transmission and Reception (FDD)".

[31] 3GPP TS 25.102: "UE Radio Transmission and Reception (TDD)".

# 3 Definitions and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in [1] apply.

## 3.2 Abbreviations

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

FDD Frequency Division Duplex

RRC Radio Resource Control

UE User Equipment

# 3A General

TSG-RAN has agreed that the standardisation of new frequency bands may be independent of a release. However, in order to implement a UE that conforms to a particular release but supports a band of operation that is specified in a later release, it is necessary to specify some extra requirements.

For example, Band III is contained in the Release 5 specifications. In order to implement a UE conforming to Release '4 but supporting Band III, it is necessary for the UE to additionally conform to some parts of the Release 5 specifications, such as the radio frequency requirements for the Band III and some signalling extensions relating to the UE radio access capabilities.

NOTE: See NOTE in clause 4.4 in [30] or [31].

# 4 Void

# 5 Void

# 6 Void

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# 14 Void

# 15 Void

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# 17 Void

# 18 Void

# 19 Void

# 20 Void

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# 24 Void

# 25 Void

Annex A (normative): Void

Annex B (normative):  
Frequency arrangement for overlapping operating bands

The following information is provided in order to assist a UE to derive the DL UARFCN and UL UARFCN in a multi-band environment, in which multiple overlapping operating bands may be indicated in the IE "Multiple Frequency Band indicator list" (System Information Block type 5, System Information Block type 5bis and System Information Block type 6), or the IE "Multiple Frequency Info List FDD" (System Information Block type 11, System Information Block type 11bis and System Information Block type 12).

The sets of bands (multi-band environment), independent of release, that may be indicated in a cell are shown in Table B-1. Subsets of these may also be indicated. The DL UARFCN and UL UARFCN are derived according to [25.101].

Table B-1: Overlapping bands (multi-band environments) for each UTRA band

|  |  |  |
| --- | --- | --- |
| UTRA Operating Band | Overlapping UTRA operating bands | Duplex Mode |
| 2 | 25 | FDD |
| 3 | 9 | FDD |
| 4 | 10 | FDD |
| 5 | 18, 19, 26 | FDD |
| 9 | 3 | FDD |
| 10 | 4 | FDD |
| 18 | 5, 26 | FDD |
| 19 | 5, 26 | FDD |
| 25 | 2 | FDD |
| 26 | 5, 18, 19 | FDD |

Annex C (informative):  
Change history

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Change history** | | | | | | | |
| **Date** | **TSG #** | **TSG Doc.** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New** |
| 09/2001 | RP-13 | RP-010557 |  |  |  | Approved at TSG-RAN #13 and placed under Change Control | 3.0.0 |
|  | RP-13 | RP-010558 | 001 | 1 |  | Correction to create Release 4 | 4.0.0 |
| 12/2001 | RP-14 | RP-010759 | 003 |  |  | Inclusion of release independent RF related information | 4.1.0 |
| 03/2002 | RP-15 | RP-020096 | 004 |  |  | Creation of Rel-5 specification | 5.0.0 |
| 12/2003 | RP-22 | RP-030630 | 010 |  |  | Introduction of UMTS800 | 6.0.0 |
| 03/2004 | RP-23 | RP-040092 | 016 | 1 |  | Frequency band alignment with 25.101 | 6.1.0 |
|  | RP-23 | RP-040090 | 023 |  |  | Introduction of UMTS1700/2100 (Band IV) | 6.1.0 |
|  | RP-23 | RP-040091 | 027 |  |  | Introduction of UMTS850(Band V) | 6.1.0 |
| 09/2005 | RP-29 | RP-050467 | 0038 |  |  | Introduction of UMTS2600 internal band, Band VII | 6.2.0 |
| 12/2005 | RP-30 | RP-050800 | 0042 |  |  | Introduction of UMTS 900 (Band VIII) | 6.3.0 |
|  | RP-30 | RP-050801 | 0034 |  |  | Introduction of UMTS1700 | 6.3.0 |
| 06/2006 | RP-32 | RP-060369 | 0043 |  |  | Creation of release 7 version | 7.0.0 |
| 12/2006 | RP-34 | RP-060715 | 0057 |  |  | Introduction of Band X (Extended UMTS 1.7/2.1 GHz) in 25.307 | 7.1.0 |
| 09/2007 | RP-37 | RP-070633 | 0066 |  |  | Introduction of Band XI | 8.0.0 |
| 03/2008 | RP-39 | RP-080200 | 0072 | - |  | Introduction of UMTS 700 MHz (Bands XII – XIV) in 25.307 | 8.1.0 |
| 09/2008 | RP-41 | RP-080676 | 0077 | - |  | Introduction of UMTS Band d in 25.307 | 8.2.0 |
| 09/2008 | RP-41 | RP-080695 | 0082 | - |  | Introduction of UMTS Band e in 25.307 | 8.2.0 |
| 03/2009 | RP-43 | RP-090146 | 0087 | - |  | Introduction of UMTS Band f in 25.307 | 8.3.0 |
| 09/2009 | RP-45 | RP-090921 | 0089 | - |  | Introduction of Band XIX | 8.4.0 |
| 09/2009 | RP-45 | RP-090921 | 0088 | 1 |  | Introduction of Band XIX | 9.0.0 |
| 12/2009 | RP-46 | RP-091333 | 0094 | - |  | Editorial corrections for Introduction of Band XIX | 9.1.0 |
|  | RP-46 | RP-091335 | 0100 | 1 |  | Introduction of band XXI - 25.307 | 9.1.0 |
| 03/2010 | RP-47 | RP-100302 | 0106 | - |  | Introduction of band XX (800 MHz) | 9.2.0 |
| 03/2011 | RP-51 | - | - | - |  | Upgrade to Release 10 - no technical change | 10.0.0 |
| 06/2011 | RP-52 | RP-110844 | 0141 | 1 |  | Add Expanded 1900 MHz Band for UTRA and LTE to TS25.307 | 10.1.0 |
| 09/2011 | RP-53 | RP-111294 | 0161 | - |  | Add Band XXII for LTE/UMTS 3500 (FDD) | 10.2.0 |
| 03/2012 | RP-55 | RP-120328 | 0168 | - |  | Add Extending 850 MHz Upper Band (814 - 849 MHz) to TS25.307 | 10.3.0 |
| 06/2012 | RP-56 | RP-120816 | 0170 | - |  | Add Extending 850 MHz Upper Band (814 - 849 MHz) to TS25.307 | 11.0.0 |
| 12/2012 | RP-58 | RP-121922 | 0193 | - |  | Multiple frequency band indicators per cell | 11.1.0 |
| 03/2014 | RP-63 | RP-140336 | 0207 | 1 |  | Introducing 'General' clause with note referring to notes in clause 4.4 in TS25.101 and TS25.102, editorial modifications to Scope clause | 11.2.0 |
| 09/2014 | RP-65 | - | - | - |  | Upgrade to the Release 12 - no technical change | 12.0.0 |
| 12/2015 | RP-70 | - | - | - |  | Upgrade to the Release 13 - no technical change | 13.0.0 |
| 03/2017 | RP-75 | - | - | - |  | Upgrade to Release 14 - no technical change | 14.0.0 |
| 06/2018 | RP-80 | - | - | - |  | Upgrade to Release 15 - no technical change | 15.0.0 |
| 2020-07 | RP-88e | - | - | - | - | Upgrade to Rel-16 version without technical change | 16.0.0 |