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Technical Specification

Universal Mobile Telecommunications System (UMTS); Requirements on User Equipments (UEs) supporting a release- independent frequency band (3GPP TS 25.307 version 7.8.0 Release 7)



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650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

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

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

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Foreword

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Version x.y.z

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 - 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. 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.

All frequency bands are fully specified in this release of the specifications. The present document does not contain any requirements for Ues supporting frequency bands 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 [13] Void.
- [14] 3GPP TS 25.331 (Release 8, version 8): "Radio Resource Control Protocol".
- [15] 3GPP TS 25.101 (Release 8, version 8): "UE Radio Transmission and Reception (FDD)".
- [16] 3GPP TS 25.133 (Release 8, version 8): "Requirements for Support of Radio Resource Management (FDD)".
- [17] Void
- [18] 3GPP TS 25.102 (Release 8, version 8): "UE Radio Transmission and Reception (TDD)".
- [19] 3GPP TS 25.331 (Release 9, version 9): "Radio Resource Control Protocol".
- [20] 3GPP TS 25.101 (Release 9, version 9): "UE Radio Transmission and Reception (FDD)".
- [21] 3GPP TS 25.133 (Release 9, version 9): "Requirements for Support of Radio Resource Management (FDD)".

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

4 Void

5 Void

6 Void

7 Void

8 Void

9 Void

10 Void

11 Void

12 Void

13 Band XI Independent of Release

Band XI is specified in Release 8 but is defined as a release-independent frequency band. This approach aligns the Band XI band with other frequency bands when considering features that have to be supported in different releases.

13.1 Band XI UE

Ues that conform to Release 7 and support band XI shall support the following requirements in Release 8

13.1.1 RF Requirements

The UE shall comply with the RF requirements for band XI specified in [15]. These requirements are:

Section / Clause	Description
5	Frequency bands and channel arrangement
6.2.1	UE maximum output power
6.6	Output RF spectrum emissions
7.3	Reference sensitivity level
7.6	Blocking characteristics
7.8	Intermodulation characteristics
7.9	Spurious emissions
B2.2	Multi-path fading propagation conditions

The UE shall comply with the following Radio Resource Management requirements for band XI specified in [16]. These requirements are:

Section / Clause	Description
9.1	Measurement Performances for UE.

13.1.2 Signalling Requirements

The UE shall support the following RRC extensions specified in [14]:

- The parameter value “Band XI” for the IE “FDD frequency band” contained within the Ies “UE radio access capability extension” and “Measurement capability extension”. The UE shall use this parameter value in order to signal its radio access capabilities relating to band XI.
- The Ies “Frequency band indicator” and “Frequency band indicator2” contained within the Ies “System Information Block type 5” and “System Information Block type 6”. The UE shall use these Ies to determine whether it is compliant with the RF requirement in the indicated frequency band, in case the UE is in the frequency that belongs to multiple frequency bands.

The UE shall be able to at least decode any unrelated RRC extensions that can be included in between the release it supports, and the IE “Frequency band indicator” and “Frequency Band Indicator 2”.

14 Band XII Independent of Release

Band XII is specified in Release 8 but is defined as a release-independent frequency band. This approach aligns the Band XII band with other frequency bands when considering features that have to be supported in different releases.

14.1 Band XII UE

Ues that conform to Release 7 and support Band XII shall support the following requirements in Release 8.

14.1.1 RF Requirements

The UE shall comply with the RF requirements for Band XII specified in [15]. These requirements are:

Section / Clause	Description
5	Frequency bands and channel arrangement
6.2.1	UE maximum output power
6.6	Output RF spectrum emissions
7.3	Reference sensitivity level
7.6	Blocking characteristics
7.8	Intermodulation characteristics
7.9	Spurious emissions
B2.2	Multi-path fading propagation conditions

The UE shall comply with the following Radio Resource Management requirements for Band XII specified in [16]. These requirements are:

Section / Clause	Description
9.1	Measurement Performances for UE.

14.1.2 Signalling Requirements

The UE shall support the following RRC extensions specified in [14]:

- The parameter value “Band XII” for the IE “FDD frequency band” contained within the Ies “UE radio access capability extension” and “Measurement capability extension”. The UE shall use this parameter value in order to signal its radio access capabilities relating to Band XII.
- The Ies “Frequency band indicator” and “Frequency band indicator2” contained within the Ies “System Information Block type 5” and “System Information Block type 6”. The UE shall use these Ies to determine whether it is compliant with the RF requirement in the indicated frequency band, in case the UE is in the frequency that belongs to multiple frequency bands.

The UE shall be able to at least decode any unrelated RRC extensions that can be included in between the release it supports, and the IE “Frequency band indicator” and “Frequency Band Indicator 2”.

15 Band XIII Independent of Release

Band XIII is specified in Release 8 but is defined as a release-independent frequency band. This approach aligns the Band XIII band with other frequency bands when considering features that have to be supported in different releases.

15.1 Band XIII UE

Ues that conform to Release 7 and support Band XIII shall support the following requirements in Release 8.

15.1.1 RF Requirements

The UE shall comply with the RF requirements for Band XIII specified in [15]. These requirements are:

Section / Clause	Description
5	Frequency bands and channel arrangement
6.2.1	UE maximum output power
6.6	Output RF spectrum emissions
7.3	Reference sensitivity level
7.6	Blocking characteristics

7.8	Intermodulation characteristics
7.9	Spurious emissions
B2.2	Multi-path fading propagation conditions

The UE shall comply with the following Radio Resource Management requirements for Band XIII specified in [16]. These requirements are:

Section / Clause	Description
9.1	Measurement Performances for UE.

15.1.2 Signalling Requirements

The UE shall support the following RRC extensions specified in [14]:

- The parameter value “Band XIII” for the IE “FDD frequency band” contained within the Ies “UE radio access capability extension” and “Measurement capability extension”. The UE shall use this parameter value in order to signal its radio access capabilities relating to Band XIII.
- The Ies “Frequency band indicator” and “Frequency band indicator2” contained within the Ies “System Information Block type 5” and “System Information Block type 6”. The UE shall use these Ies to determine whether it is compliant with the RF requirement in the indicated frequency band, in case the UE is in the frequency that belongs to multiple frequency bands.

The UE shall be able to at least decode any unrelated RRC extensions that can be included in between the release it supports, and the IE “Frequency band indicator” and “Frequency Band Indicator 2”.

16 Band XIV Independent of Release

Band XIV is specified in Release 8 but is defined as a release-independent frequency band. This approach aligns the Band XIV band with other frequency bands when considering features that have to be supported in different releases.

16.1 Band XIV UE

Ues that conform to Release 7 and support Band XIV shall support the following requirements in Release 8.

16.1.1 RF Requirements

The UE shall comply with the RF requirements for Band XIV specified in [15]. These requirements are:

Section / Clause	Description
5	Frequency bands and channel arrangement
6.2.1	UE maximum output power
6.6	Output RF spectrum emissions
7.3	Reference sensitivity level
7.6	Blocking characteristics
7.8	Intermodulation characteristics
7.9	Spurious emissions
B2.2	Multi-path fading propagation conditions

The UE shall comply with the following Radio Resource Management requirements for Band XIV specified in [16]. These requirements are:

Section / Clause	Description
9.1	Measurement Performances for UE.

16.1.2 Signalling Requirements

The UE shall support the following RRC extensions specified in [14]:

- The parameter value “Band XIV” for the IE “FDD frequency band” contained within the Ies “UE radio access capability extension” and “Measurement capability extension”. The UE shall use this parameter value in order to signal its radio access capabilities relating to Band XIV.
- The Ies “Frequency band indicator” and “Frequency band indicator2” contained within the Ies “System Information Block type 5” and “System Information Block type 6”. The UE shall use these Ies to determine whether it is compliant with the RF requirement in the indicated frequency band, in case the UE is in the frequency that belongs to multiple frequency bands.

The UE shall be able to at least decode any unrelated RRC extensions that can be included in between the release it supports, and the IE “Frequency band indicator” and “Frequency Band Indicator 2”.

17 Void

18 Band e Independent of Release

Band e is specified in Release 8 but is defined as a release-independent frequency band. This approach aligns the Band e band with other frequency bands when considering features that have to be supported in different releases.

18.1 Band e UE

Ues that conform to Release 7 and support Band e shall support the following requirements in Release 8.

18.1.1 RF Requirements

The UE shall comply with the RF requirements for Band e specified in [18]. These requirements are:

Section / Clause	Description
5	Frequency bands and channel arrangement
6.6.3	Spurious emissions
7.6	Blocking characteristics
7.9	Spurious emissions

18.1.2 Signalling Requirements

The UE shall support the following RRC extensions specified in [14]:

- The parameter value “e” contained within the Ies “RF capability TDD”. The UE shall use this parameter value in order to signal its radio access capabilities relating to Band e.

The UE shall be able to at least decode any unrelated RRC extensions that can be included in between the release it supports.

19 Band f Independent of Release

Band f is specified in Release 8 but is defined as a release-independent frequency band. This approach aligns the Band f band with other frequency bands when considering features that have to be supported in different releases.

19.1 Band f UE

Ues that conform to Release 7 and support Band f shall support the following requirements in Release 8.

19.1.1 RF Requirements

The UE shall comply with the RF requirements for Band f specified in [18]. These requirements are:

Section / Clause	Description
5	Frequency bands and channel arrangement
6.6.3	Spurious emissions
7.6	Blocking characteristics
7.9	Spurious emissions

19.1.2 Signalling Requirements

The UE shall support the following RRC extensions specified in [14]:

- The parameter value “f” contained within the Ies “RF capability TDD”. The UE shall use this parameter value in order to signal its radio access capabilities relating to Band f.

The UE shall be able to at least decode any unrelated RRC extensions that can be included in between the release it supports.

20 Band XIX Independent of Release

Band XIX is specified in Release 9 but is defined as a release-independent frequency band. This approach aligns the Band XIX band with other frequency bands when considering features that have to be supported in different releases.

20.1 Band XIX UE

Ues that conform to Release 7 and support band XIX shall support the following requirements in Release 9

Ues that support band XIX shall also support band VI RF requirements and signalling requirements.

20.1.1 RF Requirements

The UE shall comply with the RF requirements for band XIX specified in [20]. These requirements are:

Section / Clause	Description
5	Frequency bands and channel arrangement
6.2.1	UE maximum output power
6.6	Output RF spectrum emissions
7.3	Reference sensitivity level
7.6	Blocking characteristics
7.8	Intermodulation characteristics
7.9	Spurious emissions
B2.2	Multi-path fading propagation conditions

The UE shall comply with the following Radio Resource Management requirements for band XIX specified in [21]. These requirements are:

Section / Clause	Description
9.1	Measurement Performances for UE.

20.1.2 Signalling Requirements

The UE shall support the following RRC extensions specified in [19]:

- The parameter value “Band XIX” for the IE “FDD frequency band” contained within the Ies “UE radio access capability extension” and “Measurement capability extension”. The UE shall use this parameter value in order to signal its radio access capabilities relating to band XIX.
- The Ies “Frequency band indicator” and “Frequency band indicator2” contained within the Ies “System Information Block type 5” and “System Information Block type 6”. The UE shall use these Ies to determine whether it is compliant with the RF requirement in the indicated frequency band, in case the UE is in the frequency that belongs to multiple frequency bands.

The UE shall be able to at least decode any unrelated RRC extensions that can be included in between the release it supports, and the IE “Frequency band indicator” and “Frequency Band Indicator 2”.

21 Band XXI Independent of Release

Band XXI is specified in Release 9 but is defined as a release-independent frequency band. This approach aligns the Band XXI band with other frequency bands when considering features that have to be supported in different releases.

21.1 Band XXI UE

Ues that conform to Release 7 and support band XXI shall support the following requirements in Release 9.

21.1.1 RF Requirements

The UE shall comply with the RF requirements for band XXI specified in [20]. These requirements are:

Section / Clause	Description
5	Frequency bands and channel arrangement
6.2.1	UE maximum output power
6.6	Output RF spectrum emissions
7.3	Reference sensitivity level
7.6	Blocking characteristics
7.8	Intermodulation characteristics
7.9	Spurious emissions
B2.2	Multi-path fading propagation conditions

The UE shall comply with the following Radio Resource Management requirements for band XXI specified in [21]. These requirements are:

Section / Clause	Description
9.1	Measurement Performances for UE.

21.1.2 Signalling Requirements

The UE shall support the following RRC extensions specified in [19]:

- The parameter value "Band XXI" for the IE "FDD frequency band" contained within the Ies "UE radio access capability extension" and "Measurement capability extension". The UE shall use this parameter value in order to signal its radio access capabilities relating to band XXI.
- The Ies "Frequency band indicator" and "Frequency band indicator2" contained within the Ies "System Information Block type 5" and "System Information Block type 6". The UE shall use these Ies to determine whether it is compliant with the RF requirement in the indicated frequency band, in case the UE is in the frequency that belongs to multiple frequency bands.

The UE shall be able to at least decode any unrelated RRC extensions that can be included in between the release it supports, and the IE "Frequency band indicator" and "Frequency Band Indicator 2".

22 Band XX Independent of Release

Band XX is specified in Release 9 but is defined as a release-independent frequency band. This approach aligns the Band XX band with other frequency bands when considering features that have to be supported in different releases.

22.1 Band XX UE

UEs that conform to Release 7 and support band XX shall support the following requirements in Release 9.

22.1.1 RF Requirements

The UE shall comply with the RF requirements for band XX specified in [20]. These requirements are:

Section / Clause	Description
5	Frequency bands and channel arrangement
6.2.1	UE maximum output power
6.6	Output RF spectrum emissions
7.3	Reference sensitivity level
7.6	Blocking characteristics
7.8	Intermodulation characteristics
7.9	Spurious emissions
B2.2	Multi-path fading propagation conditions

The UE shall comply with the following Radio Resource Management requirements for band XX specified in [21]. These requirements are:

Section / Clause	Description
9.1	Measurement Performances for UE.

22.1.2 Signalling Requirements

The UE shall support the following RRC extensions specified in [19]:

- The parameter value "Band XX" for the IE "FDD frequency band" contained within the IEs "UE radio access capability extension" and "Measurement capability extension". The UE shall use this parameter value in order to signal its radio access capabilities relating to band XX.
- The IEs "Frequency band indicator" and "Frequency band indicator 2" contained within the IEs "System Information Block type 5" and "System Information Block type 6". The UE shall use these IEs to determine whether it is compliant with the RF requirement in the indicated frequency band, in case the UE is in the frequency that belongs to multiple frequency bands.

The UE shall be able to at least decode any unrelated RRC extensions that can be included in between the release it supports, and the IE "Frequency band indicator" and "Frequency Band Indicator 2".

Annex A (informative): Change history

Change history							
Date	TSG #	TSG Doc.	CR	Rev	Subject/Comment	Old	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	3.0.0	4.0.0
12/2001	RP-14	RP-010759	003		Inclusion of release independent RF related information	4.0.0	4.1.0
03/2002	RP-15	RP-020096	004		Creation of Rel-5 specification	4.1.0	5.0.0
12/2003	RP-22	RP-030630	010		Introduction of UMTS800	5.0.0	6.0.0
03/2004	RP-23	RP-040092	016	1	Frequency band alignment with 25.101	6.0.0	6.1.0
	RP-23	RP-040090	023		Introduction of UMTS1700/2100 (Band IV)	6.0.0	6.1.0
	RP-23	RP-040091	027		Introduction of UMTS850(Band V)	6.0.0	6.1.0
09/2005	RP-29	RP-050467	0038		Introduction of UMTS2600 internal band, Band VII	6.1.0	6.2.0
12/2005	RP-30	RP-050800	0042		Introduction of UMTS 900 (Band VIII)	6.2.0	6.3.0
	RP-30	RP-050801	0034		Introduction of UMTS1700	6.2.0	6.3.0
06/2006	RP-32	RP-060369	0043		Creation of release 7 version	6.3.0	7.0.0
12/2006	RP-34	RP-060715	0057		Introduction of Band X (Extended UMTS 1.7/2.1 GHz) in 25.307	7.0.0	7.1.0
09/2007	RP-37	RP-070633	0065		Introduction of Band XI	7.1.0	7.2.0
03/2008	RP-39	RP-080200	0071	-	Introduction of UMTS 700 MHz (Bands XII – XIV) in 25.307	7.2.0	7.3.0
09/2008	RP-41	RP-080676	0076	-	Introduction of UMTS Band d in 25.307	7.3.0	7.4.0
09/2008	RP-41	RP-080695	0081	-	Introduction of UMTS Band e in 25.307	7.3.0	7.4.0
03/2009	RP-43	RP-090146	0086	-	Introduction of UMTS Band f in 25.307	7.4.0	7.5.0
09/2009	RP-45	RP-090921	0090	-	Introduction of Band XIX	7.5.0	7.6.0
12/2009	RP-46	RP-091335	0098	1	Introduction of band XXI – 25.307	7.6.0	7.7.0
02/2010					Version number on the coverpage corrected (7.6.0 -> 7.7.1)	7.7.0	7.7.1
03/2010	RP-47	RP-100302	0104	-	Introduction of band XX (800 MHz)	7.7.1	7.8.0

History

Document history		
V7.0.0	June 2006	Publication
V7.1.0	December 2006	Publication
V7.2.0	October 2007	Publication
V7.3.0	April 2008	Publication
V7.4.0	October 2008	Publication
V7.5.0	April 2009	Publication
V7.6.0	September 2009	Publication
V7.7.1	February 2010	Publication
V7.8.0	April 2010	Publication