

# ETSI TS 136 307 V9.17.0 (2016-08)



**LTE;  
Evolved Universal Terrestrial Radio Access (E-UTRA);  
Requirements on User Equipments (UEs) supporting a release-  
independent frequency band  
(3GPP TS 36.307 version 9.17.0 Release 9)**



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Reference

RTS/TSGR-0436307v9h0

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Keywords

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  - 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.

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# 1 Scope

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

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# 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 TS 36.101 (Release 10): "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) Radio Transmission and Reception".
- [3] 3GPP TS 36.133 (Release 10): "Evolved Universal Terrestrial Radio Access (E-UTRA); Requirements for Support of Radio Resource Management".
- [4] 3GPP TS 36.101 (Release 11): "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) Radio Transmission and Reception".
- [5] 3GPP TS 36.133 (Release 11): "Evolved Universal Terrestrial Radio Access (E-UTRA); Requirements for Support of Radio Resource Management".
- [6] 3GPP TS 36.101 (Release 12): "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) Radio Transmission and Reception".
- [7] 3GPP TS 36.133 (Release 12): "Evolved Universal Terrestrial Radio Access (E-UTRA); Requirements for Support of Radio Resource Management".
- [8] 3GPP TS 36.307 (Release 10): "Evolved Universal Terrestrial Radio Access (E-UTRA); Requirements on User Equipments (UEs) Supporting a release-independent frequency band".
- [9] 3GPP TS 36.307 (Release 11): "Evolved Universal Terrestrial Radio Access (E-UTRA); Requirements on User Equipments (UEs) Supporting a release-independent frequency band".
- [10] 3GPP TS 36.307 (Release 12): "Evolved Universal Terrestrial Radio Access (E-UTRA); Requirements on User Equipments (UEs) Supporting a release-independent frequency band".
- [11] 3GPP TS 36.133 (Release 9): "Evolved Universal Terrestrial Radio Access (E-UTRA); Requirements for Support of Radio Resource Management".
- [12] 3GPP TS 36.101 (Release 9): "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) Radio Transmission and Reception".
- [13] 3GPP TS 36.101 (Release 13): "Evolved Universal Terrestrial Radio Access (E-UTRA); User Equipment (UE) Radio Transmission and Reception".
- [14] 3GPP TS 36.133 (Release 13): "Evolved Universal Terrestrial Radio Access (E-UTRA); Requirements for Support of Radio Resource Management".
- [15] 3GPP TS 36.307 (Release 13): "Evolved Universal Terrestrial Radio Access (E-UTRA); Requirements on User Equipments (UEs) Supporting a release-independent frequency band".

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## 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
TDD	Time Division Duplex
RRC	Radio Resource Control
RRM	Radio Resource Management
UE	User Equipment

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## 3A General

TSG-RAN has agreed that the standardisation of new features listed in Table 3A-1 are independent of a release. UE conforming earlier release than when the feature was introduced into the specifications shall comply with RRM-, demodulation- and RF-requirements as specified in the Annex-B2, Annex-B3 and Annex-B4 of TS 36.307 in the release that the feature was introduced. The applicable UE Categories are specified in TS 36.306 according to the release to which the UE conforms.

**Table 3A-1: E-UTRA operating bands and UE power class**

Feature	Duplex-mode	Release independent from
Operating bands, band number $\leq 64$ , Power Class 3	FDD, TDD	8
Operating bands, band number $> 64$ , Power Class 3	FDD, TDD	9

For example, Band 19 is contained in the Release 9 specifications. In order to implement a UE conforming to Release 8 but supporting Band 19, it is necessary for the UE to additionally conform to some parts of the Release 9 specifications, such as the radio frequency and radio resource management requirements for the Band 19.

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.

NOTE: See NOTE in clause 4.4 in [12].

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## Annex A (informative): Frequency arrangement for overlapping operating bands

The following information is provided in order to assist a UE derive the DL EARFCN and UL EARFCN in a multi-band environment, in which multiple overlapping operating bands may be indicated in the fields *freqBandIndicator* and *multiBandInfoList* of SIB1.

The overlapping bands, independent of release, which may be indicated in a cell are shown in Table A-1 for applicable E-UTRA bands. The DL EARFCN and UL EARFCN are derived according to [4].

**Table A-1: Overlapping bands (multi-band environments) for each E-UTRA band**

E-UTRA Operating Band	Overlapping E-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
12	17	FDD
17	12	FDD
18	5, 26, 27	FDD
19	5, 26	FDD
25	2	FDD
26	5, 18, 19, 27	FDD
27	18, 26	FDD
33	39	TDD
38	41	TDD
39	33	TDD
41	38	TDD

## Annex B (normative): Common Requirements

### B.1 Purpose of annex

The purpose of Annex B is to group the requirements that are common for several bands or CA configurations in this specification and use the common tables as references.

### B.2 Common RRM requirements

#### B.2.1 Common RRM requirements for a band independent of release

The requirements and test cases listed in Table B.2.1-1 are specified in [11].

**Table B.2.1-1: Common RRM requirements for a band independent of release**

Section / Clause	Description
4	E-UTRAN RRC_IDLE state mobility
5	E-UTRAN RRC_CONNECTED state mobility
6 <sup>Note 1</sup>	RRC Connection Mobility Control
7 <sup>Note 2</sup>	Timing and signalling characteristics
8 <sup>Note 3</sup>	UE Measurements Procedures in RRC_CONNECTED State
9 <sup>Note 4</sup>	Measurements performance requirements for UE
A.4	E-UTRAN RRC_IDLE state
A.5	E-UTRAN RRC CONNECTED Mode Mobility
A.6 <sup>Note 1</sup>	RRC Connection Control
A.7 <sup>Note 2</sup>	Timing and Signalling Characteristics
A.8 <sup>Note 3</sup>	UE Measurements Procedures
A.9 <sup>Note 4</sup>	Measurement Performance Requirements
<p>NOTE 1: All requirements and the corresponding test cases shall apply, except:  - for supporting the corresponding band in Rel-8: clauses 6.3 (RRC Connection Release with Redirection), 6.4 (CSG Proximity Indication for E-UTRAN and UTRAN).</p> <p>NOTE 2: All requirements and corresponding test cases shall apply, except those defined in sections 7.4 and 7.5.</p> <p>NOTE 3: All requirements and corresponding test cases shall apply, except:  - for supporting the corresponding band in Rel-8: clauses 8.1.2.5 (E-UTRAN OTDOA Intra-Frequency RSTD Measurements), 8.1.2.6 (E-UTRAN Inter-Frequency OTDOA Measurements), 8.1.2.7 (E-UTRAN E-CID Measurements).</p> <p>NOTE 4: All requirements and corresponding test cases shall apply, except:  - for supporting the corresponding band in Rel-8: clauses 9.1.9 (UE Rx-Tx time difference), 9.1.10 (Reference Signal Time Difference).</p>	

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## B.3 Common UE performance requirements

### B.3.1 Void

**Table B.3.1-1: Void**

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## B.4 Common UE RF requirements

### B.4.1 Common UE RF requirements for a band independent of release

The requirements and test cases listed in Table B.4.1-1 are specified in [12].

**Table B.4.1-1: Common UE RF requirements for a band independent of release**

Section / Clause	Description
5.5	Operating bands
5.6	Channel bandwidth
5.7	Channel arrangement
6.2	Transmit power
6.3	Output power dynamics
6.5	Transmit signal quality
6.6	Output RF spectrum emissions
6.7	Transmit intermodulation
7.3	Reference sensitivity power level
7.4	Maximum input level
7.5	Adjacent Channel Selectivity (ACS)
7.6	Blocking characteristics
7.7	Spurious response
7.8	Intermodulation characteristics
7.9	RX spurious emissions

## Annex C (informative): Change history

**Table C.1: Change History**

Date	Meeting	TDoc	CR	Rev	Cat	Subject/Comment	New version
11-2009	RP#46	RP-091141				TS36.307 V0.1.0 approved by RAN (Originally in R4-095022)	0.1.0
02-2010	R4#54	R4-100419				For release 9 version, replace sections 4 to 6 as "Void" and add a new void section as section 7.	0.2.0
03-2010	RP#47	RP-100162				TS36.307 v1.0.0 for approval	1.0.0
03-2010	RP#47	RP-100162				Approved by RAN	9.0.0
09-2010	RP-49	RP-100927	2			CR LTE_TDD_2600_US spectrum band definition additions to TS 36.307 V900	9.1.0
						Correction of section numbering	9.1.1
12-2010	RP-50	RP-101356	008			Band 42 and 43 parameters for UMTS/LTE 3500 (TDD) for TS 36.307	9.2.0
12-2010	RP-50	RP-101361	005			Introduction of L-band in TS 36.307	9.2.0
06-2011	RP-52	RP-110804	014r3			Add Expanded 1900 MHz Band (Band 25) in 36.307	9.3.0
06-2011	RP-52	RP-110812	021r1			Add 2GHz S-Band (Band 23) in 36.307 (Rel 9)	9.3.0
09-2011	RP-53	RP-111255	024			Add Band 22 for LTE/UMTS 3500 (FDD) to TS 36.307	9.4.0
03-2012	RP-55	RP-120305	027			Introduction of Band 26/XXVI to TS 36.307	9.5.0
2012-06	RP-56	RP-120769	035r1			Correction of references	9.6.0
2012-06	RP-56	RP-120793	047			Introduction of APAC700(FDD) into TS 36.307 Rel-9	9.6.0
2012-06	RP-56	RP-120793	051			Introduction of APAC700(TDD) into TS 36.307 Rel-9	9.6.0
2012-06	RP-56	RP-120791	055			Introduction of e850_LB (Band 27) to TS 36.307	9.6.0
2012-09	RP-57	RP-121295	068r1			Relation between EARFCN for overlapping bands with multiple FBI indication	9.7.0
2013-06	RP-60	RP-130791	133r1			Introduction of Band 30	9.8.0
2013-06	RP-60	RP-130790	140			Introduction of LTE 450 into TS 36.307 R9	9.8.0
2013-06	RP-60	RP-130763	144			Corrections to release independent specifications	9.8.0
09-2013	RP-61	RP-131303	172			Band 31 release independence for UE demodulation performance	9.9.0
12-2013	RP-62	RP-131925	187r1			Correction to release independent specification	9.10.0
12-2013	RP-62	RP-131925	213r1			UE performance requirements in release independent specification for CA	9.10.0
12-2013	RP-62	RP-131924	221			Introducing 'General' clause with note referring to note in clause 4.4 in TS25.101, editorial modifications to Scope clause	9.10.0
03-2014	RP-63	RP-140367	229r1			CR on UE performance requirements in release independent specification	9.11.0
03-2014	RP-63	RP-140367	242r1			Correction to release independent specification	9.11.0
06-2014	RP-64	RP-140910	269			CR on UE performance requirements in release independent specification	9.12.0
09-2014	RP-65	RP-141541	410			CR on UE performance requirement for Band 31 for 36.307 Rel-9	9.13.0
12-2014	RP-66	RP-142142	437			UE RF requirements in the release independent spec	9.14.0
12-2015	RP-70	RP-152171	0586r1			Introduction of Band 65	9.15.0
12-2015	RP-70	RP-152173	0608			Introduction of 1447-1467MHz Band into 36.307	9.15.0
12-2015	RP-70	RP-152172	0624			Introduction of Band 66	9.15.0
03/2016	RP-71	RP-160483	0643		B	Introduction of Band 68	9.16.0
2016/06	RP-72	RP-161138	678	-	F	CR TS 36.307 REL-9	9.17.0

## History

<b>Document history</b>		
V9.0.0	April 2010	Publication
V9.1.1	October 2010	Publication
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V9.3.0	June 2011	Publication
V9.4.0	November 2011	Publication
V9.5.0	April 2012	Publication
V9.6.0	July 2012	Publication
V9.7.0	November 2012	Publication
V9.8.0	July 2013	Publication
V9.9.0	October 2013	Publication
V9.10.0	January 2014	Publication
V9.11.0	April 2014	Publication
V9.12.0	July 2014	Publication
V9.13.0	October 2014	Publication
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