

ETSI TR 103 265 V1.1.2 (2014-03)



Electromagnetic compatibility and Radio spectrum Matters (ERM); Definition of radio parameters

Document Preview

[ETSI TR 103 265 V1.1.2 \(2014-03\)](https://standards.iteh.ai/catalog/standards/etsi/997cad13-6d53-458a-9442-b13509bee0f8/etsi-tr-103-265-v1-1-2-2014-03)

<https://standards.iteh.ai/catalog/standards/etsi/997cad13-6d53-458a-9442-b13509bee0f8/etsi-tr-103-265-v1-1-2-2014-03>



Reference

RTR/ERM-RM-265a

Keywords

radio, testing

ETSI

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

Document Preview
(<https://standards.iteh.ai>)

Important notice

The present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status. Information on the current status of this and other ETSI documents is available at

<http://portal.etsi.org/tb/status/status.asp>

If you find errors in the present document, please send your comment to one of the following services:

http://portal.etsi.org/chaicor/ETSI_support.asp

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2014.

All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members. **3GPP™** and **LTE™** are Trade Marks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **GSM®** and the GSM logo are Trade Marks registered and owned by the GSM Association.

Contents

Intellectual Property Rights	6
Foreword.....	6
Introduction	6
1 Scope	7
2 References	7
2.1 Normative references	7
2.2 Informative references	7
3 Definitions and abbreviations.....	12
3.1 Definitions	12
3.2 Abbreviations	13
4 Presentation of the methodology used in the present document	13
4.1 TEDDI operation and its implications.....	14
4.2 The program(s) - Matlab scripts	14
5 Phase 0 manual search and comparison of definitions.....	15
5.1 Example of sets of definitions discussed during phase 0 of the work on this deliverable	15
5.1.1 Adjacent Channel Rejection Ratio (ACRR)	15
5.1.2 Adjacent channel selectivity	16
5.1.3 Adjacent channel selectivity and desensitization	18
5.1.4 Alternate channel selectivity and desensitization	19
5.1.5 Adjacent signal selectivity	19
5.1.6 AM suppression	19
5.1.7 Blocking.....	19
5.1.8 Radio receiver blocking case 1: owing to signals occurring at the same time but on other frequencies.....	22
5.1.9 Radio receiver blocking case 2: owing to signals occurring at a different time.....	22
5.1.10 Blocking and spurious response rejection.....	22
5.2 Conclusions	23
Annex A: Definitions of parameters found by hand	24
A.1 Parameter 1.....	24
A.2 Parameter 2.....	24
A.3 Parameter 3.....	24
A.4 Parameter 4.....	24
A.5 Parameter 5.....	24
A.6 Parameter 6.....	24
A.7 Co-channel rejection.....	25
A.7.1 Co-channel rejection.....	25
A.7.2 Co-channel rejection - TCH/FS.....	25
A.8 DAA threshold	26
A.9 Receiver desensitization with simultaneous transmission and reception	26
A.10 Receiver / Bad frame indication - TCH/FS - frequency hopping and downlink DTX.....	26
A.11 Receiver / Bad frame indication - TCH/HS - frequency hopping and downlink DTX	27
A.12 Out of band gain	27
A.13 Conducted RF immunity	28
A.14 Reference interference level.....	28

A.15	Radio receiver interference performance	28
A.16	Interference rejection and blocking immunity	28
A.17	Intermodulation	29
A.17.1	Input intermodulation	29
A.17.2	Intermodulation	29
A.17.3	Intermodulation response rejection	30
A.17.4	Receiver intermodulation performance	31
A.17.5	Intermodulation attenuation.....	31
A.17.6	Intermodulation rejection - speech channels	31
A.17.7	Intermodulation spurious response attenuation	32
A.18	Receiver / Usable receiver input level range	32
A.19	Receiver LBT threshold	33
A.20	Receiver LBT threshold and transmitter max on-time	33
A.21	Receiver opening delay	33
A.22	Sensitivity	34
A.22.1	Average usable sensitivity (digital, field strength)	34
A.22.2	Average usable sensitivity (field strength, data or messages)	34
A.22.3	Average usable sensitivity (field strength, responses).....	34
A.22.4	Average usable sensitivity (field strength, speech)	35
A.22.5	Maximum usable sensitivity	35
A.22.6	Maximum usable sensitivity (analogue, conducted)	36
A.22.7	Maximum usable sensitivity (analogue, field strength).....	37
A.22.8	Maximum usable sensitivity (digital, conducted).....	37
A.22.9	Maximum usable sensitivity (digital, field strength).....	38
A.22.10	Maximum usable sensitivity (responses, conducted)	38
A.22.11	DSC receiver maximum usable sensitivity	38
A.22.12	Receiver call sensitivity	38
A.22.13	Receiver sensitivity	39
A.22.14	Reference sensitivity	39
A.22.15	Reference sensitivity - full rate data channels in multislot configuration.....	39
A.22.16	Reference sensitivity - TCH/FS for MS supporting the R-GSM band	39
A.22.17	Multipath reference sensitivity level	40
A.22.18	Static reference sensitivity level	40
A.23	Radio receiver reference BER and FER.....	40
A.24	Single tone desensitization	40
A.25	Spurious emissions and radiations	41
A.25.1	Receiver conducted spurious emissions	41
A.25.2	Conducted spurious emissions when not transmitting.....	41
A.25.3	Receiver conducted spurious emissions conveyed to the antenna.....	41
A.25.4	Receiver radiated spurious emissions.....	42
A.25.5	Receiver spurious emissions.....	42
A.25.6	Receiver spurious emissions from the receiver antenna connector	45
A.25.7	Receiver spurious emissions (idle mode)	45
A.25.8	Spurious emissions when the PP has no allocated transmit channel	45
A.25.9	Receiver spurious emissions at the antenna	45
A.25.10	Receiver cabinet radiated spurious emissions	46
A.25.11	Unwanted emissions in the spurious domain.....	46
A.25.12	Unwanted emissions, conducted	46
A.25.13	Unwanted conducted emissions in reception.....	46
A.25.14	Unwanted radiated emission.....	47
A.25.15	Receiver spurious radiations.....	47
A.26	Spurious response.....	50
A.26.1	Spurious response and blocking immunity.....	50
A.26.2	Spurious response rejection	50
A.26.3	Spurious response rejection ratio.....	51

A.26.4	Spurious response rejection (with simultaneous transmission and reception).....	51
Annex B:	Results obtained by an automatic search (i.e. before analysis of the various definitions)	53
Annex C:	Code used in the Scripts	54
Annex D:	Bibliography	55
History		56

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ETSI TR 103 265 V1.1.2 \(2014-03\)](#)

<https://standards.iteh.ai/catalog/standards/etsi/997cad13-6d53-458a-9442-b13509bee0f8/etsi-tr-103-265-v1-1-2-2014-03>

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<http://ipr.etsi.org>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

Introduction

Many ETSI deliverables address radio parameters. In order to make these documents easy to read and practical for the user, the authors usually include the definitions of those parameters in the text corresponding to the appropriate clauses. Sometimes these definitions are not exact copies from the ETSI Terms and Definitions database "TEDDI" but are (slightly) adapted versions.

As a result many radio parameters have several different definitions being used within ETSI. The aim of the present deliverable is to trace all those definitions, which are not included in "clause 3".

Then it may be possible to harmonize them (work to be done at a later stage).

Because there are many ETSI deliverables it is a lot of work to find all the definitions by hand. Therefore, a computer program that searches for definitions in ETSI-documents has been written. The goal of this program (or set of programs) is to assist tracing the definitions found outside of clause 3.

In the present document the results of searches by hand (clause 5 and annex A) and automatic searches (see annex B) co-exist to make verifications more easy.

Practical experience has shown that some of the outputs provided by a computer program need some further editing by hand.

1 Scope

The present document is intended to provide an overview of the various definitions of radio parameters that can be found in ETSI deliverables.

The present document includes definitions found in ENs and TSs of TC-ERM, gathered in June 2012.

As some consolidation work in the area of Radio Definitions had already been done in the early days of ETSI, definitions in ETR 027 [i.78] (edition 1) and TR 100 027 [i.79] (V1.2.1) have also been searched "by program".

2 References

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the reference document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <http://docbox.etsi.org/Reference>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

2.1 Normative references

The following referenced documents are necessary for the application of the present document.

Not applicable.

2.2 Informative references

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

NOTE: To be noted that, for practical reasons, the list below does not include the references to the ENs and TSs that were searched by program. However, as some of the ENs have been analysed both by hand and by program, some of the references to ENs, below, are also relevant to the searches done by program.

- [i.1] ITU Radio Regulations.
- [i.2] ETSI EN 301 893: "Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive".
- [i.3] ETSI EN 302 502: "Broadband Radio Access Networks (BRAN); 5,8 GHz fixed broadband data transmitting systems; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive".
- [i.4] ETSI EN 301 406: "Digital Enhanced Cordless Telecommunications (DECT); Harmonized EN for Digital Enhanced Cordless Telecommunications (DECT) covering the essential requirements under article 3.2 of the R&TTE Directive; Generic radio".
- [i.5] ETSI EN 301 908-11: "IMT cellular networks; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive; Part 11: CDMA Direct Spread (UTRA FDD) (Repeaters)".
- [i.6] ETSI EN 302 426: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Harmonized EN for CDMA spread spectrum Repeaters operating in the 450 MHz cellular band (CDMA450) and the 410 MHz, 450 MHz and 870 MHz PAMR bands (CDMA-PAMR) covering essential requirements of article 3.2 of the R&TTE Directive".