

9`Y_fca U[bYfbUnXfi y`^j cgh]b`nUXYj Yj`nj Yn]`n`fUX]`g_`ja `gdY_fca `fØFAŁĚ
Ghcf]h`j`_cdYbg_`l`_a cV]b]`_ca i b]_UW]`Ě`FUX]`g_`UcdfYa UnUdfYbcg`dcXUh_cj
ft:n]fca U[cj cfUž_]i dcfUV`^Ua cXi`^UW]`c`g`_cbghUblbc`U]`bY_cbghUblbc`cj`c`b]Wc
]b`ja UUbhYbg_]df]`_4`_Y`_Ě`&`"XY.`<Ufa cb]n]fUb]`9Bž_]`nUYa UV]ghj YbY`nU`h`j`Y
`YbU`" &`X]fY_hj`YF/`HH9

Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service;
Radio equipment intended for the transmission of data (and/or speech) using constant or
non-constant envelope modulation and having an antenna connector; Part 2:
Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
(standards.iteh.ai)

[SIST EN 300 113-2 V1.3.1:2004](https://standards.iteh.ai/catalog/standards/sist/bbd5d067-023b-4d03-87a5-857f5077c533/sist-en-300-113-2-v1-3-1-2004)

<https://standards.iteh.ai/catalog/standards/sist/bbd5d067-023b-4d03-87a5-857f5077c533/sist-en-300-113-2-v1-3-1-2004>

Ta slovenski standard je istoveten z: EN 300 113-2 Version 1.3.1

ICS:

| | | |
|-----------|---|--|
| 33.060.99 | Druga oprema za radijske komunikacije | Other equipment for radiocommunications |
| 33.070.01 | Mobilni servisi na splošno | Mobile services in general |
| 33.100.01 | Elektromagnetna združljivost na splošno | Electromagnetic compatibility in general |

SIST EN 300 113-2 V1.3.1:2004 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 300 113-2 V1.3.1:2004

<https://standards.iteh.ai/catalog/standards/sist/bbd5d067-023b-4d03-87a5-857f5077c533/sist-en-300-113-2-v1-3-1-2004>

ETSI EN 300 113-2 V1.3.1 (2003-12)

Candidate Harmonized European Standard (Telecommunications series)

**Electromagnetic compatibility
and Radio spectrum Matters (ERM);
Land mobile service;
Radio equipment intended for the transmission
of data (and/or speech) using constant or non-constant
envelope modulation and having an antenna connector;
Part 2: Harmonized EN covering essential requirements
under article 3.2 of the R&TTE Directive**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 300 113-2 V1.3.1:2004](https://standards.iteh.ai/catalog/standards/sist/bbd5d067-023b-4d03-87a5-857f5077c533/sist-en-300-113-2-v1-3-1-2004)

<https://standards.iteh.ai/catalog/standards/sist/bbd5d067-023b-4d03-87a5-857f5077c533/sist-en-300-113-2-v1-3-1-2004>



Reference

REN/ERM-TG32-046-2

Keywords

antenna, data, radio, regulation, speech, mobile,
PMR, TDD, TDMA

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

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 300 113-2 V1.3.1:2004

<https://standards.iteh.ai/catalog/standards/sist/bbd5d067-023b-4d03-87a5-857f5072c245/etsi-en-300-113-2-v1-3-1-2004>

Important notice

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the 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, send your comment to:

editor@etsi.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.

© European Telecommunications Standards Institute 2003.
All rights reserved.

DECT™, **PLUGTESTS™** and **UMTS™** are Trade Marks of ETSI registered for the benefit of its Members.
TIPHON™ and the **TIPHON logo** are Trade Marks currently being registered by ETSI 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.

Contents

| | |
|--|----|
| Intellectual Property Rights | 5 |
| Foreword..... | 5 |
| Introduction | 6 |
| 1 Scope | 8 |
| 2 References | 8 |
| 3 Definitions, symbols and abbreviations | 9 |
| 3.1 Definitions | 9 |
| 3.2 Symbols..... | 9 |
| 3.3 Abbreviations | 9 |
| Technical specifications | 9 |
| 4.1 Environmental profile..... | 9 |
| 4.2 Transmitter requirements | 9 |
| 4.2.1 Frequency error..... | 9 |
| 4.2.1.1 Definition | 9 |
| 4.2.1.2 Limit..... | 9 |
| 4.2.1.3 Method of measurement..... | 9 |
| 4.2.2 Carrier power (conducted) | 10 |
| 4.2.2.1 Definition | 10 |
| 4.2.2.2 Limit..... | 10 |
| 4.2.2.3 Method of measurement..... | 10 |
| 4.2.3 Effective radiated power | 10 |
| 4.2.3.1 Definition | 10 |
| 4.2.3.2 Limit..... | 10 |
| 4.2.3.3 Method of measurement..... | 10 |
| 4.2.4 Adjacent channel power..... | 10 |
| 4.2.4.1 Definition | 10 |
| 4.2.4.2 Limit..... | 10 |
| 4.2.4.3 Method of measurement..... | 10 |
| 4.2.5 Spurious emissions | 10 |
| 4.2.5.1 Definition | 10 |
| 4.2.5.2 Limit..... | 10 |
| 4.2.5.3 Method of measurement..... | 10 |
| 4.2.6 Intermodulation attenuation | 11 |
| 4.2.6.1 Definition | 11 |
| 4.2.6.2 Limit..... | 11 |
| 4.2.6.3 Method of measurement..... | 11 |
| 4.2.7 Transmitter attack time | 11 |
| 4.2.7.1 Definition | 11 |
| 4.2.7.2 Limit..... | 11 |
| 4.2.7.3 Method of measurement..... | 11 |
| 4.2.8 Transmitter release time..... | 11 |
| 4.2.8.1 Definition | 11 |
| 4.2.8.2 Limit..... | 11 |
| 4.2.8.3 Method of measurement..... | 11 |
| 4.2.9 Transient frequency behaviour of the transmitter | 11 |
| 4.2.9.1 Definition | 11 |
| 4.2.9.2 Limit..... | 11 |
| 4.2.9.3 Method of measurement..... | 11 |
| 4.3 Receiver requirements | 12 |
| 4.3.1 Sensitivity (data or messages)..... | 12 |
| 4.3.1.1 Definition | 12 |
| 4.3.1.2 Limit..... | 12 |
| 4.3.1.3 Method of measurement..... | 12 |
| 4.3.2 Co-channel rejection | 12 |
| 4.3.2.1 Definition | 12 |

| | | |
|---|---|-----------|
| 4.3.2.2 | Limit..... | 12 |
| 4.3.2.3 | Method of measurement..... | 12 |
| 4.3.3 | Adjacent channel selectivity..... | 12 |
| 4.3.3.1 | Definition..... | 12 |
| 4.3.3.2 | Limit..... | 12 |
| 4.3.3.3 | Method of measurement..... | 12 |
| 4.3.4 | Spurious response rejection..... | 12 |
| 4.3.4.1 | Definition..... | 12 |
| 4.3.4.2 | Limit..... | 12 |
| 4.3.4.3 | Method of measurement..... | 13 |
| 4.3.5 | Intermodulation response rejection..... | 13 |
| 4.3.5.1 | Definition..... | 13 |
| 4.3.5.2 | Limit..... | 13 |
| 4.3.5.3 | Method of measurement..... | 13 |
| 4.3.6 | Blocking or desensitization..... | 13 |
| 4.3.6.1 | Definition..... | 13 |
| 4.3.6.2 | Limit..... | 13 |
| 4.3.6.3 | Method of measurement..... | 13 |
| 4.3.7 | Spurious radiations..... | 13 |
| 4.3.7.1 | Definition..... | 13 |
| 4.3.7.2 | Limit..... | 13 |
| 4.3.7.3 | Method of measurement..... | 13 |
| 4.3.8 | Desensitization and sensitivity (duplex)..... | 13 |
| 4.3.8.1 | Definition..... | 13 |
| 4.3.8.2 | Limit..... | 13 |
| 4.3.8.3 | Method of measurement..... | 14 |
| 4.3.9 | Spurious response rejection (duplex)..... | 14 |
| 4.3.9.1 | Definition..... | 14 |
| 4.3.9.2 | Limit..... | 14 |
| 4.3.9.3 | Methods of measurement..... | 14 |
| 5 | Testing for compliance with technical requirements..... | 14 |
| 5.1 | Environmental conditions for testing..... | 14 |
| 5.1.1 | Normal and extreme test-conditions..... | 14 |
| 5.1.2 | Test power source..... | 14 |
| 5.1.3 | Choice of samples for test suites..... | 14 |
| 5.2 | Interpretation of the measurement results..... | 14 |
| 5.3 | Essential radio test suites..... | 15 |
| 5.3.1 | Frequency error..... | 15 |
| 5.3.2 | Carrier power (conducted)..... | 15 |
| 5.3.3 | Effective radiated power..... | 15 |
| 5.3.4 | Adjacent channel power..... | 15 |
| 5.3.5 | Spurious emissions..... | 15 |
| 5.3.6 | Intermodulation attenuation..... | 15 |
| 5.3.7 | Transmitter attack time..... | 15 |
| 5.3.8 | Transmitter release time..... | 16 |
| 5.3.9 | Transient frequency behaviour of the transmitter..... | 16 |
| 5.3.10 | Receiver Spurious radiations..... | 16 |
| 5.4 | Other radio test suites..... | 16 |
| 5.4.1 | Sensitivity (data or messages)..... | 16 |
| 5.4.2 | Co-channel rejection..... | 16 |
| 5.4.3 | Adjacent channel selectivity..... | 16 |
| 5.4.4 | Spurious response rejection..... | 16 |
| 5.4.5 | Intermodulation response rejection..... | 16 |
| 5.4.6 | Blocking or desensitization..... | 16 |
| 5.4.7 | Desensitization and sensitivity (duplex)..... | 16 |
| 5.4.8 | Spurious response rejection (duplex)..... | 16 |
| Annex A (informative): Bibliography..... | | 17 |
| Annex B (informative): The EN title in the official languages..... | | 18 |
| History..... | | 19 |

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://webapp.etsi.org/IPR/home.asp>).

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 Candidate Harmonized European Standard (Telecommunications series) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC (as amended) laying down a procedure for the provision of information in the field of technical standards and regulations.

The present document is intended to become a Harmonized Standard, the reference of which will be published in the Official Journal of the European Communities referencing the Directive 1999/5/EC [1] of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity ("the R&TTE Directive").

The present document is part 2 of a multi-part deliverable covering the Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector, as identified below:

Part 1: "Technical characteristics and methods of measurement";

Part 2: "Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive".

EN 300 113-2 version 1.2.1 covered both constant envelope angle modulation and non-constant envelope modulation equipment. The present document takes into account more detailed measurement methods covering equipment operating in continuous or discontinuous modes of transmission.

The present version (version 1.3.1) covers equipment designed according to version 1.5.1 of EN 300 113-1 [2].

| National transposition dates | |
|--|------------------|
| Date of adoption of this EN: | 21 November 2003 |
| Date of latest announcement of this EN (doa): | 29 February 2004 |
| Date of latest publication of new National Standard or endorsement of this EN (dop/e): | 31 August 2004 |
| Date of withdrawal of any conflicting National Standard (dow): | 28 February 2007 |

Introduction

The present document (V1.3.1) is part of a set of standards designed to fit in a modular structure to cover all radio and telecommunications terminal equipment under the R&TTE Directive [1]. Each standard is a module in the structure. The modular structure is shown in figure 1.

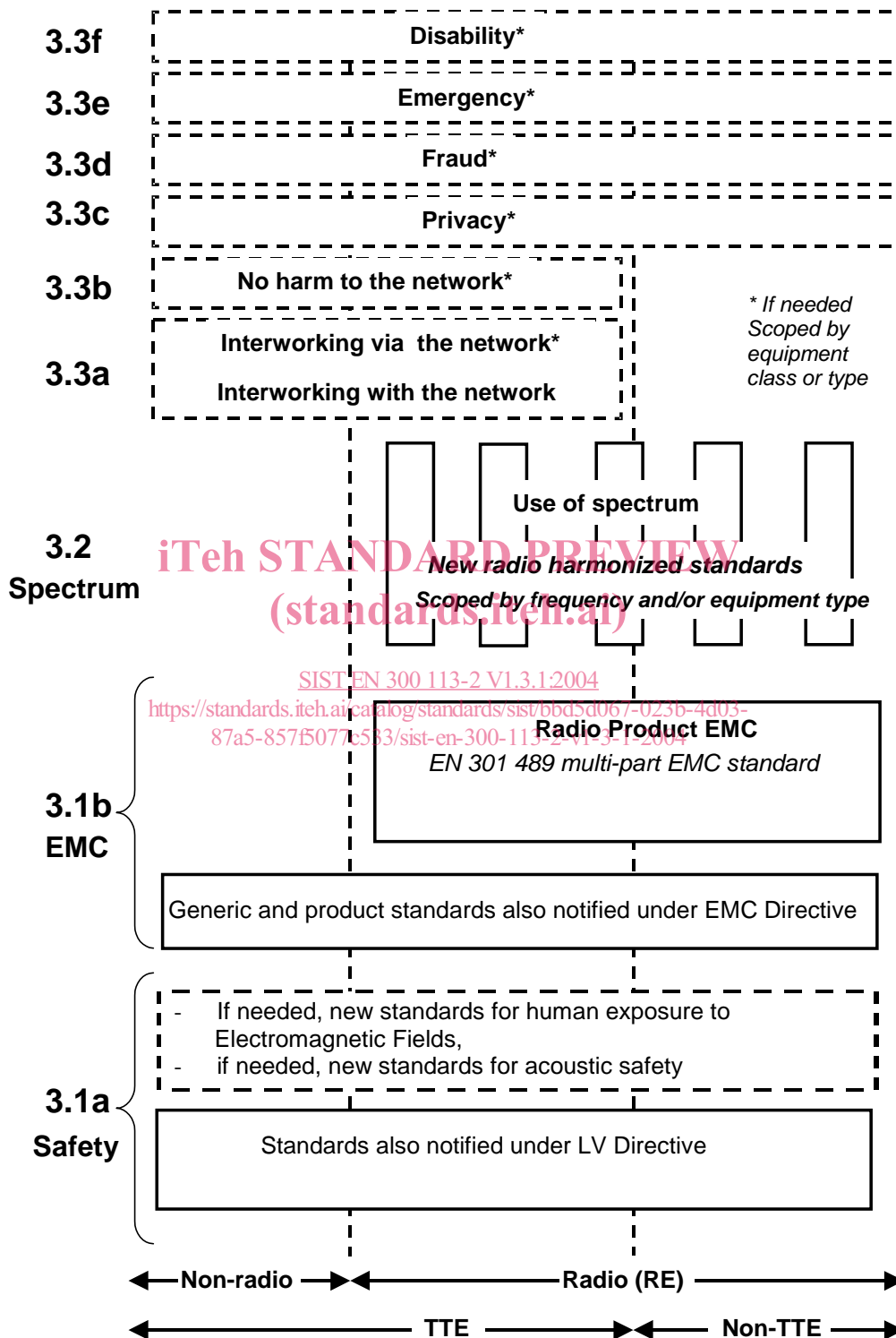


Figure 1: Modular structure for the various standards used under the R&TTE Directive

The left hand edge of the figure 1 shows the different clauses of article 3 of the R&TTE Directive [1].

For article 3.3 various horizontal boxes are shown. Dotted lines indicate that at the time of publication of the present document essential requirements in these areas have to be adopted by the Commission. If such essential requirements are adopted, and as far and as long as they are applicable, they will justify individual standards whose scope is likely to be specified by function or interface type.

The vertical boxes show the standards under article 3.2 for the use of the radio spectrum by radio equipment.

For article 3.1b the diagram shows EN 301 489, the multi-part product EMC standard for radio used under the EMC Directive.

For article 3.1a the diagram shows the existing safety standards currently used under the LV Directive and new standards covering human exposure to electromagnetic fields. New standards covering acoustic safety may also be required.

The bottom of the figure shows the relationship of the standards to radio equipment and telecommunications terminal equipment. A particular equipment may be radio equipment, telecommunications terminal equipment or both. A radio spectrum standard will apply if it is radio equipment. An article 3.3 standard will apply as well only if the relevant essential requirement under the R&TTE Directive [1] is adopted by the Commission and if the equipment in question is covered by the scope of the corresponding standard. Thus, depending on the nature of the equipment, the essential requirements under the R&TTE Directive [1] may be covered in a set of standards.

The modularity principle has been taken because:

- it minimizes the number of standards needed. Because equipment may, in fact, have multiple interfaces and functions it is not practicable to produce a single standard for each possible combination of functions that may occur in an equipment;
- it provides scope for standards to be added:
 - under article 3.2 when new frequency bands are agreed; or
 - under article 3.3 should the Commission take the necessary decisions without requiring alteration of standards that are already published;
- it clarifies, simplifies and promotes the usage of Harmonized Standards as the relevant means of conformity assessment.

1 Scope

The present document applies to either constant envelope angle modulation systems or to non-constant envelope modulation systems for use in the land mobile service, using the available bandwidth, operating on radio frequencies between 30 MHz and 1 GHz, with channel separations of 12,5 kHz, 20 kHz and 25 kHz, intended for data transmissions. It applies to digital and combined analogue and digital radio equipment with an internal or external antenna connector intended for the transmission of data and/or speech. The present document applies both to equipment operating in continuous or in discontinuous mode of transmission.

The types of equipment covered by the present document are as follows:

- base station (equipment fitted with an antenna socket, intended for use in a fixed location);
- mobile station (equipment fitted with an antenna socket, normally used in a vehicle or as a transportable);
- and those hand portable stations:
 - a) fitted with an antenna socket; or
 - b) without an external antenna socket (integral antenna equipment), but fitted with a permanent internal or a temporary internal 50 Ω RF connector which allows access to the transmitter output and the receiver input.

Hand portable equipment without an external or internal RF connector and without the possibility of having a temporary internal 50 Ω RF connector is not covered by the present document.

The present document is intended to cover the provisions of article 3.2 of Directive 1999/5/EC [1] (R&TTE Directive), which states that "..... radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communications and orbital resources so as to avoid harmful interference".

In addition to the present document, other ENs that specify technical requirements in respect of essential requirements under other parts of article 3 of the R&TTE Directive [1] may apply to equipment within the scope of the present document.

<https://standards.iteh.ai/catalog/standards/sist/bbd5d067-023b-4d03-87a5-857f5077c533/sist-en-300-113-2-v1-3-1-2004>

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 and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

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

- [1] Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (R&TTE Directive).
- [2] ETSI EN 300 113-1 (V1.5.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector; Part 1: Technical characteristics and methods of measurement".
- [3] ETSI TR 100 028 (all parts) (V1.3.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in the R&TTE Directive [1], EN 300 113-1 [2] and the following apply:

Mode Listen before transmit: equipment or systems that operate in a mode "listen before transmit" are defined as transceiver equipment or systems that include receiving modules that implement one or more of the following features:

- squelch;
- CTCSS (Continuous Tone Control Squelch System);
- RSSI (Receiver Signal Strength Indicator);
- algorithms evaluating the quality of the channel; or
- more sophisticated protocols using transmission and reception transactions.

3.2 Symbols

For the purposes of the present document, the symbols defined in EN 300 113-1 [2] apply.

3.3 Abbreviations

For the purposes of the present document, the abbreviations defined in EN 300 113-1 [2] apply.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 300 113-2 V1.3.1:2004

<https://standards.iteh.ai/catalog/standards/sist/bbd5d067-023b-4d03-c010-77c533/sist-en-300-113-2-v1-3-1-2004>

Technical specifications

4.1 Environmental profile

The technical requirements of the present document apply under the environmental profile for operation of the equipment, which shall be declared by the manufacturer of the equipment. The equipment shall comply with all the technical requirements of the present document at all times when operating within the boundary limits of the declared operational environmental profile.

4.2 Transmitter requirements

4.2.1 Frequency error

4.2.1.1 Definition

The frequency error is defined in EN 300 113-1 [2], clause 8.1.1.

4.2.1.2 Limit

The frequency error shall not exceed the limits in EN 300 113-1 [2], table 1.

4.2.1.3 Method of measurement

The measurements specified in EN 300 113-1 [2], clause 8.1.2 shall be carried out.