

| | | |
|------------|---|---|
| STN | Elektromagnetická kompatibilita a záležitosti rádiového spektra (ERM). Siet'ové zariadenia s krátkym dosahom (SRD). Rádiové zariadenia na použitie vo frekvenčnom rozsahu od 870 MHz do 876 MHz s výkonom do 500 mW. Časť 1: Technické charakteristiky a skúšobné metódy | STN EN 303 204-1 V1.1.1 87 3204 |
|------------|---|---|

Electromagnetic compatibility and Radio spectrum Matters (ERM); Network Based Short Range Devices (SRD); Radio equipment to be used in the 870 MHz to 876 MHz frequency range with power levels ranging up to 500 mW; Part 1: Technical characteristics and test methods

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 04/15

Obsahuje: EN 303 204-1 V1.1.1:2014

120577

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, odbor SÚTN, 2015
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

ETSI EN 303 204-1 V1.1.1 (2014-10)



**Electromagnetic compatibility and
Radio spectrum Matters (ERM);
Network Based Short Range Devices (SRD);
Radio equipment to be used in the 870 MHz to 876 MHz
frequency range with power levels ranging up to 500 mW;
Part 1: Technical characteristics and test methods**

Reference

DEN/ERM-TG28-503

Keywords

radio, SRD

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

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 | 8 |
| Foreword..... | 8 |
| Modal verbs terminology..... | 8 |
| Introduction | 8 |
| 1 Scope | 11 |
| 2 References | 11 |
| 2.1 Normative references | 11 |
| 2.2 Informative references..... | 12 |
| 3 Definitions, symbols and abbreviations | 12 |
| 3.1 Definitions | 12 |
| 3.2 Symbols..... | 14 |
| 3.3 Abbreviations | 15 |
| 4 Technical requirements specifications | 15 |
| 4.1 General performance criteria..... | 15 |
| 4.2 Presentation of equipment for testing purposes..... | 16 |
| 4.2.1 Choice of model for testing | 16 |
| 4.2.1.1 EUT with an external RF connector..... | 16 |
| 4.2.1.2 EUT without an external RF connector..... | 16 |
| 4.2.1.2.1 EUT with an internal connector..... | 16 |
| 4.2.1.2.2 EUT with a temporary antenna connector | 16 |
| 4.2.1.2.3 Use of a Test Fixture | 17 |
| 4.2.2 Testing of modular equipment..... | 17 |
| 4.2.3 Transmitter shut-off facility..... | 17 |
| 4.2.4 Receiver mute or squelch or battery saving circuit..... | 17 |
| 4.2.5 Marking (equipment identification)..... | 17 |
| 4.3 Auxiliary test equipment | 17 |
| 4.4 Provider declared information..... | 17 |
| 5 Test conditions, power sources and ambient temperatures | 18 |
| 5.1 Normal and extreme test conditions | 18 |
| 5.2 Test power source..... | 18 |
| 5.2.1 External test power source..... | 19 |
| 5.2.2 Internal test power source | 19 |
| 5.3 Normal test conditions..... | 19 |
| 5.3.1 Normal temperature and humidity | 19 |
| 5.3.2 Normal test power source | 19 |
| 5.3.2.1 Mains voltage..... | 19 |
| 5.3.2.2 Regulated lead-acid battery power sources | 19 |
| 5.3.2.3 Other power sources..... | 20 |
| 5.4 Extreme test conditions | 20 |
| 5.4.1 Extreme temperatures | 20 |
| 5.4.1.1 Procedure for tests at extreme temperatures..... | 20 |
| 5.4.1.1.1 Procedure for equipment designed for continuous operation | 20 |
| 5.4.1.1.2 Procedure for equipment designed for intermittent operation | 20 |
| 5.4.1.2 Extreme temperature ranges..... | 21 |
| 5.4.2 Extreme test source voltages..... | 21 |
| 5.4.2.1 Mains voltage..... | 21 |
| 5.4.2.2 Regulated lead-acid battery power sources | 21 |
| 5.4.2.3 Power sources using other types of batteries..... | 21 |
| 5.4.2.4 Other power sources..... | 21 |
| 6 General test conditions | 22 |
| 6.1 Transmitter test signals..... | 22 |

| | | |
|---------|--|----|
| 6.2 | Conducted measurements..... | 22 |
| 6.2.1 | Artificial antenna | 22 |
| 6.2.2 | Voltage Standing Wave Ratio (VSWR)..... | 23 |
| 6.3 | Radiated measurements | 23 |
| 6.4 | Applicable measurement methods..... | 23 |
| 6.5 | Modes of operation..... | 24 |
| 6.5.1 | Test mode..... | 24 |
| 6.5.2 | Transmitter operation..... | 24 |
| 6.5.3 | Testing of multi-frequency or channel agile equipment | 25 |
| 6.5.4 | Non-uniform maximum transmit power | 25 |
| 6.6 | Measuring receiver | 25 |
| 6.6.1 | Reference Bandwidth..... | 26 |
| 6.7 | Test equipment | 26 |
| 7 | Methods of measurement and limits for transmitter parameters | 27 |
| 7.1 | General limits | 27 |
| 7.2 | Frequency error | 27 |
| 7.2.1 | Description..... | 27 |
| 7.2.2 | Test method | 27 |
| 7.2.2.1 | Test conditions | 27 |
| 7.2.2.2 | Radiated measurement | 27 |
| 7.2.2.3 | Conducted measurement | 28 |
| 7.2.2.4 | Alternate conducted measurement | 28 |
| 7.2.2.5 | Measurement procedure | 28 |
| 7.2.3 | Limits..... | 28 |
| 7.3 | Average power (conducted) | 29 |
| 7.3.1 | Description..... | 29 |
| 7.3.2 | Test method | 29 |
| 7.3.2.1 | Test conditions | 29 |
| 7.3.2.2 | Measurement Procedure..... | 29 |
| 7.3.3 | Limits..... | 30 |
| 7.4 | Effective radiated power | 30 |
| 7.4.1 | Description..... | 30 |
| 7.4.2 | Test method | 30 |
| 7.4.2.1 | Test conditions | 30 |
| 7.4.2.2 | Measurement procedure | 30 |
| 7.4.3 | Limits..... | 31 |
| 7.5 | Transient power..... | 31 |
| 7.5.1 | Description..... | 31 |
| 7.5.2 | Test method | 31 |
| 7.5.2.1 | Test conditions | 31 |
| 7.5.2.2 | Radiated measurement | 32 |
| 7.5.2.3 | Conducted measurement | 32 |
| 7.5.2.4 | Measurement procedure | 32 |
| 7.5.3 | Limits..... | 33 |
| 7.6 | Occupied bandwidth..... | 34 |
| 7.6.1 | Description..... | 34 |
| 7.6.2 | Test method | 34 |
| 7.6.2.1 | Test conditions | 34 |
| 7.6.2.2 | Radiated measurement | 34 |
| 7.6.2.3 | Conducted measurement | 34 |
| 7.6.2.4 | Alternate conducted measurement | 34 |
| 7.6.2.5 | Measurement procedure | 35 |
| 7.6.3 | Limits..... | 36 |
| 7.7 | Unwanted emissions in the out-of-band domain | 36 |
| 7.7.1 | Description..... | 36 |
| 7.7.2 | Test method | 37 |
| 7.7.2.1 | Test conditions | 37 |
| 7.7.2.2 | Radiated measurement | 37 |
| 7.7.2.3 | Conducted measurement | 37 |
| 7.7.2.4 | Measurement procedure | 38 |
| 7.7.3 | Limits..... | 39 |

| | | |
|-----------|--|----|
| 7.8 | Unwanted emissions in the spurious domain..... | 40 |
| 7.8.1 | Description..... | 40 |
| 7.8.2 | Test method | 40 |
| 7.8.2.1 | Test conditions | 40 |
| 7.8.2.2 | Radiated measurement | 40 |
| 7.8.2.3 | Radiated measurement | 41 |
| 7.8.2.4 | Conducted measurement | 41 |
| 7.8.2.5 | Measurement procedure | 41 |
| 7.8.2.5.1 | Conducted measurement..... | 41 |
| 7.8.2.5.2 | Radiated measurement..... | 42 |
| 7.8.3 | Limits..... | 43 |
| 7.9 | Frequency stability under low voltage conditions | 43 |
| 7.9.1 | Description..... | 43 |
| 7.9.2 | Test method | 43 |
| 7.9.2.1 | Test conditions | 43 |
| 7.9.2.2 | Radiated measurement | 43 |
| 7.9.2.3 | Conducted measurement | 44 |
| 7.9.2.4 | Alternate conducted measurement | 44 |
| 7.9.2.5 | Measurement procedure | 44 |
| 7.9.3 | Limits..... | 45 |
| 7.10 | Duty cycle | 45 |
| 7.10.1 | Description..... | 45 |
| 7.10.2 | Duty cycle..... | 45 |
| 7.10.2.1 | Test method..... | 45 |
| 7.10.2.2 | Measurement procedure | 45 |
| 7.10.3 | Short term behaviour | 45 |
| 7.10.3.1 | Test method..... | 45 |
| 7.10.3.2 | Test conditions | 46 |
| 7.10.3.3 | Radiated measurement | 46 |
| 7.10.3.4 | Conducted measurement | 46 |
| 7.10.3.5 | Alternate conducted measurement | 46 |
| 7.10.3.6 | Measurement procedure | 46 |
| 7.10.4 | Limits..... | 47 |
| 7.11 | Automatic / adaptive power control | 47 |
| 7.11.1 | Description..... | 47 |
| 7.11.2 | Test method | 47 |
| 7.11.2.1 | Test conditions | 48 |
| 7.11.2.2 | Radiated measurement | 48 |
| 7.11.2.3 | Conducted measurement | 48 |
| 7.11.2.4 | Measurement procedure | 48 |
| 7.11.3 | Limits..... | 49 |
| 8 | Methods of measurement and limits for receiver parameters..... | 49 |
| 8.1 | General limits | 49 |
| 8.2 | Receiver sensitivity | 50 |
| 8.2.1 | Description..... | 50 |
| 8.2.2 | Test method | 50 |
| 8.2.2.1 | Test Conditions | 50 |
| 8.2.2.2 | Radiated measurement | 50 |
| 8.2.2.3 | Conducted measurement | 50 |
| 8.2.2.4 | Measurement procedure | 50 |
| 8.2.3 | Limits..... | 51 |
| 8.3 | Clear channel assessment threshold | 51 |
| 8.3.1 | Description..... | 51 |
| 8.3.2 | Test method | 51 |
| 8.3.2.1 | Test conditions | 52 |
| 8.3.2.2 | Radiated measurement | 52 |
| 8.3.2.3 | Conducted measurement | 52 |
| 8.3.2.4 | Measurement procedure | 52 |
| 8.3.3 | Limits..... | 53 |
| 8.4 | Blocking | 54 |
| 8.4.1 | Description..... | 54 |

| | | |
|-----------------------------|---|-----------|
| 8.4.2 | Test method | 54 |
| 8.4.2.1 | Test conditions | 54 |
| 8.4.2.2 | Radiated measurement | 54 |
| 8.4.2.3 | Conducted measurement | 54 |
| 8.4.2.4 | Measurement procedure | 55 |
| 8.4.3 | Limits | 55 |
| 8.5 | Receiver spurious radiations | 56 |
| 8.5.1 | Description | 56 |
| 8.5.2 | Test method | 56 |
| 8.5.2.1 | Test conditions | 56 |
| 8.5.2.2 | Radiated measurement | 56 |
| 8.5.2.3 | Radiated measurement | 56 |
| 8.5.2.4 | Conducted measurement | 56 |
| 8.5.2.5 | Measurement procedure | 57 |
| 8.5.2.5.1 | Conducted measurement | 57 |
| 8.5.2.5.2 | Radiated measurement | 57 |
| 8.5.3 | Limits | 58 |
| 9 | Polite spectrum access | 58 |
| 9.1 | General limits | 58 |
| 9.2 | Listen before talk | 58 |
| 9.2.1 | Description | 58 |
| 9.2.2 | Test method | 59 |
| 9.2.2.1 | Measurement procedure | 59 |
| 9.2.3 | Limits | 59 |
| 9.3 | Short control signalling transmissions | 59 |
| 9.3.1 | Description | 59 |
| 9.3.2 | Test method | 59 |
| 9.3.2.1 | Measurement procedure | 59 |
| 9.3.3 | Limits | 59 |
| 9.4 | Channel adaptivity | 60 |
| 9.4.1 | Description | 60 |
| 9.4.2 | Test method | 60 |
| 9.4.2.1 | Measurement procedure | 60 |
| 9.4.3 | Limits | 60 |
| 9.5 | Coordination of network relay points | 60 |
| 9.5.1 | Description | 60 |
| 9.5.2 | Test method | 60 |
| 9.5.2.1 | Measurement procedure | 60 |
| 9.5.3 | Limits | 60 |
| 10 | Measurement uncertainty | 61 |
| Annex A (normative): | Void | 62 |
| Annex B (normative): | Test sites and arrangements for radiated measurement | 63 |
| B.1 | Radiation test sites | 63 |
| B.1.1 | Open Area Test Site (OATS) | 63 |
| B.1.2 | Semi Anechoic Room | 64 |
| B.1.3 | Fully Anechoic Room (FAR) | 65 |
| B.1.4 | Measurement Distance | 66 |
| B.2 | Antennas | 67 |
| B.2.1 | Measurement antenna | 67 |
| B.2.2 | Substitution antenna | 67 |
| B.3 | Guidance on the use of radiation test sites | 68 |
| B.3.1 | Power supplies for the battery powered EUT | 68 |
| B.3.2 | Site preparation | 68 |
| B.4 | Coupling of signals | 69 |
| B.4.1 | General | 69 |
| B.4.2 | Data signals | 69 |

| | | |
|-------------------------------|--|-----------|
| B.5 | Void..... | 69 |
| B.6 | Measurement procedures for radiated measurement..... | 69 |
| B.6.1 | Radiated measurements in an OATS or SAR..... | 69 |
| B.6.2 | Radiated measurements in a FAR..... | 70 |
| B.6.3 | Substitution measurement..... | 70 |
| B.7 | Guidance for testing technical requirements..... | 71 |
| B.7.1 | Essential radio test suites and corresponding test sites..... | 71 |
| Annex C (normative): | Test fixture | 72 |
| C.1 | Validation of the test-fixture in the temperature chamber..... | 73 |
| C.2 | Mode of use..... | 75 |
| Annex D (normative): | Void | 76 |
| Annex E (normative): | Technical performance of the spectrum analyser..... | 77 |
| Annex F (informative): | Bibliography..... | 78 |
| History | | 79 |

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 European Standard (EN) has been produced by ETSI Technical Committee Electromagnetic compatibility and Radio spectrum Matters (ERM).

The present document is part 1 of a multi-part deliverable covering Short Range Devices (SRD); Radio equipment to be used in the 870 MHz to 876 MHz frequency range with power levels ranging up to 500 mW, as identified below:

Part 1: "Technical characteristics and test methods";

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

| National transposition dates | |
|--|-----------------|
| Date of adoption of this EN: | 17 October 2014 |
| Date of latest announcement of this EN (doa): | 31 January 2015 |
| Date of latest publication of new National Standard or endorsement of this EN (dop/e): | 31 July 2015 |
| Date of withdrawal of any conflicting National Standard (dow): | 31 July 2015 |

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**may not**", "**need**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Introduction

The present document is part of a set of standards developed by ETSI and is designed to fit in a modular structure to cover all radio and telecommunications terminal equipment within the scope of the R&TTE Directive [i.2]. The modular structure is shown in EG 201 399 [i.5].

For non EU countries the present document may be used for regulatory (Type Approval) purposes.

The present document describes test and performance requirements for licence exempt Short Range Devices (SRDs) intending to use the frequency range 870 - 876 MHz at power levels up to 500 mW and duty cycle up to 2,5 %. The frequency band is shared with other SRDs intended to support applications with more restrictive power levels and duty cycles as well as ER-GSM [i.6] assigned to the frequency range 873 - 876 MHz. Less restrictive duty cycle limits may apply to certain infrastructure SRDs (Network Relay Points) under individual licence.

The present document defines signal and operating constraints within the frequency band as well as at the band edges and when devices operate within range of ER-GSM [i.6] services operating within 873 - 876 MHz:

- SRDs may operate on a specific frequency or may be channel agile and operate on a number of different frequencies. When operating as a system, frequency control should be sufficiently accurate to promote effective use of the spectrum as required by regulation. Transmitted signals are constrained within defined bandwidth limits. Frequency accuracy limits allow implementers to trade signal bandwidth for frequency accuracy in their designs.
- Channel agile SRDs operate on two or more channels with signals constrained to the same limits as non-agile devices.
- Although no channel raster is defined for either fixed frequency or channel agile SRDs, channel separation is limited by regulation to ≤ 200 kHz. A preferred regular channel raster of 200 kHz separation allows sub-divisions of 100 kHz, 50 kHz, etc. for lower data rate applications using narrower bandwidth signals.
- When deployed in locations where GSM-R services are in operation, devices may implement cognitive procedures such as sensing the medium for GSM-R signalling information, or use a priori information from GSM-R operators to determine if additional sharing mechanisms are needed. In such cases, the preferred values of operating frequency should align with the channel raster of ER-GSM [i.6] to minimise potential interference.
- Signal transmissions are constrained in maximum duration and devices are required to wait for specified intervals before again transmitting in a given channel. After transmission limits have been reached on a specific channel, channel agile device operation may continue on a different channel whilst respecting the limits on each channel and overall limits applicable in the operational frequency band.

The present document is intended to promote equitable sharing of the radio resource amongst a variety of devices and intended uses:

- Spectrum sharing is enhanced when transmissions occupy their channel for the shortest time. The specifications included in the present document are not intended for devices operating at low data rates and in narrow channel spacings.
- Specifications are included for devices implementing channel sensing before transmitting.
- Although no specific mechanism is defined, implementations which distribute devices uniformly over the available channels are preferred. Examples of suitable radio specifications and medium access techniques which promote such behaviour can be found in TS 102 887-1 [i.7] and TS 102 887-2 [i.8].
- Other 'polite' spectrum access mechanisms are also described in the present document to emphasise the need to design for effective use of the shared spectrum.

The present document is structured as follows:

- Clauses 1 and 3 provide a general description of the types of equipment covered by the present document and the definitions of terms and abbreviations used.
- Clause 4 provides details on presentation of equipment for testing.
- Clauses 5 and 6 specify the test and general conditions for testing of the device.
- Clause 7 specifies the spectrum utilization parameters of transmitters which are required to be measured. Its sub-clauses provide details on how the equipment should be tested and the conditions which should be applied.
- Clause 8 specifies receiver parameters.
- Clause 9 specifies polite spectrum access parameters.

- Clause 10 gives the maximum measurement uncertainty values.
- Annex A (normative) is Void.
- Annex B (normative) provides specifications concerning radiated measurements.
- Annex C (normative) contains specifications for the test fixture.
- Annex D (normative) is Void.
- Annex E (normative) provides the spectrum analyser specification.
- Annex F (informative) Bibliography covers other supplementary information.

1 Scope

The present document applies to the following radio equipment types:

- 1) Network Based SRDs which are SRDs intended to operate in association with other SRDs to form network topologies supporting the intended application.
- 2) Network Relay Points which are specific fixed Network Based SRDs supporting interconnection of a network of SRDs with an external network or service.

Table 1: Frequency bands designated to Network Based Short Range Devices

| Network Based SRD frequency bands | |
|-----------------------------------|-------------------------|
| Transmit | 870,00 MHz to 875,6 MHz |
| Receive | 870,00 MHz to 875,6 MHz |

NOTE 1: It should be noted that Table 1 represents the most widely implemented position within the European Union and the CEPT countries, but it should not be assumed that the designated bands are available in all countries.

NOTE 2: In addition, it should be noted that other frequency bands may be available for networked short range devices in a country. See European Commission Decision on Short Range Devices [1.3] and CEPT/ERC/REC 70-03 [i.1] as implemented through National Radio Interfaces (NRI) or additional NRI as relevant.

NOTE 3: On non-harmonized parameters, national administrations may impose certain conditions such as the type of modulation, frequency, channel/frequency separations, maximum transmitter radiated power, duty cycle, and the inclusion of an automatic transmitter shut-off facility, as a condition for the issue of Individual Rights for use of spectrum or General Authorization, or as a condition for use under "licence exemption" as it is in most cases for Short Range Devices.

The present document covers equipment intended for use in a fixed location, equipment normally fixed in a vehicle and equipment intended to be carried or attached.

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.

- [1] Recommendation ITU-T O.153: "Basic parameters for the measurement of error performance at bit rates below the primary rate".
- [2] ETSI TR 100 028 (all parts) (V1.4.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics".

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.

- [i.1] CEPT/ERC/REC 70-03: "Relating to the use of Short Range Devices (SRD)".
- [i.2] 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).
- [i.3] Commission Decision 2006/771/EC on harmonization of the radio spectrum for use by short-range devices as amended by subsequent Commission Decisions.
- [i.4] CISPR 16 (2006) (parts 1-1, 1-4 and 1-5): "Specification for radio disturbance and immunity measuring apparatus and methods; Part 1: Radio disturbance and immunity measuring apparatus".
- [i.5] ETSI EG 201 399 (V2.2.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); A guide to the production of Harmonized Standards for application under the R&TTE Directive".
- [i.6] UIC Code 951 (Version 15.3.0, 2012): "European Integrated Railway Radio Enhanced Network, System Requirements Specification".
- [i.7] ETSI TS 102 887-1 (V1.1.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Smart Metering Wireless Access Protocol; Part 1: PHY layer".
- [i.8] ETSI TS 102 887-2 (V1.1.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Smart Metering Wireless Access Protocol; Part 2: Data Link Layer (MAC Sub-layer)".
- [i.9] ETSI TR 102 273-2 (V1.2.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Improvement on Radiated Methods of Measurement (using test site) and evaluation of the corresponding measurement uncertainties; Part 2: Anechoic chamber".
- [i.10] ETSI TR 102 273-3 (V1.2.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Improvement on Radiated Methods of Measurement (using test site) and evaluation of the corresponding measurement uncertainties; Part 3: Anechoic chamber with a ground plane".
- [i.11] ETSI TR 102 273-4 (V1.2.1): "Electromagnetic compatibility and Radio spectrum Matters (ERM); Improvement on Radiated Methods of Measurement (using test site) and evaluation of the corresponding measurement uncertainties; Part 4: Open area test site".

koniec náhľadu – text ďalej pokračuje v platenej verzii STN