
Naprave kratkega dosega (SRD), ki delujejo v frekvenčnem območju od 25 MHz do 1000 MHz - 3-1. del: Harmonizirani standard, ki zajema bistvene zahteve člena 3.2 direktive 2014/53/EU - Oprema z visoko zanesljivostjo z nizkim delovnim ciklom, oprema za socialne alarme, ki deluje na namenjenih frekvencah (od 869,200 MHz do 869,250 MHz)

Short Range Devices (SRD) operating in the frequency range 25 MHz to 1 000 MHz - Part 3-1: Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU - Low duty cycle high-reliability equipment, Social Alarms Equipment operating on designated frequencies (869,200 MHz to 869,250 MHz)

[SIST EN 300 220-3-1 V2.1.1:2017](https://standards.iteh.ai/catalog/standards/sist/b8805a60-e68f-4fde-a958-91853a4f6549/sist-en-300-220-3-1-v2-1-1-2017)

<https://standards.iteh.ai/catalog/standards/sist/b8805a60-e68f-4fde-a958-91853a4f6549/sist-en-300-220-3-1-v2-1-1-2017>

Ta slovenski standard je istoveten z: ETSI EN 300 220-3-1 V2.1.1 (2016-12)

ICS:

13.320	Alarmni in opozorilni sistemi	Alarm and warning systems
33.060.20	Sprejemna in oddajna oprema	Receiving and transmitting equipment

SIST EN 300 220-3-1 V2.1.1:2017 **en**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 300 220-3-1 V2.1.1:2017](https://standards.iteh.ai/catalog/standards/sist/b8805a60-e68f-4fde-a958-91853a4f6549/sist-en-300-220-3-1-v2-1-1-2017)

<https://standards.iteh.ai/catalog/standards/sist/b8805a60-e68f-4fde-a958-91853a4f6549/sist-en-300-220-3-1-v2-1-1-2017>

ETSI EN 300 220-3-1 V2.1.1 (2016-12)



**Short Range Devices (SRD) operating
in the frequency range 25 MHz to 1 000 MHz;
Part 3-1: Harmonised Standard covering the essential
requirements of article 3.2 of Directive 2014/53/EU;
Low duty cycle high reliability equipment, social alarms
equipment operating on designated frequencies
(869,200 MHz to 869,250 MHz)**

Reference

DEN/ERM-TG28-530

Keywordsalarm, harmonised standard, radio, reliability,
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**iTeh STANDARD PREVIEW**
(standards.iteh.ai)SIST EN 300 220-3-1 V2.1.1:2017<https://standards.iteh.ai/catalog/standards/sist/b8805a60-e68f-4fde-a958-91853a4f6547/etsi-en-300-220-3-1-v2-1-1-2017>
Important notice

The present document can be downloaded from:

<http://www.etsi.org/standards-search>

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

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

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

<https://portal.etsi.org/People/CommiteeSupportStaff.aspx>

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 2016.

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
Modal verbs terminology.....	6
Introduction	7
1 Scope	8
2 References	8
2.1 Normative references	8
2.2 Informative references.....	8
3 Definitions, symbols and abbreviations	9
3.1 Definitions	9
3.2 Symbols.....	9
3.3 Abbreviations	9
4 Technical requirements specifications	9
4.1 Environmental profile.....	9
4.2 Technical requirements for transmit mode.....	10
4.2.1 Applicability	10
4.2.2 Operating Frequency and Channel.....	10
4.2.2.1 Description.....	10
4.2.2.2 Limits	10
4.2.2.3 Conformance.....	10
4.2.3 Effective Radiated Power	10
4.2.3.1 Description	10
4.2.3.2 Limits	10
4.2.3.3 Conformance.....	10
4.2.4 Duty Cycle	11
4.2.4.1 Description	11
4.2.4.2 Limits	11
4.2.4.3 Conformance.....	11
4.2.5 Adjacent Channel Power	11
4.2.5.1 Description and Applicability	11
4.2.5.2 Limits	11
4.2.5.3 Conformance.....	11
4.2.6 Transmitter Frequency Error.....	11
4.2.6.1 Description and Applicability	11
4.2.6.2 Limits	12
4.2.6.3 Conformance.....	12
4.2.7 Transmitter Transient Power.....	12
4.2.7.1 Description	12
4.2.7.2 Limits	12
4.2.7.3 Conformance.....	12
4.2.8 Tx Behaviour under Low Voltage Conditions.....	12
4.2.8.1 Description and Applicability	12
4.2.8.2 Limits	12
4.2.8.3 Conformance.....	12
4.3 Technical requirements for all EUT	12
4.3.1 Applicability	12
4.3.2 Spurious Emissions.....	12
4.3.2.1 Description	12
4.3.2.2 Limits	13
4.3.2.3 Conformance.....	13
4.4 Receiver Parameters	13
4.4.1 Applicability	13
4.4.2 Blocking.....	13
4.4.2.1 Description	13

4.4.2.2	Limits	13
4.4.2.3	Conformance	13
5	Technical Requirements for Uni-Directional Communication	13
5.1	Mode A Applicability and Conformance Requirements	13
5.2	Communication method	13
5.3	Transmitter Parameters.....	14
5.4	Receiver Parameters	14
5.4.1	Applicability	14
5.4.2	Adjacent Channel Selectivity.....	14
5.4.2.1	Description	14
5.4.2.2	Limits	14
5.4.2.3	Conformance.....	14
5.4.3	Blocking.....	14
5.4.3.1	Description	14
5.4.3.2	Limits	14
5.4.3.3	Conformance.....	14
5.4.4	Adjacent Channel Saturation	14
5.4.4.1	Description	14
5.4.4.2	Limits	14
5.4.4.3	Conformance.....	15
5.4.5	Spurious Response Rejection.....	15
5.4.5.1	Description	15
5.4.5.2	Limits	15
5.4.5.3	Conformance.....	15
5.4.6	Behaviour at high wanted signal level	15
5.4.6.1	Description	15
5.4.6.2	Limits	15
5.4.6.3	Conformance.....	15
6	Bi-Directional Communication - Single Frequency.....	15
6.1	Mode B1 Applicability and Conformance Requirements.....	15
6.2	Bi-directional Communication	16
6.2.1	Applicability	16
6.2.2	Acknowledgement	16
6.2.2.1	Description	16
6.2.2.2	Limits	16
6.2.2.3	Conformance.....	16
6.3	Transmitter Parameters.....	16
6.4	Receiver Parameters	16
6.4.1	Applicability	16
6.4.2	Adjacent Channel Selectivity.....	16
6.4.2.1	Description	16
6.4.2.2	Limits	16
6.4.2.3	Conformance.....	16
6.4.3	Blocking.....	17
6.4.3.1	Description	17
6.4.3.2	Limits	17
6.4.3.3	Conformance.....	17
6.4.4	Adjacent Channel Saturation	17
6.4.4.1	Description	17
6.4.4.2	Limits	17
6.4.4.3	Conformance.....	17
6.4.5	Spurious Response Rejection.....	17
6.4.5.1	Description	17
6.4.5.2	Limits	17
6.4.5.3	Conformance.....	18
6.4.6	Behaviour at high wanted signal level	18
6.4.6.1	Description	18
6.4.6.2	Limits	18
6.4.6.3	Conformance.....	18
7	Testing for compliance with technical requirements.....	18

iTech STANDARD PREVIEW
(standards.itech.ai)

SIST EN 300 220-3-1 V2.1.1:2017

[https://standards.itech.ai/catalog/standards/sist/b8805a60-e68f-4fde-a958-](https://standards.itech.ai/catalog/standards/sist/b8805a60-e68f-4fde-a958-91853a4f6549/sist-en-300-220-3-1-v2-1-1-2017)

[91853a4f6549/sist-en-300-220-3-1-v2-1-1-2017](https://standards.itech.ai/catalog/standards/sist/b8805a60-e68f-4fde-a958-91853a4f6549/sist-en-300-220-3-1-v2-1-1-2017)

7.1	General	18
7.2	Presentation of equipment for testing purposes	18
7.3	Wanted performance criteria	19
7.3.1	Receiver response	19
Annex A (normative):	Relationship between the present document and the essential requirements of Directive 2014/53/EU	20
Annex B (informative):	Selection of technical parameters	22
B.1	Introduction	22
B.2	Receiver sensitivity	22
B.3	Other receiver parameters	22
B.4	Listen before talk	22
Annex C (informative):	Bibliography	23
History		24

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 300 220-3-1 V2.1.1:2017](https://standards.iteh.ai/catalog/standards/sist/b8805a60-e68f-4fde-a958-91853a4f6549/sist-en-300-220-3-1-v2-1-1-2017)

<https://standards.iteh.ai/catalog/standards/sist/b8805a60-e68f-4fde-a958-91853a4f6549/sist-en-300-220-3-1-v2-1-1-2017>

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

The present document has been prepared under the Commission's standardisation request C(2015) 5376 final [i.4] to provide one voluntary means of conforming to the essential requirements of Directive 2014/53/EU on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC [i.2].

Once the present document is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of the present document given in table A.1 confers, within the limits of the scope of the present document, a presumption of conformity with the corresponding essential requirements of that Directive and associated EFTA regulations.

The present document is part 3-1 of a multi-part deliverable. Full details of the entire series can be found in part 1 [1].

SIST EN 300 220-3-1 V2.1.1:2017

<https://standards.iteh.ai/catalog/standards/sist/b880a60-e68f-4fde-a958-91853a486549/sist-en-300-220-3-1-v2-1-1-2017>

National transition dates

Date of adoption of this EN:	01 August 2016
Date of latest announcement of this EN (doa):	30 November 2016
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	31 May 2017
Date of withdrawal of any conflicting National Standard (dow):	31 May 2018

Modal verbs terminology

In the present document **"shall"**, **"shall not"**, **"should"**, **"should not"**, **"may"**, **"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 equipment within the scope of the Radio Equipment Directive (RED) [i.2].

The equipment to which the present document applies fall within the low duty cycle high reliability devices category.

NOTE 1: The low duty cycle/high reliability devices category is defined in Commission Decision 2013/752/EU [i.3] as:

"Category of short-range devices" means a group of short- range devices that use spectrum with similar technical spectrum access mechanisms or based on common usage scenarios.

and

The low duty cycle/high reliability device category covers radio devices that rely on low overall spectrum utilisation and low duty cycle spectrum access rules to ensure highly reliable spectrum access and transmissions in shared bands. Typical uses include alarm systems that use radio communication for indicating an alert condition at a distant location and social alarms systems that allow reliable communication for a person in distress.

It is recognized that the radio communications link alone does not determine the overall operation of a system, but that a functioning radio communications link is an essential foundation upon which a system may be built.

The present document sets out various means and features by which the performance of a radio communications link may be improved. These include:

- 1) Spectrum Access Rules - with the aim of reducing the probability of collisions between transmissions from different equipment.
- 2) Receiver Parameters - with the aim of reducing the probability of interference from equipment on other frequencies.
- 3) Bi-Directional Communications - with the aim of reducing the time and number of transmissions required to achieve a given level of confidence in successful communication.

Application of these features, separately or in combination, does not necessarily ensure successful radio communication. In addition, there are other features that may be considered, such as listen before talk or error correction, that may improve overall performance.

Clauses 1 and 3 provide a general description on the types of equipment covered by the present document and the definitions and abbreviations used.

Clause 4 specifies technical requirements to be met by all equipment.

Clause 5 specifies technical requirements for receivers in equipment with uni-directional communications.

Clause 6 specifies technical requirements for equipment with bi-directional communications.

Clause 7 specifies the methods for testing for compliance with the technical requirements.

Annex A summarizes the requirements relevant to the RE-Directive [i.2].

1 Scope

The present document applies to social alarm devices operating on designated frequencies.

Designated frequencies are those frequency bands identified in Commission Decision 2013/752/EU [i.3] as having a usage available only to social alarms.

Social alarms are defined in Commission Decision 2013/752/EU [i.3] as:

"Social alarm devices" are radio communications systems that allow reliable communication for a person in distress in a confined area to initiate a call for assistance. Typical uses of social alarm are to assist elderly or disabled people.

These radio equipment types are capable of operating, for transmission or reception, in all or part of the frequency bands given in table 1.

Table 1: Frequency bands

Frequency band
869,200 MHz to 869,250 MHz

The present document contains requirements to demonstrate that radio equipment both effectively uses and supports the efficient use of radio spectrum in order to avoid harmful interference.

2 References

2.1 Normative 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 referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at <https://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.

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

- [1] ETSI EN 300 220-1 (V3.1.1) (11-2016): "Short Range Devices (SRD) operating in the frequency range 25 MHz to 1 000 MHz; Part 1: Technical characteristics and methods of measurement".

2.2 Informative 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 referenced document (including any amendments) applies.

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

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] ETSI EG 203 336: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Guide for the selection of technical parameters for the production of Harmonised Standards covering article 3.1(b) and article 3.2 of Directive 2014/53/EU".

- [i.2] Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC (RE-Directive).
- [i.3] Commission Decision 2013/752/EU amending Decision 2006/771/EC on harmonisation of the radio spectrum for use by short-range devices and repealing Decision 2005/928.
- [i.4] Commission Implementing Decision C(2015) 5376 final of 4.8.2015 on a standardisation request to the European Committee for Electrotechnical Standardisation and to the European Telecommunications Standards Institute as regards radio equipment in support of Directive 2014/53/EU of the European Parliament and of the Council.

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in the RE-Directive [i.2] and ETSI EN 300 220-1 [1] apply, unless otherwise ascribed herein.

low duty cycle/high reliability: category of device used in Commission Decision 2013/752/EU [i.3]

NOTE: Note (15) in the Commission Decision states: "*The low duty cycle/high reliability device category covers radio devices that rely on low overall spectrum utilisation and low duty cycle spectrum access rules to ensure highly reliable spectrum access and transmissions in shared bands. Typical uses include alarm systems that use radio communication for indicating an alert condition at a distant location and social alarms systems that allow reliable communication for a person in distress.*"

(standards.iteh.ai)

3.2 Symbols

SIST EN 300 220-3-1 V2.1.1:2017

For the purposes of the present document, the symbols given in ETSI EN 300 220-1 [1] apply.

91853a4f6549/sist-en-300-220-3-1-v2-1-1-2017

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI EN 300 220-1 [1] apply, unless otherwise ascribed herein.

MI	Message Initiator
MR	Message Responder

4 Technical requirements 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 supplier. 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.

Normal and extreme test conditions are described in ETSI EN 300 220-1 [1], clauses 4.3.3 and 4.3.4.