

AS/NZS 4268:2017
(Incorporating Amendment No. 1)



Australian/New Zealand Standard™

Radio equipment and systems — Short range devices — Limits and methods of measurement



AS/NZS 4268:2017

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- AirServices Australia
- Australian Communications and Media Authority
- Australian Industry Group
- Australian Radio Communications Industry Association
- Australian Wireless Audio Group
- Civil Aviation Safety Authority
- Consumer Electronics Supplier Association
- Electromagnetic Compatibility Society of Australia
- Electromagnetic Technical Evaluation Committee
- Engineers Australia
- Free TV Australia
- Ministry of Business, Innovation and Employment, New Zealand
- Telecommunications Users Association of New Zealand
- Wireless Institute Australia

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Australian/New Zealand Standard™

Radio equipment and systems — Short range devices — Limits and methods of measurement

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Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee RC-006, Radiocommunications Equipment—General, to supersede AS/NZS 4268:2012.

A₁ *This Standard incorporates Amendment No. 1 (November 2021). The start and end of changes introduced by the Amendment are indicated in the text by tags including the amendment number 1. **A₁***

The objective of this Standard is to provide limits and methods of measurement for short range devices placed on the Australian market and authorized for use by the Radiocommunications (Low Interference Potential Devices) Class Licence 2015 (LIPD) and Radiocommunications (Radio-controlled Models) Class Licence 2015, issued by the Australian Communications and Media Authority, and for short range devices placed on the New Zealand market, and authorized for use by the General User Radio Licence (GURL) issued by the New Zealand Ministry of Business, Innovation and Employment.

A₁ *The purpose of Amendment 1 is to refer users of this standard to the most current LIPD class licence information, to replace the information previously contained in [Table 1](#). **A₁***

The purpose of this revision is to simplify compliance arrangements for accepted products by referencing the Standards of the product's market of origin where possible. This will also permit future changes to allow alignment of the Australian licensing and Standards arrangements in a similar manner to that used for New Zealand.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is for information and guidance only.

Statements expressed in mandatory terms in notes to tables are deemed to be requirements of this Standard.

Contents

Preface	ii
Foreword	iv
1 Scope	1
2 Referenced documents	1
3 Definitions	2
4 General provisions	4
4.1 Design and construction	4
4.2 Controls	4
4.3 Frequency bands	4
5 Test conditions	4
5.1 Normal test conditions—Test power source—A.C. mains voltage	4
5.2 Extreme test conditions—Extreme test source voltages—A.C. mains voltage	4
5.3 Extreme temperature conditions	4
6 Transmitter parameters	5
6.1 General	5
6.2 Transmitter requirements	6
6.2.1 Method of assessment	6
6.2.2 Generic Standards	7
6.3 Maximum EIRP	7
6.3.1 Australian limits	7
6.3.2 New Zealand limits	7
6.4 Transmitter spurious emissions	7
6.4.1 Australian limits	7
6.4.2 New Zealand limits	7
6.5 Emission bandwidth limits	7
6.6 Operating frequencies	7
6.6.1 Australian limits	7
6.6.2 New Zealand limits	7
6.7 Test reports	8
7 Receiver parameters	8
7.1 General	8
7.2 Receiver requirements	8
7.2.1 Method of assessment	8
7.2.2 Generic Standards	8
7.3 Test reports	8
8 Further information	15
Appendix A (normative) Dynamic frequency selection (DFS) and transmit power control (TPC) requirements for radio local area network (RLAN) transmitters operating in 5250 to 5350 MHz or 5470 to 5725 MHz	16
Appendix B (informative) Test information—radiated measurements	17
Amendment control sheet	19

Foreword

Short range devices (SRDs) are commonly used for radiocommunications in Australia and New Zealand. Examples of SRDs are: alarms, baby monitors, garage door openers, data collection systems, retail and logistic systems, telecommand applications, wireless home data telemetry and/or security systems, and keyless automobile entry systems. SRDs use all types of modulation, may be fixed, mobile or portable, and have dedicated and/or integral antennas.

In Australia and New Zealand, SRDs may be referred to as Low Interference Potential Devices (LIPDs). In New Zealand, before 2002, SRDs were known as Restricted Radiation Devices (RRDs).

SRDs can expect to share radiofrequency spectrum with other radiocommunications and industrial, scientific and medical (ISM) devices. It is a condition of operation of an SRD that harmful interference is not caused to the operation of other radiocommunications devices. If operation of an SRD causes harmful interference to authorized radiocommunications services, even if the SRD complies with all of the technical Standards and equipment authorization requirements in the national rules, the user of that device is in breach of the conditions of operation of that device. As well, SRDs are not afforded protection from interference caused by other radiocommunications and ISM services.

Australian/New Zealand Standard

Radio equipment and systems — Short range devices — Limits and methods of measurement

1 Scope

This Standard specifies minimum performance requirements and methods of measurement for short range devices (SRDs) supplied for use under the following radiocommunications licences:

- (a) For Australia, the Radiocommunications (Low Interference Potential Devices) Class Licence 2015 and the Radiocommunications (Radio-controlled Models) Class Licence 2015.

NOTE Other requirements exist under the Radiocommunications Compliance and Labelling Scheme.

- (b) For New Zealand, the Radiocommunications Regulations (General User Radio Licence for Short Range Devices) Notice, hereafter referred to as the General User Radio Licence (GURL).

2 Referenced documents

The following documents are referred to in this Standard:

AS/NZS CISPR 11, *Industrial, scientific and medical equipment—Radio-frequency disturbance characteristics—Limits and methods of measurement*

AS/NZS CISPR 22, *Information technology equipment—Radio disturbance characteristics—Limits and methods of measurement*

AS/NZS CISPR 32, *Electromagnetic compatibility of multimedia equipment—Emission requirements*

ISO/IEC 18000-63, *Information technology—Radio frequency identification for item management, Part 63: Parameters for air interface communications at 860 MHz to 960 MHz Type C*

ETSI EN 300-220-1, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW, Part 1: Technical characteristics and test methods*

ETSI EN 300-328, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive*

ETSI EN 300-330-1, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz, Part 1: Technical characteristics and test methods*

ETSI EN 300-422-1, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range; Part 1: Technical characteristics and methods of measurement*

ETSI EN 300-440-1, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 1 GHz to 40 GHz frequency range, Part 1: Technical characteristics and test methods*

ETSI EN 301-839-2, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Ultra Low Power Active Medical Implants (ULP-AMI) and Peripherals (ULP-AMI-P) operating in the frequency range 402 MHz to 405 MHz, Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive*

ETSI EN 301-840-1, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Digital radio microphones operating in the CEPT harmonized band 1 785 MHz to 1 800 MHz, Part 1: Technical characteristics and methods of measurement*

ETSI EN 301-893, *Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive*

ETSI EN 302-264-1, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Road Transport and Traffic Telematics (RTTT); Short Range Radar equipment operating in the 77 GHz to 81 GHz band, Part 1: Technical requirements and methods of measurement*

ETSI EN 302-288-1, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices; Road Transport and Traffic Telematics (RTTT); Short range radar equipment operating in the 24 GHz range, Part 1: Technical requirements and methods of measurement*

ETSI EN 302-537-2, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Ultra Low Power Medical Data Service Systems operating in the frequency range of 401 MHz to 402 MHz and 405 MHz to 406 MHz, Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive*

ETSI EN 305-550-1, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 40 GHz to 246 GHz frequency range, Part 1: Technical characteristics and test methods*

ETSI ETR 273-1-1, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Improvement of Radiated Methods of Measurement (using test site) and evaluation of the corresponding measurement uncertainties, Part 1: Uncertainties in the measurement of mobile radio equipment characteristics; Sub-Part 1: Introduction*

ANSI C63.4, *American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz*

ANSI C63.10, *American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices*

Federal Communications Commission (FCC) 15.407, Code of Federal Regulations, Title 47—Telecommunication, Part 15, Radio Frequency Devices, Section 15.407

Federal Communications Commission (FCC) 95.627, Code of Federal Regulations, Title 47—Telecommunication, Part 95, Personal Radio Services, Section 627

Federal Communications Commission (FCC) 95.635, Code of Federal Regulations, Title 47—Telecommunication, Part 95, Personal Radio Services, Section 635

AUSTRALIAN COMMUNICATIONS AND MEDIA AUTHORITY. Radiocommunications (Low Interference Potential Devices). Class Licence, 2015

Radiocommunications (Radio-controlled Models) Class Licence. 2015

New Zealand Ministry of Business, Innovation and Employment

RADIOCOMMUNICATIONS Regulations (General User Radio Licence for Short Range Devices) Notice

3 Definitions

For the purpose of this Standard, the following definitions apply.

3.1

alarm

use of radiocommunications to indicate an alarm condition at a distant location

3.2**dedicated antenna**

removable antenna supplied and type tested with the radio equipment, designed as an indispensable part of the equipment

3.3**digital modulation transmitter**

intentional radiator (device) that may use digital modulation techniques such as direct sequence spread spectrum modulation, or other forms of complex digital modulation, such as coded orthogonal frequency division multiplexing

3.4**effective radiated power****ERP**

product of the power supplied to the antenna and its gain relative to a half wave dipole in a given direction (normally the direction of maximum radiation)

3.5**emission bandwidth**

width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to 0.5% of the total *mean power* of a given *emission*

3.6**end user**

operator or any person other than a service person

3.7**equivalent isotropically radiated power****EIRP**

product of the power supplied to the antenna and its gain in a given direction (normally the direction of maximum radiation) relative to an isotropic antenna (absolute or isotropic gain)

Note 1 to entry: ERP will always be 2.15 dB less than EIRP for the same radiator in a given direction

3.8**far field**

region where the electric and magnetic fields exist as closed loops independently of the source antenna. The far field begins approximately where the power density begins to decrease in proportion to the inverse square of the distance to the antenna

Note 1 to entry: For a dipole antenna, this corresponds to a distance greater than $\lambda/2\pi$ metres (where λ is wavelength).

3.9**integral antenna**

permanent fixed antenna, which may be designed as an indispensable part of the equipment (i.e. built in)

3.10**radiated measurements**

measurements that involve the measurement of a radiated field

3.11**service person**

person having appropriate technical training, experience and authority from the supplier to ensure that the equipment's performance meets the requirements of this Standard

3.12**telecommand**

use of radiocommunications for the transmission of signals to initiate, modify or terminate functions of equipment at a distance