

Australian/New Zealand Standard™

Technical characteristics and test conditions for data transmission equipment operating in the 900 MHz, 2.4 GHz and 5.8 GHz bands and using spread spectrum modulation techniques

[Modified and containing the full text of ETS 300 328:1996]

AS/NZS 4771:2000

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee RC-003, Radiocommunications Equipment—Lower Power. It was approved on behalf of the Council of Standards Australia on 31 January 2000 and on behalf of the Council of Standards New Zealand on 11 April 2000. It was published on 25 May 2000.

The following are represented on Committee RC-003:

Australian Communications Authority
Australian Electrical and Electronic Manufacturers Association
Australian Information Industry Association
Consumers Federation of Australia
Ministry of Commerce, New Zealand
Model Aeronautical Association of Australia
Spread Spectrum Industry Group

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee RC/3, Radiocommunications Equipment—Lower Power. It is one of a series of Standards intended to provide specifications for spectrum management and minimum radio equipment performance.

This Standard incorporates Amendment No. 1 (December 2003). It was prepared by Committee RC-006, Radiocommunications Equipment—General. The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

Radio equipment meeting the specifications of this Standard may in certain circumstances cause interference to other services or be interfered with by other services. In such circumstances, measures in addition to the requirements of this Standard may be required to resolve the interference (e.g. additional filtering to reduce the level of spurious emissions from equipment using spread spectrum techniques). For more information contact the relevant radiocommunications regulatory authority.

This Standard is an adoption with national modifications and has been reproduced from European Telecommunication Standard ETS 300 328:1996, *Radio Equipment and Systems (RES); Wideband data transmission systems; Technical characteristics and test conditions for data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques*, and Amendment ETS 300 328 A1:1997. The Amendment ETS 300 328 A1:1997 is not reproduced. The technical changes resulting from the Amendment are included in Appendices ZA and ZB.

Variations to ETS 300 328 for application in Australia and New Zealand are set out in Appendices ZA and ZB. Equipment that complies with the body of this Standard as varied by Appendix ZA only is categorized as Class 1 equipment. The source text varied by Appendix ZA is indicated by single marginal bars. Equipment that complies with the body of the Standard as varied by Appendix ZB is categorized as Class 2 equipment. The source text varied by Appendix ZB is identified by double marginal bars. Where triple marginal bars occur, the source text is modified by Appendix ZA and Appendix ZB.

A1 | This Standard differs from ETS 300 328:1996 and the FCC Rules and Regulations in that some test signals and spectral conditions are varied to reflect local conditions and usage. Any limit derived from the measurement of radiated signals is expressed in equivalent isotropic radiated power.

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

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

As this Standard is reproduced from a European Standard, the following applies:

- (a) The Standard number does not appear on each page of text and its identity is shown only on the cover.
- (b) In the source text ‘this European Telecommunications Standard’ should read ‘this Australian/New Zealand Standard’.
- (c) A full point should be substituted for a comma when referring to a decimal marker.

References to International Standards should be replaced by equivalent Australian or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>		<i>Australian or Australian/New Zealand Standard</i>	
CEPT		AS/NZS	
Rec. T/R 10-01	Wideband Data Transmission in the 2,4 GHz to 2,5 GHz ISM band	—	
Rec. T/R 01-04	Lower Power Devices	—	
Rec. T/R 71-03	Procedures for Type Testing and Approval for Radio Equipment	—	
ETR		AS/NZS	
027	Radio Equipment and Systems; Methods of measurement for mobile radio equipment	—	
028	Radio Equipment and Systems; Uncertainties in the measurement of mobile radio equipment characteristics	—	
EN			
55022	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	3548	Limits and methods of measurement of radio disturbance characteristics of information technology equipment
A1	FCC		
	[7] Federal Communications Commission Title 47 of the Code of Federal Regulations Part 15 (Radio Frequency Devices), Section 15.247		

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NOTES

Technical characteristics and test conditions for data transmission equipment operating in the 900 MHz, 2.4 GHz and 5.8 GHz bands and using spread spectrum modulation techniques

1 Scope

This European Telecommunication Standard (ETS) covers equipment referred to in CEPT Recommendation T/R 10-01 [1]. This ETS covers the minimum technical characteristics for radio data transmission equipment having the following technical parameters:

- wideband radio modulation techniques;
- aggregate bit rates in excess of 250 kbits/s;
- operation in the 2,4 to 2,483 5 GHz Industrial, Scientific and Medical (ISM) band;
- effective radiated power of up to -10 dBW (100 mW);
- power density of up to -10 dBW (100 mW) per 100 kHz for frequency hopping modulation;
- power density of up to -20 dBW (10 mW) per 1 MHz for other forms of spread spectrum modulation.

This ETS only addresses the transceivers, transmitters and receivers of equipment offered for testing.

The equipment offered for testing may be used in fixed, mobile or portable applications, e.g.:

- stand-alone radio equipment with or without their own control provisions;
- plug-in radio devices intended for use with or within a variety of host systems, e.g. personal computers, hand-held terminals, etc.

The equipment may be fitted with integral antennae and/or antenna connectors.

CEPT Recommendation T/R 10-01 [1] defines the total power and power density limits for systems using spread spectrum modulation together with a minimum aggregate bit rate of 250 kbits/s. The Recommendation does not address the details of these modulation techniques. Therefore, this ETS does not cover the design or operation of the equipment being tested but describes a common set of measurements to be applied to various types of such equipment, including those employing Frequency Hopping Spread Spectrum (FHSS) modulation and Direct Sequence Spread Spectrum (DSSS) modulation.

CEPT Recommendation T/R 10-01 [1] specifies that spread spectrum modulation be used and it gives power density values for FHSS and DSSS modulation. This ETS specifies the minimum technical parameters of FHSS modulation such that it can be clearly differentiated from other types of modulation, including DSSS modulation.

CEPT Recommendation T/R 01-04 [2] defines limits of spurious emissions for a variety of radio equipment; these limits are used in this ETS as appropriate.

This ETS describes measurements for operating frequency range(s), effective radiated power and power density as well as spurious emissions for transmitters and receivers.

The measurement methods have been adapted from ETR 027 [4] where possible.

This ETS specifies test site characteristics, test conditions, equipment calibration and methods of measurement.