AS/NZS 4768.1:2006

Australian/New Zealand Standard™

Digital radio equipment operating in land mobile and fixed services bands in the frequency range 29.7 MHz to 1 GHz

Part 1: Radiofrequency requirements

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee RC-006, Radiocommunications Equipment—General. It was approved on behalf of the Council of Standards Australia on 8 August 2006 and on behalf of the Council of Standards New Zealand on 18 August 2006.
This Standard was published on 22 September 2006.

The following are represented on Committee RC-006:

Australian Communications and Media Authority
Australian Electrical and Electronic Manufacturing Association
Australian Information Industry Association
Australian Marine Industries Federation
Civil Aviation Safety Authority
Electromagnetic Compatibility Society of Australia
Electromagnetic Technical Evaluation Committee
Ministry of Economic Development, NZ
Singtel Optus

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We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 06131.

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Part 1: Radiofrequency requirements

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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 4768.1:2003. This Standard was originally developed from Australian Standard AS 4295, *Analogue speech (angle modulated) equipment operating in land mobile and fixed services bands in the frequency range 29.7 MHz to 1 GHz*, the ETSI publications EN 300 113-1 V1.3.1 and EN 300 113-1 V1.4.1, and IEC 60489-6, Ed.3 (1999), *Radio equipment used in mobile services—Methods of measurement, Part 6: Data equipment.*

In Australia and New Zealand, it is common to import equipment from other parts of the world where there may not be harmonized spectrum management and equipment specification regimes. The objective of this Standard is to provide the user, manufacturer or supplier of digital radio equipment operating in the frequency range 29.7 MHz to 1 GHz of the VHF and UHF Land Mobile and Fixed Services Bands with the minimum technical performance characteristics and requirements necessary to contribute to effective management of the radiofrequency spectrum in Australia and New Zealand.

The requirements specified in this Standard take into account that, in Australia and New Zealand, digital radio equipment may operate in spectrum adjacent to analogue radio equipment. This arrangement requires that digital radio equipment operate without causing harmful interference to analogue radio equipment occupying adjacent channels and vice versa.

In 2004 a submission was made to Standards Australia, by manufacturers in an effort to reduce compliance testing costs, by moving to one set of testing to achieve both European and local approval for equipment. The requested solution was to accept testing based on the European standard ETS 300 113-1.

This edition was produced as a result of RC-006 considering the introduction of an alternative path to approval based on testing to the ETS 300 113-1 standard with some additions where necessary. Whilst the test methods and limits in the ETSI standard in some areas are different to the IEC methods originally used in AS/NZS 4768.1:2003, the committee judged that product compliant with such tests, (including any additional requirements) would be suitable for use locally with some minor changes. The additions which are detailed in Table A1 of Appendix A, amongst other things, extend the maximum extreme temperature to 60°C and require transmitter spurious emission testing at extremes of voltage and temperature. Some requirements are limits in the main body of the standard such as transmitter power, which are retained to support the licensing arrangements in both countries.

This Standard is Part 1 of AS/NZS 4768, *Digital radio equipment operating in land mobile and fixed services bands in the frequency range 29.7 MHz to 1 GHz*, which consists of the following parts:

Part 1: Radiofrequency requirements (this Standard)

Part 2: Methods of test

This Part 1 provides the minimum radiofrequency requirements for operation of the equipment in Australia and New Zealand. Part 2 provides the test methods to be used when compliance with these limits is to be assessed. Not all of the test methods in Part 2 are required.

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

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Part 1: Radiofrequency requirements

1 SCOPE

This Standard provides radiofrequency requirements for digital radio equipment operating in land mobile and fixed services radiofrequency bands in the frequency range 29.7 MHz to 1 GHz with channel spacings up to 25 kHz.

Categories of equipment within this range include—

(a) base, mobile, personal mobile and RF control stations operating in designated land mobile bands; and

(b) fixed point-to-point and point-to-multipoint equipment operating in designated single channel fixed service bands.

Emissions not covered by ITU Radio Regulations (edition 1982), Article 4 and Appendix 6 (AP6, part A for details and definition of the emission characteristics) and the ETSI standard EN 300 113-1 referenced in Appendix A are not within the scope of this Standard.

In 2006 following a submission by manufacturers in an effort to reduce compliance testing costs, this Standard was produced, which introduces an alternative path to compliance based on testing to ETS 300 113-1 standard with certain variations. Details of this alternative approval path are contained at Appendix A.

The Australian Communications and Media Authority, (ACMA) in mandating the requirements of this standard propose to limit the effective scope to maximum frequency of 520 MHz. This parallels the maximum frequency range mandated for AS/NZS 4295:2004 through the ACMA standard *Radiocommunications (Analogue Speech (Angle Modulated) Equipment) Standard 2005.*

Equipment operating in the land mobile services bands from 806 to 825 MHz and 851 to 870 MHz is not covered by the Standard.

NOTE: For operation of land mobile equipment in these bands refer to the relevant authorities in Australia and New Zealand.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

4295 Analogue speech (angle modulated) equipment operating in land mobile and fixed services bands in the frequency range 29.7 MHz to 1 GHz

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4768 Digital radio equipment operating in land mobile and fixed services bands in the frequency range 29.7 MHz to 1 GHz

4768.2 Part 2: Methods of test