AS/NZS 4768.1:2010

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

STANDARDS Australia

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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 28 September 2009 and on behalf of the Council of Standards New Zealand on 8 February 2010.
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The following are represented on Committee RC-006:

Airservices Australia
Australian Communications and Media Authority
Australian Industry Group
Australian Radio Communications Industry Association
Civil Aviation Safety Authority
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Electromagnetic Technical Evaluation Committee
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This Standard was issued in draft form for comment as DR 09028.

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

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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 4768.1:2006.

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.

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 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.

This Standard was originally developed from 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*.

Following a submission by manufacturers in an effort to reduce compliance testing costs, AS/NZS 4768.1:2006 introduced an alternative path to compliance based on testing to the ETSI EN 300 113-1 Standard with some additions where necessary. While 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 set out in Appendix A, extend the maximum extreme temperature to 60°C and require transmitter spurious emission testing at extremes of voltage and temperature. Some limits contained in the main body of the Standard such as transmitter power, are retained to support the licensing arrangements in both countries.

The proposed changes in this new edition, made at the request of industry, incorporate relaxations to the performance requirements for certain remote multipoint stations in view of their remote location and low duty cycle operation, as well as to encourage reduced power consumption designs.

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 and footnotes to tables are deemed to be requirements of this Standard.

The term ‘normative’ has been used in this Standard to define the application of the Appendix. A normative appendix is an integral part of a Standard.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

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

1 SCOPE

This Standard provides radiofrequency requirements for constant envelope emission 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 of 12.5 kHz or 25 kHz. Equipment employing non-constant envelope emissions is not within the scope of this standard.

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.

Equipment operating in the land mobile services bands from 806 to 825 MHz and 851 to 870 MHz is not within the scope of 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/NZS

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

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

ETSI EN

300 113 V1.6.1 Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector

300 113-1 Part 1: Technical characteristics and methods of measurement

IEC

60489 Radio equipment used in mobile services—Methods of measurement

60489-6 Part 6: Data equipment

ITU-T

0.152 Error performance measuring equipment for bit rates of 64 kbit/s and N × 64 kbit/s

0.153 Basic parameters for the measurement of error performance at bit rates below the primary rate

0.163 Equipment to perform in-service monitoring on 1544 kbit/s signals

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