AS/NZS 4768.3:2018

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 3: Application of recognized Standards

STANDARDS Australia

STANDARDS NEW ZEALAND PAEREWA AOTEAROA

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 6 September 2018 and by the New Zealand Standards Approval Board on 5 September 2018.
This Standard was published on 11 October 2018.

The following are represented on Committee RC-006:

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 Suppliers Association
Electromagnetic Compatibility Society of Australia
Electromagnetic Technical Evaluation Committee
Engineers Australia
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Ministry of Business, Innovation and Employment, New Zealand
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Telecommunications Users Association of New Zealand
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Additional Interests:

Department of Defence (Australian Government)

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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 Standards Australia or the New Zealand Standards Executive at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS 4768.3:2018.

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee RC-006, Radiocommunications Equipment—General.

The objective of this Standard is to formalize a process based on recognition of mature digital Standards from around the world. This will 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 for effective management of the radiofrequency spectrum in Australia and New Zealand.

This Standard is Part 3 of AS/NZS 4768 series, which consists of the following:

AS/NZS	
4678	Digital radio equipment operating in land mobile and fixed services bands in the frequency range 29.7 MHz to 1 GHz
4678.1	Part 1: Radiofrequency requirements
4678.2	Part 2: Methods of test (IEC 60489-6:1999, MOD)
4678.3	Part 3: Application of recognized Standards (this Standard)

This Standard extends digital equipment testing and assessment beyond the channel and emission limitations of Part 1 and the associated test methods in Part 2. It includes non-constant envelope emissions, and operation on narrower channel bandwidths. In practice, this Standard replaces Part 1 and Part 2 in relation to ETSI based testing.

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

CONTENTS

Page

FOREWORD

Digital equipment providing an analogue speech (angle modulated) modulation capability is required by regulation in Australia and New Zealand to conform to AS/NZS 4295.

In the absence of a mandated digital Standard in Australia, for many years the ACMA NATA accredited radiocommunications test laboratory had provided a voluntary 'spectrum impact' assessment process to industry, in order for digital equipment to be accepted as suitable for licensing purposes alongside analogue services. That testing was based on the previous AS/NZS 4295 analogue Standard, which followed IEC test methods and established conformance of digital equipment against the analogue equipment performance limits.

The ACMA spectrum impact testing was emissions based and guided by the principle that emissions from the transmitter and receiver are issues that affect other spectrum users. For interference management purposes, digital equipment receiver performance was assumed to be equivalent to AS/NZS 4295 requirements except where there was no analogue equivalent, such as equipment with channel spacings of less than 10 kHz.

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.

This Standard moves beyond the original concept of the spectrum impact testing and includes minimum requirements for receiver performance in recognition of the fact that it also impacts on efficient spectrum use. 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 Standard will in general align with ETSI and other recognized Standards, as appropriate, in order to assess if equipment is compatible with the current channel arrangements of 25 kHz, 12.5 kHz and 6.25 kHz used in Australia and New Zealand. Regional requirements are included in this Standard and variations (in some limits) in recognition of the previous AS/NZS 4295 standard limits, which have proven acceptable in practice.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard provides radiofrequency requirements for constant and non-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 25 kHz, 12.5 kHz or 6.25 kHz.

Categories of equipment within this range include—

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

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

(c) personal mobile, fixed and repeater equipment operating in the maritime mobile service and used for on-board communications in the frequency band 450 MHz to 470 MHz.

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

1.2 APPLICATION

For channel spacings less than 10 kHz, EN 301 166 V2.1.1 with local variations listed in Section 4 shall be applied.

For channel spacings greater than 10 kHz—

(a) EN 300 113 V2.2.1 with local variations listed in Section 3; or

(b) one of the Standards listed in Section 4 with local variations shall be applied.

Testing shall be conducted to all the requirements of the applied Standard, not just aspects for which there are local variations. Digital equipment that is capable of operation within the scope of the analogue land mobile Standard AS/NZS 4295 shall conform to the requirements of that Standard (which is based on ETSI EN 300 086 V2.1.2).

NOTE: Section 4 lists alternative approval paths for equipment based on conformance to any of the Standards listed in Table 4.1, including the associated regional requirements such as power limits, mains operating voltage, adjustment mechanisms and labelling, etc.

1.3 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