

Australian/New Zealand Standard™

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



AS/NZS 4295:2004

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 22 April 2004 and on behalf of the Council of Standards New Zealand on 30 April 2004. This Standard was published on 22 June 2004.

The following are represented on Committee RC-006:

Australian Communications Authority
Australian Electrical and Electronic Manufacturers Association
Civil Aviation Safety Authority
Department of Defence (Australia)
Electromagnetic Compatibility Society of Australia
Ministry of Economic Development (New Zealand)
New Zealand Electromagnetic Technical Evaluation Committee (EMTEC)
SingTel Optus
Telstra Corporation
Wireless Institute Australia

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.standards.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

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 03536.

Australian/New Zealand Standard™

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

Originated as AS 4295—1995.
Jointly revised and designated as AS/NZS 4295:2004.
Reissued incorporating Amendment No. 1 (September 2006).

COPYRIGHT

© Standards Australia/Standards New Zealand

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Jointly published by Standards Australia, GPO Box 476, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 6097 X

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee RC-006, Radiocommunications Equipment—General to supersede AS 4295—1995.

This Standard incorporates Amendment No. 1 (September 2006). 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.

It is one of a series of Standards intended to specify the essential operational and marking requirements and required radiofrequency characteristics for operation within the Australian and New Zealand radiofrequency spectrum arrangements.

This Standard differs from the 1995 edition as follows:

- (a) It is published as a Joint Australian/New Zealand Standard.
- (b) Technical variations were made to align with the companion two part Digital standard AS/NZS 4768. These include separate transmitter carrier power tables for Australia and New Zealand, relaxations to receiver selectivity test limits and adoption of the receiver conducted spurious radiation test method and limits from ETSI standard ETS 300 086.

A1

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 300 086.

Following consideration by RC-006, an amendment was produced which introduced an alternative path to approval within AS/NZS 4295:2004 based on testing to the ETS 300 086 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 4295:2004, 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 B1 of Appendix B, 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.

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

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

CONTENTS

	<i>Page</i>
SECTION 1 GENERAL	
1.1 SCOPE	4
1.2 REFERENCED DOCUMENTS	4
1.3 DEFINITIONS	5
SECTION 2 TEST CONDITIONS	
2.1 GENERAL	8
2.2 STANDARD TEST CONDITIONS	9
2.3 EXTREME TEST CONDITIONS	10
2.4 PROCEDURE FOR TESTS AT EXTREME TEMPERATURES.....	11
SECTION 3 EQUIPMENT REQUIREMENTS	
3.1 GENERAL REQUIREMENTS	12
3.2 TRANSMITTER REQUIREMENTS	13
3.3 RECEIVER REQUIREMENTS.....	21
APPENDIX A CHARACTERISTICS OF POWER MEASURING RECEIVER	26

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard**Analogue speech (angle modulated) equipment operating in land mobile and fixed services bands in the frequency range 29.7 MHz to 1 GHz**

SECTION 1 GENERAL

1.1 SCOPE

This Standard applies to analogue speech (angle modulated) equipment operating in the VHF and UHF land mobile and fixed service radiofrequency bands in the range 29.7 MHz to 1 GHz that are not subject to spectrum licensing arrangements.

Categories of equipment within this range include—

- (a) base, mobile, personal mobile and RF control stations operating in the designated land mobile bands in the frequency range 29.7 MHz to 1 GHz with channel spacings of 12.5 kHz, 20 kHz (in Australia see Clause 3.1.10) or 25 kHz;
- (b) fixed point to point and point to multipoint equipment operating in the designated single channel fixed service bands in the frequency range 29.7 MHz to 1 GHz with channel spacings of 12.5 kHz or 25 kHz. The labelling arrangements however, must still meet the requirements of clause 3.1.2;
- (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; and
- (d) Narrowband Area Service (NAS) transmitters used in Australia, with performance requirements identical to LMRS Base stations.

In 2006 following a submission by manufacturers in an effort to reduce compliance testing costs, an amendment to this Standard was produced which introduced an alternative path to compliance based on testing to ETS 300 086 with certain variations. Details of this alternative approval path are contained at **Appendix B**.

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

Equipment operating in the land mobile services bands from 820 MHz to 825 MHz and 865 MHz to 870 MHz is not covered by the Standard.

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

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS/NZS

- | | |
|--------|--|
| 4768 | Digital radio equipment operating in land mobile and fixed services bands in the frequency range 29.7 MHz to 1 GHz |
| 4768.1 | Part 1: Radiofrequency requirements |
| 4768.2 | Part 2: Methods of test |