

AS 4294(Int)—1995
(Expires 5 July 1999)

Interim Australian Standard[®]

**AMPS receiver immunity to
interfering signals employing
amplitude modulation**

This Interim Australian Standard was prepared by Committee TE/3, Electromagnetic Interference. It was approved on behalf of the Council of Standards Australia on 9 March 1995 and published on 5 July 1995.

The following interests are represented on Committee TE/3:

Association of Consulting Engineers, Australia
Association of New Zealand Electrical Appliance Distributors
Australian Broadcasting Corporation
Australian Chamber of Commerce and Industry
Australian Electrical and Electronic Manufacturers Association
Australian Information Industry Association
Australian Telecommunications Authority
Consumer Electronics Suppliers Association, Australia
CSIRO—Division of Applied Physics, Australia
Department of Communications and the Arts, Australia
Department of Defence, Australia
Electrical Compliance Testing Association, Australia
Electricity Supply Association of Australia
Federation of Australian Commercial Television Stations
Federation of Australian Radio Broadcasters
Institution of Radio and Electronics Engineers, Australia
Ministry of Commerce, Communications Divisions, New Zealand
National Standards Commission, Australia
Optus Communications
Public Transport Corporation (Melbourne)
Society of Automotive Engineers, Australia
Spectrum Management Agency, Australia
Telecom Australia
Wireless Institute of Australia

Additional interests participating in preparation of Standard:

Australian Mobile Telecommunications Association

Review of Australian Standards. To keep abreast of progress in industry, Australian Standards are subject to periodic review and are kept up to date by the issue of amendments or new editions as necessary. It is important therefore that Standards users ensure that they are in possession of the latest edition, and any amendments thereto.

Full details of all Australian Standards and related publications will be found in the Standards Australia Catalogue of Publications; this information is supplemented each month by the magazine 'The Australian Standard', which subscribing members receive, and which gives details of new publications, new editions and amendments, and of withdrawn Standards.

Suggestions for improvements to Australian Standards, addressed to the head office of Standards Australia, are welcomed. Notification of any inaccuracy or ambiguity found in an Australian Standard should be made without delay in order that the matter may be investigated and appropriate action taken.

This Standard was issued in draft form for comment as DR 94349.

Interim Australian Standard[®]

**AMPS receiver immunity to
interfering signals employing
amplitude modulation**

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TE/3 on Electromagnetic Interference as an Interim Australian Standard and is the result of a consensus among Australian and New Zealand representatives on the Joint Committee to produce it as an Australian document only.

The object of this Standard is to confer protection to an Advanced Mobile Phone System cellular mobile station receiver against the interfering effects of radiated signals employing amplitude modulation in the band immediately above the AMPS B mobile receive band, between 890 MHz and 915 MHz. It is referenced by Austel Technical Standard TS 005/Amdt 2/1994 and should be read in conjunction with Austel Technical Standard TS 005—1992, *Analogue Cellular Mobile Telecommunications System—AMPS Mobile Station*, including amendments TS 005/Amdt 1/1994-04-18 and TS 005/Amdt 2/1994, which apply.

Standards Australia invites comment on this Interim Standard from persons and organizations concerned with this subject. The date of expiry for comment is two years after publication at which time this Interim Australian Standard will be confirmed, withdrawn or revised in the light of public comment or published as an Australian Standard. During the life of this document the Committee will monitor all comment as it is received.

CONTENTS

	<i>Page</i>
1 SCOPE	3
2 REFERENCED DOCUMENTS	3
3 DEFINITIONS	3
4 IMMUNITY CRITERIA	3
5 STANDARD CONDITIONS OF TEST	4
6 METHODS OF TEST	4

First published as AS 4294(Int)—1995.

Incorporating:
Amdt 1—1997

© Copyright — STANDARDS AUSTRALIA

Users of Standards are reminded that copyright subsists in all Standards Australia publications and software. Except where the Copyright Act allows and except where provided for below no publications or software produced by Standards Australia may be reproduced, stored in a retrieval system in any form or transmitted by any means without prior permission in writing from Standards Australia. Permission may be conditional on an appropriate royalty payment. Requests for permission and information on commercial software royalties should be directed to the head office of Standards Australia.

Standards Australia will permit up to 10 percent of the technical content pages of a Standard to be copied for use exclusively in-house by purchasers of the Standard without payment of a royalty or advice to Standards Australia.

Standards Australia will also permit the inclusion of its copyright material in computer software programs for no royalty payment provided such programs are used exclusively in-house by the creators of the programs.

Care should be taken to ensure that material used is from the current edition of the Standard and that it is updated whenever the Standard is amended or revised. The number and date of the Standard should therefore be clearly identified.

The use of material in print form or in computer software programs to be used commercially, with or without payment, or in commercial contracts is subject to the payment of a royalty. This policy may be varied by Standards Australia at any time.

STANDARDS AUSTRALIA

Australian Standard

AMPS receiver immunity to interfering signals employing amplitude modulation

1 SCOPE This Standard describes methods of measurement and test levels to determine the radiofrequency immunity of advanced mobile phone system (AMPS) cellular mobile station receivers against the interfering effects of amplitude modulated signals radiated in the frequency band between 890 MHz and 915 MHz inclusive.

This Standard applies to all AMPS analogue cellular mobile stations incorporating an integral antenna or with provision for the direct attachment of an antenna, that have been based upon the mobile station and air interface parts of the USA Electronic Industries Association (EIA) Standards ANSI/EIA/TIA-553 and EIA IS-19-B. Methods of test are described for hand-held mobile stations. Methods of test for transportable mobile stations are under consideration.

2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

EIA

IS-19-B EIA Interim Standard IS-19-B: Recommended Minimum Standards for 800 MHz Cellular Subscriber Units

TIA-553 Mobile Station—Land Station Compatibility Specification

3 DEFINITIONS For the purpose of this Standard the definitions below apply.

3.1 Hand-held cellular mobile station—a mobile station containing radiofrequency transmitter and receiver, and acoustic transmitter and receiver transducers in a single unit intended to access public mobile telecommunication services over an air interface.

3.2 SINAD—an acronym of **S**ignal, **N**oise, and **D**istortion. It is the ratio of the rms value of signal-plus-noise-plus-distortion to the rms value of the noise-plus-distortion, expressed in dB (EIA IS-19-B).

3.3 Transportable cellular mobile station—a mobile station containing a radio-frequency transmitter and receiver in one unit and acoustic transmitter and receiver transducers in a separate handset connected to the first unit by cable. It is intended to access public mobile telecommunication services over an air interface.

4 IMMUNITY CRITERIA To meet the requirements of this Standard the equipment under test (EUT), shall—

- (a) when subjected to test field strength level 1 (Clause 6.1) with interrupted carrier modulation as described in Figure 1, produce a SINAD equal to or greater than 20 dB during testing at 63 or more (approximately 80%) of the 78 test frequency and EUT channel combinations (3 AMPS channels \times 26 immunity test field frequencies);
- (b) when subjected to test field strength level 2 (Clause 6.1) with interrupted carrier modulation as described in Figure 1, produce a SINAD equal to or greater than 20 dB during testing at 69 or more (approximately 90%) of the 78 test frequency and EUT channel combinations (3 AMPS channels \times 26 immunity test field frequencies); and