AS 1417.1(Int)—2011
Expires 24 February 2013

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Interim Australian Standard®

Receiving antennas for radio and television in the VHF and UHF broadcast bands

Part 1: Design, manufacture and performance of outdoor terrestrial TV antennas

STANDARDS
Australia

This Interim Australian Standard® was prepared by Committee CT-002, Broadcasting and Related Services. It was approved on behalf of the Council of Standards Australia on 17 January 2011.
This Interim Standard was published on 24 February 2011.

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- Australian Chamber of Commerce and Industry
- Australian Communications and Media Authority
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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Interim Standard through their representation on the Committee.

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Receiving antennas for radio and television in the VHF and UHF broadcast bands

Part 1: Design, manufacture and performance of outdoor terrestrial TV antennas

Originally as AS CC8—1962.
Previous edition AS 1417.1—1987.
Third edition 2011.

Published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001, Australia

ISBN 978 0 7337 9782 8

PREFACE

This Interim Standard was prepared by the Standards Australia Committee CT-002, Broadcasting and Related Services, to supersede AS 1417.1—1987 (in part) and AS 1417.2—1991.

This Interim Standard covers the design and manufacture of antenna for reception of digital terrestrial TV transmitted in the high VHF and UHF bands. It also covers measurement procedures that may be used to determine the performance of the antenna. This part is aimed specifically at manufacturers to create products suitable for the Australian environment.

A possible future Part 2 is intended for the installation aspects of a receiving system, including the design of the mounting hardware (including masts and towers) used to support the antenna and advice on the selection of an appropriate antenna for particular reception conditions. Part 2 is intended to be aimed specifically at installers to select appropriate antenna types and mounting hardware for a particular site.

The term 'informative' has been used in this Standard to define the application of the appendix to which it applies. An 'informative' appendix is only for information and guidance.

Standards Australia invites comments on this Interim Standard from individuals and organizations concerned with this subject. The closing date for comment on this Interim Standard is three months after publication. After the closing date for comment, the Committee will review this Interim Standard in the light of public comment with the intention of publishing as an Australian Standard shortly after the closing date. Although the expiry of this Interim Standard is two years after publication, it will be withdrawn on publication of the Australian Standard. Please forward all comments to the Project Manager of Committee CT-002.

Attention is drawn to the fact that this document is an Interim Australian Standard only and should be regarded as a development Standard and liable to future alteration.

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Interim Standard specifies the minimum electrical performance, aspects of mechanical design and methods of measurement of antennas for reception of terrestrial digital television broadcasts.

Requirements for analogue television transmissions are not considered in this Interim Standard. Analogue television transmissions in Australia are in the process of being switched off, with this process to be completed by 2013.

NOTE: This Interim Standard only considers receiving antennas suitable for Australian digital terrestrial television services that operate in VHF Band III and UHF Bands IV and V.

Band I or Band II reception capabilities are not required for Australian digital television, and Band I low VHF reception capability for analogue channels 0 to 2 should not be included, because this may be detrimental to the required performance for digital television channels.

To provide reliable uniformity to antenna performance specifications and as an indication of suitability of an antenna for reception of DVB-T signals, information on methods of measurement is given, including aspects of COFDM measurement such as bit error ratio (BER) and modulation error ratio (MER).

NOTE: Appendix A gives details of infield measurements and some practical examples of expected results for a range of signal conditions and different antenna types.

A possible future Part 2 of this Interim Standard will cover mechanical aspects of the installation of outdoor television receiving antennas.

For details of how the antenna output should be distributed to multiple outlets such as required in multi-unit-dwellings, refer to AS/NZS 1367.

NOTE: Additional ancillary requirements may include (integral) filters for rejection of interference from devices using adjacent spectrum such as LTE mobile telephony and 'white space' devices (for wireless computer connections).

1.2 APPLICATION

This Interim Standard is applicable to outdoor television antennas capable of receiving Australian digital television signals. These antennas may include various types such as Yagi, phased-array panels or log-periodic designs that can operate over VHF Band III, UHF Band IV or UHF Band V frequency bands.

Not directly considered are specific design features, such as corner reflector rear directors, horizontal or vertical stacking to improve directivity, or length to diameter (L/D) ratios.