AS 4933:2015

Australian STANDARD

Digital television—Requirements for receivers for VHF/UHF DVB-T television broadcasts including ancillary services

STANDARDS Australia

This Australian Standard® was prepared by Committee CT-002, Broadcasting and Related Services. It was approved on behalf of the Council of Standards Australia on 4 November 2014.
This Standard was published on 23 September 2015.

The following are represented on Committee CT-002:

- Australian Broadcasting Corporation
- Australian Communications and Media Authority
- Australian Digital and Telecommunications Industry Association
- Australian Industry Group
- Australian Information Industry Association
- Australian Subscription Television and Radio Association
- CHOICE
- Commercial Radio Australia
- Community Broadcasting Association of Australia
- Consumer Electronics Suppliers Association
- Department of Communications (Australian Government)
- Free TV Australia
- Media Access Australia
- Special Broadcasting Service

This Standard was issued in draft form for comment as DR AS 4933.1.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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Originated as AS 4933.1—2000.
Previous edition AS 4933.1—2010.
Revised and redesignated as AS 4933:2015.

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

ISBN 978 1 76035 247 9

PREFACE

This Standard was prepared by the Australian members of the Joint Standards Australia/Standards New Zealand Committee CT-002, Broadcasting and Related Services, to supersede AS 4933.1—2010, *Digital television—Requirements for receivers*, Part 1: *VHF/UHF DVB-T television broadcasts*.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide television receiver manufacturers with the technical specifications and requirements relating to digital television receivers intended to be used in Australia to receive and decode free-to-air DVB-T transmissions that comply with the Australian Digital Terrestrial Television Broadcasting (DTTB) transmission Standard AS 4599.1, *Digital television—Terrestrial broadcasting,* Part 1: *Characteristics of digital terrestrial television transmissions*. This Standard does not cover DVB-T2.

When this Standard was originally conceived, the intention was to develop a digital television receiver Standard in several parts. The first part, AS 4933.1, provided technical specifications and requirements for open market receivers suitable for free-to-air broadcasters' transmissions in Australia. Additional parts were intended to cover cable and satellite delivered subscription television services. However, the subscription television operators have chosen to keep their receiver requirements private, consequently removing the need for separate parts and the need for this Standard to be designated Part 1.

This Standard has been revised to provide manufacturers with additional essential requirements, including the need to decode MPEG-4 video and HE AAC audio. This revision also indicates future requirements such as HEVC. Also included are requirements for ancillary features such as IPTV and HbbTV services.

Current requirements and specifications relating to antenna input connections and other interconnect features, both digital and analog, are included in this Standard. These are significant improvements, changes and additions to the interconnection requirements and extend beyond AS 4542.1 *Consumer television interfaces*, Part 1: *PAL RF*, which mainly dealt with analog PAL requirements.

This Standard does not specify the final presentation characteristics of picture (display) and sound or associated services, or requirements for Stereoscopic 3D or 4K UHDTV.

Interoperability issues for DVB-S, DVB-C and datacasting are not addressed in this Standard.

The terms 'normative' and 'informative' are used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance. Advisory information is also included in the main body of this Standard.

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FOREWORD

Digital Terrestrial Television Broadcasting (DTTB) officially began in Australia on 1 January 2001 and replaced the previous PAL-B analog transmissions by the end of December 2013. The transmissions are based on the DVB-T system, however, it should be noted that the international DVB Standards and related ETSI, IEC, ISO and ITU-R documents provide for a range of operational systems.

Many other digital television systems around the world are based on pay satellite and cable systems. In such cases the compatibility of the transmission and reception equipment within each system is generally under the control of a single system operator. These are known as ‘vertical’ markets.

In Australia, in contrast, the digital terrestrial television broadcasting system is not under the control of a single operator. Rather, there are multiple free-to-air services, and domestic digital television receiver/decoders produced by many different manufacturers are available through a wide range of retail outlets. This is known as a ‘retail’ or ‘horizontal’ market.

Consumers in Australia expect to have access to a wide choice of receiving equipment, ranging from fully integrated receivers with inbuilt displays to modular set-top box receivers designed to be connected to a separate display and sound reproduction system. In addition, the various broadcasters in Australia use different brands of encoding and transmission equipment. Manufacturers who are supplying the Australian market are obliged, therefore, to ensure that their equipment will operate satisfactorily under the relevant Australian conditions.

This Standard aims to assist manufacturers by providing the information necessary for them to ensure that any digital terrestrial television receiving equipment made for the Australian system will operate satisfactorily to receive Australian digital terrestrial television broadcast transmissions.

A separate Australian Standard, AS 4599.1, *Digital television—Terrestial broadcasting*, Part 1: *Characteristics of digital terrestrial television transmissions*, provides information specific to the transmission aspects of the Australian adaptation of the relevant ETSI/DVB-T Standards.

Some receiver features are defined in this document as essential—that is, their inclusion is mandatory. Without them the equipment will not comply with this Standard. Whether features nominated as recommended are included will be a marketing decision by the manufacturer, but some optional features, if provided, are subject to certain requirements. These requirements are specified in this Standard.

Section 2 provides a summary of the minimum requirements for DTTB receivers intended for use in the Australian environment.

NOTE: Manufacturers should note that, because DTTB is a rapidly evolving technological environment, this Standard may require revisions and additions from time to time.

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S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Standard specifies the requirements for equipment to be used in Australia for the reception of free-to-air (FTA) terrestrial VHF/UHF DVB-T broadcast television and allow access to all program services offered. In addition, this Standard covers a number of optional features that manufacturers may provide. These optional features include PVR capabilities and other extended functionality such as HbbTV.

The requirements for digital television receivers set out in this Standard are consistent with the relevant Australian broadcast regulatory requirements. The international DVB Standards and related ETSI, ISO/IEC and ITU-R documents provide for various implementation systems. This Standard specifies the choices available in Australia and references Australian adaptations of these international Standards where appropriate.

Section 2 sets out the minimum requirements for receivers if they are to operate satisfactorily in the Australian environment to receive Australian FTA terrestrial VHF/UHF DVB-T broadcasts.

Section 3 provides a comprehensive list of receiver specifications and features, indicating whether they are essential or optional, and if optional, whether they are recommended or subject to certain requirements, or both. The optional features referred to in this Standard include interactive middleware and audio decoding choices, such as surround and multilingual sound, as well as interfaces for ancillary equipment.

This Standard does not specify the final presentation characteristics of picture (display) and sound, or associated services or requirements for Stereoscopic 3D or 4K UHDTV.

This Standard does not cover the requirements for subscription television receivers.

Attention is drawn to the following Appendices:

(a) Appendix B (normative) specifies requirements and measurement methods for the RF performance of the receiver's tuner.

(b) Appendix G (informative) provides further guidance on decoding and display of Closed Captions (CCs).

(c) Appendix K (normative) provides requirements and further guidance on extended functionality services such as HbbTV.

1.2 GENERAL

The primary purpose of this Standard is to identify the minimum essential requirements for equipment intended to receive, demodulate and decode television broadcasts that comply with the Australian implementation of DVB-T, and referenced ISO/IEC and ETSI Standards. However, because there is a range of optional features that receiver manufacturers may provide, additional information and recommendations are provided to clarify the preferred or required (as applicable) operation or facility in such cases.