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Digital television — Terrestrial broadcasting — Characteristics of digital terrestrial television transmissions

AS 4599:2025

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Australian Broadcasting Corporation
Australian Digital & Telecommunications Industry Association Inc
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Australian Information Industry Association
Australian Subscription Television and Radio Association
Community Broadcasting Association of Australia
Consumer Electronics Suppliers Association
Engineers Australia
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Preface

This Standard was prepared by the Standards Australia Committee CT-002, Broadcasting and Related Services, to supersede AS 4599.1:2015.

This document specifies requirements for digital terrestrial television transmissions, including the video, audio, data and closed captions coding, the characteristics of the transport stream, the channel coding, and the modulation system to be used. This document applies to digital terrestrial television services in the bands 174 MHz–230 MHz and 526 MHz–694 MHz.

This document is part of a group of terrestrial television Standards, including:

(a) AS 4933, *Digital television—Requirements for receivers for VHF/UHF DVB-T television broadcasts including ancillary services*

(b) AS 5362, *Digital television — Requirements for receivers for VHF/UHF DVB-T2 television broadcasts including ancillary services*

(c) AS 1367, *Coaxial cable and optical fibre systems for the RF distribution of digital television, radio and in-house analogue television signals in single and multiple dwelling installations*

(d) AS 1417, *Receiving antennas for radio and television in the VHF and UHF broadcast bands — Design, manufacture and performance of outdoor terrestrial television antennas*

The major changes in this edition are as follows:

(i) Removal of references to New Zealand.

(ii) Inclusion of the second-generation digital modulation scheme known as DVB-T2.

(iii) Expansion of service profiles to include high efficiency video coding (HEVC), Next Generation Audio AC-4 and timed text markup language (TTML) subtitling systems.

(iv) Removal of requirements for over-the-air system software update capability, conditional access systems and data transmissions using the MHEG-5 broadcast profile.

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The terms “normative” and “informative” are used in Standards to define the application of the appendices to which they apply. A “normative” appendix is an integral part of a Standard, whereas an “informative” appendix is only for information and guidance.

Contents

Introduction

This document was prepared in conjunction with the ACMA and the television broadcasting industry to ensure consistency of current and planned future terrestrial broadcasting transmissions, and to enable the design of digital transmission equipment and television receivers. The ACMA has published a set of digital terrestrial television planning parameters in the *Technical Planning Guidelines* and *The Digital Terrestrial Television Broadcasting Planning Handbook*, which references this document.

Australia commenced digital terrestrial television transmissions in 2001 and switched off analogue terrestrial transmissions at the end of 2013. After analogue switch off, digital services were re-stacked to channels below 694 MHz, maximising the efficient utilization of the remaining TV spectrum following the reallocation of 700 MHz for wireless broadband. Previous editions of this standard described the transmissions during this period.

This edition incorporates new encoding technology and modulation methodologies to facilitate broadcasting services into the future, to account for possible changes in the technological, regulatory and commercial broadcasting environments.

In this new edition of AS 4599, technology updates are taken into account, including the second-generation digital modulation scheme known as DVB-T2, and the expansion of service profiles to include high efficiency video coding (HEVC), Next Generation Audio AC-4 and timed text markup language (TTML) subtitling systems.

This document includes consideration of revisions to standards related to terrestrial television broadcasting. The Australian implementation of the DVB-T and DVB-T2 systems use the technical content of relevant ETSI Standards.

The development of standards within the EBU DVB project is a dynamic process. Reviews of existing and development of new ETSI standards are underway at DVB. End users of this document are encouraged to keep up to date with DVB reviews by visiting the DVB website (http://www.dvb.org).

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Section 1 Scope and general

1.1 Scope

This document specifies requirements for digital terrestrial television transmissions, including the video, audio, data and closed captions coding, the characteristics of the transport stream, the channel coding, and the modulation system to be used. This document applies to digital terrestrial television services in the bands 174 MHz–230 MHz and 526 MHz–694 MHz.

This document provides specifications for transmission of free-to-air (FTA) terrestrial VHF, UHF DVB-T and DVB-T2 used in Australia for the reception of broadcast television by receivers conforming to AS 4933 (DVB-T) in conjunction with AS 5362 (DVB-T2).

1.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS/NZS 2632.1, *Codes for the representation of names of countries and their subdivisions, Part 1: Country codes*

AS/NZS 2632.2, *Codes for the representation of names of countries and their subdivisions, Part 2: Country subdivision codes*

ISO/IEC 8859-1, *Information technology — 8-bit single-byte coded graphic character sets — Part 1: Latin alphabet No. 1*

ISO/IEC 11172-3, *Information technology — Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s — Part 3: Audio*

ISO/IEC 13818-2, *Information technology — Generic coding of moving pictures and associated audio information — Part 2: Video*

ISO/IEC 13818-3, *Information technology — Generic coding of moving pictures and associated audio information — Part 3: Audio*

ISO/IEC 13818-6, *Information technology — Generic coding of moving pictures and associated audio information — Part 6: Extensions for DSM-CC*

ISO/IEC 14496-3, *Information technology — Coding of audio-visual objects — Part 3: Audio*

ISO/IEC 14496-10, *Information technology — Coding of audio-visual objects — Part 10: Advanced video coding*

ISO/IEC 23008-2, *Information technology — High efficiency coding and media delivery in heterogeneous environments — Part 2: High efficiency coding*

ETSI EN 300 468 V1.17.1 (2022-10), *Digital Video Broadcasting (DVB); Specification for Service Information (SI) in DVB systems*

ETSI EN 300 472 V1.4.1 (2017-01), *Digital Video Broadcasting (DVB); Specification for conveying ITU-R System B Teletext in DVB bitstreams*

ETSI EN 300 706 V1.2.1 (2003-04), *Enhanced Teletext specification*