

CTA Bulletin

**Recommended Practice for Selection and
Presentation of DTV Audio**

CTA-CEB21-A

October 2016

**Consumer
Technology
Association**

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(Formulated under the cognizance of the CTA **R4.3 Television Data Systems Subcommittee**.)

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FOREWORD

This bulletin was developed under the auspices of the Consumer Technology Association (CTA) R4.3 TV Data Systems Subcommittee.

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1 Scope

CTA-CEB21-A recommends the actions ATSC receivers with a single audio decoder should take in the presence or absence of AC-3 audio metadata carried in ATSC standards-based broadcasts. These services are defined in the ATSC references shown in the References section. CTA-CEB21-A includes recommendations and suggestions on how these receiver actions should interact with user selections via different implementation choices. CTA-CEB21-A is in no way intended to prohibit consumer device manufacturers from including additional features, and CTA-CEB21-A should not be interpreted as recommending an upper limit to device performance.

CTA-CEB21-A provides recommendations to manufacturers to facilitate user setup of audio features in the receiver without professional assistance. This bulletin provides guidance in the following areas for the reasons listed below:

- One purpose of the bulletin is to describe recommended receiver behavior in the presence of the minimum required audio metadata described by ATSC A/53.
- Another purpose of the bulletin is to describe recommended receiver behavior in the presence of additional optional audio metadata described by ATSC A/53.

This document is organized by first providing descriptions of the key metadata elements and the structural locations in the MPEG-2 Transport Stream (table sections, descriptors, etc.). The recommendations for using this information along with user settings to control audio stream selection are then provided.

Manufacturers are encouraged to develop and deploy updated firmware when practical to follow the recommendations of this bulletin.

2 General

2.1 References

2.1.1 Informative References

The following references contain provisions, which, through reference in this text, constitute informative provisions of this standard. At the time of publication, the editions indicated below were valid. All documents are subject to revision, and parties to agreement based on this standard are encouraged to investigate the possibility of applying the most recent editions of the documents listed below.

2.1.2 Informative Reference List

- [1] ATSC A/52:2015, Digital Audio Compression (AC-3, E-AC3) Standard, Advanced Television Systems Committee.
- [2] ATSC A/53, ATSC Digital Television Standard, Parts 1: 2013, Part 2: 2011, Part 3: 2013, Part 4: 2009, Part 5: 2014, Part 6: 2013, Advanced Television Systems Committee.
- [3] ATSC A/54A, Guide to the Use of the ATSC Digital Television Standard, with Corrigendum No. 1, December 2003, Corrigendum No. 1 dated 20 December 2006, Advanced Television Systems Committee. (Withdrawn, 11 Jan 2015.)
- [4] ATSC A/65:2013, Program and System Information Protocol for Terrestrial Broadcast and Cable, 2013, Advanced Television Systems Committee.
- [5] ATSC A/69:2009, Program and System Information Protocol Implementation Guidelines for Broadcasters, Annex I, 2009, Advanced Television Systems Committee.
- [6] ATSC A/79, Conversion of ATSC Signals for Distribution to NTSC Viewers, December 2008, Advanced Television Systems Committee
- [7] CTA-2009-B, 2010, Receiver Performance Specification for Public Alert Receivers

- [8] CTA-CEB12-B R 2015, PSIP Recommended Practice, 2010, Consumer Technology Association.
- [9] ETSI TS-101154 V1.11.1, Digital Video Broadcasting (DVB); Specification for the use of Video and Audio Coding in Broadcasting Applications based on the MPEG-2 Transport Stream, 2012.
- [10] ANSI/SCTE 54 2015, Digital Video Service Multiplex and Transport System Standard for Cable Television, Society of Cable Telecommunications Engineers.
- [11] ISO 639-2, “Codes for the representation of Names of Languages – Part 2: Alpha-3 code, “ as maintained by the ISO 639/Joint Advisory Committee (ISO 639/JAC), <http://www.loc.gov/standards/iso639-2/iso639jac.html>
- [12] ISO/IEC IS 13818-1:2015, “Information technology – Generic coding of moving pictures and associated audio information: Systems”, 2015.
- [13] ANSI/SCTE 194-1 (2013) DTS-HD Audio System – Part 1: Coding Constraints for Cable Television
- [14] ANSI/SCTE 194-2 (2014) DTS-HD Audio System – Part 2: Constraints for Carriage over MPEG-2 Transport
- [15] SCTE 193-1 (2014) MPEG-4 AAC Family Audio System – Part 1 Coding Constraints for Cable Television
- [16] SCTE 193-2 (2014) MPEG-4 AAC Family Audio System – Part 2 Constraints for Carriage over MPEG-2 Transport

2.1.3 Informative Reference Acquisition

ATSC Standards

- Advanced Television Systems Committee (ATSC), 1766 K Street N.W., Suite 200, Washington, DC 20006; Phone 202-872-9160; Fax 202-872-9161; Internet <http://www.atsc.org/cms/index.php/standards/published-standards>

CTA Standards

- Global Engineering Documents, World Headquarters, 15 Inverness Way East, Englewood, CO USA 80112-5776; Phone 800-854-7179; Fax 303-397-2740; Internet <http://global.ihs.com>; Email: global@ihs.com

ETSI

- European Telecommunications Standards Institute, 650, route des Lucioles, 06921 Sophia-Antipolis Cedex, France; Phone +33 (0)4 92 94 42 00; Fax +33 (0)4 93 65 47 16; Internet <http://www.etsi.org>

SCTE Standards

- Global Engineering Documents, World Headquarters, 15 Inverness Way East, Englewood, CO USA 80112-5776; Phone 800-854-7179; Fax 303-397-2740; Internet <http://www.scte.org/standards>

2.2 Definitions

For the purposes of CTA-CEB21-A, the following definitions apply.

Audio Stream — The Transport Stream packets carrying the elementary stream which contains audio essence.

Complete Main — An audio service containing all audio components (dialog, music, and effects) for the program.

Described Video — Described Video is the Canadian name for audio consisting of narrated descriptions of a television program’s key visual elements. Such streams are properly signaled as Visually Impaired (VI) streams.