CTA Bulletin

Recommended Practice for Audio Accessibility of Audiovisual Devices

CTA-CEB27

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(Formulated under the cognizance of the CTA **R4 Video Systems Committee**.)

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Foreword

This document was developed by the Consumer Technology Association's R4WG19 Accessibility Working Group.

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Recommended Practice for Audio Accessibility of Audiovisual Devices

1 Scope

This bulletin recommends how audio interfaces of video consumer electronics should be provided and utilized to enhance accessibility and compatibility with external listening equipment.

2 Revision History

This is a new bulletin; therefore there is no revision history.

3 References

3.1 Informative References

The following documents contain provisions that, through reference in this text, constitute informative provisions of this bulletin. At the time of publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this document are encouraged to investigate the possibility of applying the most recent editions of the documents listed here.

3.1.1 Informative Reference List

- ATSC A/53 P5, ATSC Digital Television Standard: Part 5- ATSC AC-3 Audio System Characteristics, 6 July 2010
- 2. ATSC A/85:2011, Techniques for Establishing and Maintaining Audio Loudness for Digital Television, 25 July 2011
- 3. Twenty First Century Communications and Video Accessibility Act (CVAA), 08 October 2010
- 4. IEC-60603-11 and EIA RS-453
 - a. 3.5 mm Three Conductor Jack ("headphone" jack)
- 5. ITU-R BS.1770 BS.1770-3, Algorithms to Measure Audio Programme Loudness and True-peak Audio Level, August 2012

3.1.2 Informative Reference Acquisition

- ATSC, 1776 K Street NW 8th Floor, Washington, DC 20006-2304, 1-202-872-9160, http://www.atsc.org/cms/index.php/standards/recommended-practices/185-a85-techniques-for-establishing-and-maintaining-audio-loudness-for-digital-television
- CTA 708-D, Consumer Electronics Association, 1919 S. Eads St., Arlington, VA 22202, 866-858-1555 or 703-907-7600, http://www.ce.org/Standards/Standards-Listings/R4-3-Television-Data-Systems-Subcommittee/CTA-708-D.aspx (Accessed March 26, 2013)
- CTA "Listening for a Lifetime" pamphlet, Consumer Electronics Association, 1919
 Eads St., Arlington, VA 22202, 866-858-1555 or 703-907-7600, http://www.ce.org/CorporateSite/files/7f/7f14e393-75d2-4e93-92f6-9d2167e02897.pdf (Accessed August 16, 2012)