

# CTA Standard

**Advanced Audio Extensions**

**CTA-861.2**

**(Formerly CEA-861.2)**

**August 2015**



**Consumer  
Technology  
Association**

## NOTICE

Consumer Technology Association (CTA)<sup>TM</sup> Standards, Bulletins and other technical publications are designed to serve the public interest through eliminating misunderstandings between manufacturers and purchasers, facilitating interchangeability and improvement of products, and assisting the purchaser in selecting and obtaining with minimum delay the proper product for his particular need. Existence of such Standards, Bulletins and other technical publications shall not in any respect preclude any member or nonmember of the Consumer Technology Association from manufacturing or selling products not conforming to such Standards, Bulletins or other technical publications, nor shall the existence of such Standards, Bulletins and other technical publications preclude their voluntary use by those other than Consumer Technology Association members, whether the standard is to be used either domestically or internationally.

Standards, Bulletins and other technical publications are adopted by the Consumer Technology Association in accordance with the American National Standards Institute (ANSI) patent policy. By such action, the Consumer Technology Association does not assume any liability to any patent owner, nor does it assume any obligation whatever to parties adopting the Standard, Bulletin or other technical publication.

This document does not purport to address all safety problems associated with its use or all applicable regulatory requirements. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before its use.

This document is copyrighted by the Consumer Technology Association and may not be reproduced, in whole or part, without written permission. Federal copyright law prohibits unauthorized reproduction of this document by any means. Organizations may obtain permission to reproduce a limited number of copies by entering into a license agreement. Requests to reproduce text, data, charts, figures or other material should be made to the Consumer Technology Association.

(Formulated under the cognizance of the CTA **R4.8 DTV Interface Subcommittee**.)

Published by  
©CONSUMER TECHNOLOGY ASSOCIATION 2015  
Technology & Standards Department  
[www.CTA.tech](http://www.CTA.tech)

All rights reserved

**FOREWORD**

This standard was developed by the Consumer Electronics Association's R4.8 DTV Interface Subcommittee.

(This page intentionally left blank.)

## CONTENTS

<b>1 Scope.....</b>	<b>5</b>
<b>2 References.....</b>	<b>5</b>
<b>2.1 Normative References.....</b>	<b>5</b>
2.1.1 Normative Reference List .....	5
2.1.2 Normative Reference Acquisition .....	5
<b>2.2 Informative References.....</b>	<b>6</b>
2.2.1 Informative Reference List.....	6
2.2.2 Informative Document Acquisition .....	6
<b>2.3 Definitions .....</b>	<b>6</b>
<b>2.4 Compliance Notation.....</b>	<b>6</b>
<b>2.5 Hexadecimal Notation .....</b>	<b>6</b>
<b>2.6 Bit Naming Conventions .....</b>	<b>6</b>
<b>2.7 Symbols and Abbreviations .....</b>	<b>6</b>
<b>3 Room configuration .....</b>	<b>7</b>
<b>3.1 Speaker Location Names.....</b>	<b>7</b>
<b>3.2 Room Coordinate System.....</b>	<b>8</b>
<b>3.3 Room Configuration Descriptor (RCD).....</b>	<b>9</b>
3.3.1 Room Configuration Descriptor Data Block .....	9
<b>3.4 Speaker Location Descriptor.....</b>	<b>10</b>
3.4.1 Speaker Location Descriptor Data Block .....	11
<b>3.5 Enhanced Audio Infoframe.....</b>	<b>11</b>
<b>3.6 Delivery According to the Speaker Mask.....</b>	<b>12</b>
<b>3.7 Delivery by Channel Index.....</b>	<b>13</b>
<b>3.8 Additional Audio InfoFrame Information.....</b>	<b>14</b>
<b>3.9 Data Block Tag Codes.....</b>	<b>14</b>
<b>4 Additional Audio Format Codes .....</b>	<b>15</b>
<b>Annex A Change in Audio Speaker Names from CEA-861-F to CEA-861.2 (Informative) .....</b>	<b>17</b>

## TABLES

<b>Table 1 Speaker Location Names (Table 30)</b> .....	<b>8</b>
<b>Table 2 Coordinate Value Format</b> .....	<b>8</b>
<b>Table 4 Speaker Location Descriptor</b> .....	<b>10</b>
<b>Table 5 Speaker Location Descriptor Data Block</b> .....	<b>11</b>
<b>Table 6 Audio InfoFrame Data Byte 4 (Table 31)</b> .....	<b>11</b>
<b>Table 7 Audio InfoFrame for RCD audio delivery</b> .....	<b>12</b>
<b>Table 8 Audio InfoFrame for Channel Index based audio delivery</b> .....	<b>14</b>
<b>Table 9 CEA Data Block Tag Codes (Table 46)</b> .....	<b>14</b>
<b>Table 10 Additional Audio Format Code Extension Values (Data Byte 3) (Table 29)</b> .....	<b>15</b>
<b>Table 11 CEA Short Audio Descriptor for Audio Extension Type Code 11 (MPEG-H 3D Audio)</b> .....	<b>15</b>
<b>Table 12 CEA Short Audio Descriptor for Audio Extension Type Code 12 (AC-4)</b> .....	<b>15</b>
<b>Table 13 CEA Short Audio Descriptor for Audio Extension Type Code 13 (L-PCM 3D Audio)</b> .....	<b>15</b>

## Advanced Audio Extensions

### 1 Scope

This standard specifies High Channel Count Audio and Object Based Audio extensions to CEA-861-F [1] using an updated Audio InfoFrame and an additional EDID CEA data block.

The requirements of this standard are in addition to and complement CEA-861-F [1]. All devices compliant to CEA-861.2 shall also comply with CEA-861-F [1], except that this standard modifies Table 31 and deprecates and replaces Tables 29, 30 and 46 of CEA-861-F [1].

### 2 References

#### 2.1 Normative References

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

##### 2.1.1 Normative Reference List

1. CEA-861-F, A DTV Profile for Uncompressed High Speed Digital Interfaces, May 2014
2. ISO/IEC 62574, Audio, video and multimedia systems - General channel assignment of multichannel audio
3. ISO/IEC 23008-3, Information technology -- High efficiency coding and media delivery in heterogeneous environments -- Part 3: 3D audio
4. ISO/IEC 60958 Digital audio interface
5. ETSI TS 103 190 V1.1.1 (2014-04) Digital Audio Compression (AC-4) Standard, Internet:
6. IEC 61937-13: Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 – Part 13: MPEG-H 3D Audio
7. IEC 61937-14: Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 – Part 14: Non-linear PCM bitstreams according to the AC-4 format
8. IEC 60958-3 Digital Audio Interface - Part 3: Consumer Applications, First Edition, 1999
9. VESA E-EDID™ Standard, VESA Enhanced Extended Display Identification Data Standard, Release A, Revision 1, February 9, 2000

##### 2.1.2 Normative Reference Acquisition

###### ANSI/CEA 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](mailto:global@ihs.com)

###### ISO/IEC Standards

- International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland. Telephone +41 22 919 02 11; Telefax +41 22 919 03 00; Web: [www.iec.ch](http://www.iec.ch); Email: [inmail@iec.ch](mailto:inmail@iec.ch)

###### 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>

###### VESA Standards