

# CEA Standard

Audio Format Extensions

CEA-861.1

August 2010



**CEA**<sup>®</sup>  
Consumer Electronics Association

[www.CE.org](http://www.CE.org)

## NOTICE

Consumer Electronics Association (CEA®) 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 CEA 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 CEA members, whether the standard is to be used either domestically or internationally.

Standards, Bulletins and other technical publications are adopted by CEA in accordance with the American National Standards Institute (ANSI) patent policy. By such action, CEA 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 CEA Standard is considered to have International Standardization implication, but the International Electrotechnical Commission activity has not progressed to the point where a valid comparison between the CEA Standard and the IEC document can be made.

This Standard 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 Standard 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 Electronics Association (CEA®) 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 CEA.

(Formulated under the cognizance of the CEA's **R4.8 DTV Interface Subcommittee**.)

Published by  
©CONSUMER ELECTRONICS ASSOCIATION 2011  
Technology & Standards Department  
[www.CE.org](http://www.CE.org)

All rights reserved

This is a preview of "CEA 861.1-2010". [Click here to purchase the full version from the ANSI store.](#)

## **FOREWORD**

This standard was developed under the auspices of the Consumer Electronics Association (CEA) R4.8 DTV Interface Subcommittee.

## CONTENTS

|  |          |
|--|----------|
| <b>1 Scope</b> .....   | <b>1</b> |
| <b>2 General</b> .....   | <b>1</b> |
| <b>2.1 References</b> .....  | <b>1</b> |
| <b>2.1.1 Normative References</b> .....                              | <b>1</b> |
| <b>2.1.1.1 Normative Reference List</b> .....                        | <b>1</b> |
| <b>2.1.1.2 Normative Reference Acquisition Lists</b> .....           | <b>1</b> |
| <b>2.1.2 Informative References</b> .....                            | <b>2</b> |
| <b>2.1.2.1 Informative Reference List</b> .....                      | <b>2</b> |
| <b>2.1.2.2 Informative Reference Acquisition</b> .....               | <b>2</b> |
| <b>2.2 Definitions</b> .....   | <b>2</b> |
| <b>2.3 Acronyms, Symbols, and Abbreviations</b> .....                | <b>2</b> |
| <b>2.4 Compliance Notation</b> .....                                 | <b>2</b> |
| <b>2.5 Bit Naming Conventions</b> .....                              | <b>2</b> |
| <b>2.6 Hexadecimal Notation</b> .....                                | <b>2</b> |
| <b>3 Additional Audio Format Code Values</b> .....                   | <b>3</b> |
| <b>4 Additional data fields in CEA Short Audio Descriptors</b> ..... | <b>4</b> |

## Tables

|  |          |
|--|----------|
| <b>Table 1 Additional Audio Format Code Extension Values (Data Byte 3)</b> .....               | <b>3</b> |
| <b>Table 2 CEA Short Audio Descriptor for Audio Coding Extension Type Codes 4 to 6</b> .....   | <b>4</b> |
| <b>Table 3 CEA Short Audio Descriptor for Audio Coding Extension Type Codes 8 and 10</b> ..... | <b>4</b> |

(This page intentionally left blank.)

This is a preview of "CEA 861.1-2010". [Click here to purchase the full version from the ANSI store.](#)

## Audio Format Extensions

### 1 Scope

This standard specifies additional Audio Format Code Extension values for Audio InfoFrames and CEA Short Audio Descriptors using previously reserved codes listed in Table 26 of CEA-861-E [1]. This standard also defines additional data fields in the previously defined future bits of Data Byte 3 of CEA Short Audio Descriptors, when the Audio Format Code bit-field in Data Byte 1 is set to 15. Recommendations surrounding audio format extensions are also provided.

The requirements of this standard are in addition to and complement CEA-861-E [1]; all devices compliant with CEA-861.1 shall also comply with CEA-861-E [1] except that this standard deprecates and replaces Table 26 of CEA-861-E.

### 2 General

#### 2.1 References

##### 2.1.1 Normative References

The following references contain provisions, which, through reference in this text, constitute normative 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.

##### 2.1.1.1 Normative Reference List

1. CEA-861-E, A DTV Profile for Uncompressed High Speed Digital Interfaces, March 2008
2. ISO/IEC 14496-3:2009, Information Technology – Coding of audio-visual objects – Part 3: Audio
3. ISO/IEC 23003-1:2007 Information technology -- MPEG audio technologies -- Part 1: MPEG Surround with corrigenda 1 (February 2008)
4. IEC 61937-11 Digital audio - Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 - Part 11: MPEG-4 AAC and its extensions in LATM/LOAS
5. IEC 61937-12:2010, DIGITAL AUDIO – INTERFACE FOR NON-LINEAR PCM ENCODED AUDIO BITSTREAMS APPLYING IEC 60958 – Part 12: Non-linear PCM bitstreams according to the DRA formats
6. GB/T 22726-2008, Specification for multichannel digital audio coding technology

##### 2.1.1.2 Normative Reference Acquisition Lists

###### CEA Standards

- Global Engineering Documents, World Headquarters, 15 Inverness Way East, Englewood, CO USA 80112-5776; Phone +1 800-854-7179; Fax +1 303-397-2740; Email [global@iht.com](mailto:global@iht.com); Internet <http://www.global.iht.com>

###### IEC Standards

- International Electrotechnical Commission, 3, rue de Varembe, 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)

###### GB/T Standards

- Standardization Administration of the People's Republic of China (SAC), No.9 Madian Donglu Haidian District Beijing 100088, china; Phone +86 10 8226 2609; Fax +86 10 8226 0684; Internet <http://www.sac.gov.cn/>; E-mail [webmaster@sac.gov.cn](mailto:webmaster@sac.gov.cn)