IEC 62680-1-7

Edition 1.0 2019-09

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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## Universal serial bus interfaces for data and power – Part 1-7: Common components – USB Audio 3.0 device class definition data formats

## Interfaces de bus universel en série pour les données et l'alimentation électrique – Partie 1-7: Composants communs – Définition de classes de dispositifs USB Audio 3.0 pour formats de données



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# UNIVERSAL SERIAL BUS INTERFACES FOR DATA AND POWER –

## Part 1-7: Common components – USB Audio 3.0 device class definition data formats

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The text of this International Standard is based on the following documents:

| CDV | Report on voting |
|---|---|
| 100/3159/CDV | 100/3229/RVC |

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

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# INTRODUCTION

The IEC 62680 series is based on a series of specifications that were originally developed by the USB Implementers Forum (USB-IF). These specifications were submitted to the IEC under the auspices of a special agreement between the IEC and the USB-IF.

This standard is the USB-IF publication USB Device Class Definition for Audio Data Formats Release 3.0.

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# UNIVERSAL SERIAL BUS
# DEVICE CLASS DEFINITION
# FOR
# AUDIO DATA FORMATS

**Release 3.0**

**September 22, 2016**

## SCOPE OF THIS RELEASE

This document is the Release 3.0 of this device class definition.

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## REVISION HISTORY

| Revision | Date | Filename | Description |
|---|---|---|---|
| 1.0 | Mar. 18, 98 | Frmts10.pdf | Release 1.0 |
| 2.0 | May. 31, 06 | Frmts20 final.pdf | Release 2.0 |
| 3.0 | Sep. 22, 16 | Frmts30.pdf | Release 3.0 |

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# 1 INTRODUCTION

The intention of this document is to describe in detail all the Audio Data Formats that are supported by the Audio Device Class. This document is considered an integral part of *the Audio Device Class Specification*, although subsequent revisions of this document are independent of the revision evolution of the main *USB Audio Specification*. This is to easily accommodate the addition of new Audio Data Formats without impeding the core *USB Audio Specification*.

## 1.1 RELATED DOCUMENTS

- *Universal Serial Bus Specification*, Revision 2.0 (referred to in this document as the *USB Specification*). In particular, see Chapter 5, “USB Data Flow Model” and Chapter 9, “USB Device Framework.”
- Universal Serial Bus Device Class Definition for Audio Devices (referred to in this document as USB Audio Device Class).
- Universal Serial Bus Device Class Definition for Terminal Types (referred to in this document as USB Audio Terminal Types).
- ANSI S1.11-1986 standard.
- MPEG-1 standard ISO/IEC 111172-3 1993. (available from http://www.iso.ch )
- MPEG-2 standard ISO/IEC 13818-3 Feb. 20, 1997. (available from http://www.iso.ch)
- Digital Audio Compression Standard (AC-3), ATSC A/52A Aug. 20, 2001. (available from http://www.atsc.org )
- Windows Media Audio (WMA) specification. (available from http://www.microsoft.com)
- ANSI/IEEE-754 floating-point standard.
- ISO/IEC 60958 International Standard: *Digital Audio Interface and Annexes.*
- ISO/IEC 61937 standard.
- ITU G.711 standard.
- ETSI Specification TS 102 114, “DTS Coherent Acoustics; Core and Extensions”. (Available from http://webapp.etsi.org/action%5CPU/20020827/ts_102114v010101p.pdf)

## 1.2 TERMS AND ABBREVIATIONS

This section defines terms used throughout this document. For additional terms that pertain to the Universal Serial Bus, see Chapter 2, “Terms and Abbreviations,” in the *USB Specification*.

| | |
|---|---|
| **AC-3** | Audio compression standard from Dolby Labs. |
| **Audio Slot** | A collection of audio subslots, each containing a PCM audio sample of a different physical audio channel, taken at the same moment in time. |
| **Audio Stream** | A concatenation of a potentially very large number of audio slots ordered according to ascending time. |
| **Audio Subslot** | Holds a single PCM audio sample. |
| **DTS** | Acronym for Digital Theater Systems. |
| **DVD** | Acronym for Digital Versatile Disc. |
| **Encoded Audio Bit Stream** | A concatenation of a potentially very large number of encoded audio frames, ordered according to ascending time. |