

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



**Universal serial bus interfaces for data and power –  
Part 1-5: Common components – USB Audio 3.0 device class definition**

**Interfaces de bus universel en série pour les données et l'alimentation  
électrique –  
Partie 1-5: Composants communs – Définition de classes de dispositifs USB  
Audio 3.0**



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IEC Central Office  
3, rue de Varembe  
CH-1211 Geneva 20  
Switzerland  
Tel.: +41 22 919 02 11  
[info@iec.ch](mailto:info@iec.ch)  
[www.iec.ch](http://www.iec.ch)

USB Implementers Forum, Inc.  
3855 S.W. 153rd Drive  
Beaverton, OR 97003  
United States of America  
Tel: +1 503-619-0426  
[admin@usb.org](mailto:admin@usb.org)  
[www.usb.org](http://www.usb.org)

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

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# UNIVERSAL SERIAL BUS DEVICE CLASS DEFINITION FOR AUDIO DEVICES

**Release 3.0**  
**September 22, 2016**

## SCOPE OF THIS RELEASE

This document is the Release 3.0 of this Device Class Definition.

## CONTRIBUTORS

Joe Scanlon	Advanced Micro Devices
Rhoads Hollowell	Apple Inc.
Girault Jones	Apple Inc.
Matthew X. Mora	Apple Inc.
Tzung-Dar Tsai	C-Media Electronics, Inc.
Brad Lambert	Cirrus Logic, Inc.
Dan Bogard	Conexant Systems, Inc.
Pete Burgers	DisplayLink (UK), Ltd.
David Roh	Dolby Laboratories, Inc.
Leng Ooi	Google, Inc.
Pierre-Louis Bossart	Intel Corporation
David Hines	Intel Corporation
Abdul Rahman Ismail (Co-Chair)	Intel Corporation
Devon Worrell	Intel Corporation
Chandrashekhara Rao	Logitech, Inc.
Terry Moore	MCCI Corporation
Alex Lin	MediaTek, Inc.
Bala Sivakumar	Microsoft Corporation
Geert Knapen (Co-Chair & Editor)	NXP Semiconductors <b>PL Mobile Audio</b> 411 E. Plumeria drive San Jose, CA 95134, USA E-mail: <a href="mailto:geert.knapen@nxp.com">geert.knapen@nxp.com</a>
James Goel	Qualcomm, Inc.
Andre Schevciw	Qualcomm, Inc.
Jin-Sheng Wang	Qualcomm, Inc.
Morten Christiansen	Synopsys

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## 1 INTRODUCTION

### 1.1 SCOPE

The Audio Device Class Definition applies to all devices or functions embedded in composite devices that are used to manipulate audio, voice, and sound-related functionality. This includes both audio data (analog and digital) and the functionality that is used to directly control the audio environment, such as Volume and Tone Control. The Audio Device Class does not include functionality to operate transport mechanisms that are related to the reproduction of audio data, such as tape transport mechanisms or CD-ROM drive control.

### 1.2 PURPOSE

The purpose of this document is to describe the minimum capabilities and characteristics an audio device shall support to comply with the USB. This document also provides recommendations for optional features.

### 1.3 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 3.1 Specification*, Revision 1.0 (referred to in this document as the *USB 3.1 Specification*). This document covers details specific to SuperSpeed and SuperSpeed+ devices.
- *Universal Serial Bus Device Class Definition for Audio Data Formats* (referred to in this document as USB Audio Data Formats).
- *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.
- MPEG-2 standard ISO/IEC 13818-3 Feb. 20, 1997.
- Digital Audio Compression Standard (AC-3), ATSC A/52A Aug. 20, 2001. (available from <http://www.atsc.org/>)
- ANSI/IEEE-754 floating-point standard.
- ISO/IEC 60958 International Standard: *Digital Audio Interface and Annexes*.
- ISO/IEC 61937 standard.

### 1.4 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*.

<b>ASRC</b>	Acronym for Asynchronous Sampling Rate Conversion.
<b>(Audio Channel) Cluster</b>	Group of logical audio channels that carry tightly related synchronous audio information. A stereo audio stream is a typical example of a two-channel Cluster.
<b>Audio Control Attribute</b>	Parameter of an Audio Control. Examples are Current, Minimum, Maximum and Resolution attributes of a Volume Control.
<b>Audio Control</b>	Logical object that is used to manipulate a specific audio property. Examples are Volume Control, Mute Control, etc.
<b>Audio data stream</b>	Transport medium that can carry audio information.