

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**Universal serial bus interfaces for data and power –  
Part 2-3: Universal Serial Bus Cables and Connectors Class Document  
Revision 2.0**

**Interfaces de bus universel en série pour les données et l'alimentation  
électrique –  
Partie 2-3: Document des classes de câbles et connecteurs USB, révision 2.0**



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**UNIVERSAL SERIAL BUS INTERFACES  
FOR DATA AND POWER –****Part 2-3: Universal Serial Bus Cables and  
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International Standard IEC 62680-2-3 has been prepared by technical area 14: Interfaces and methods of measurement for personal computing equipment, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this standard is based on documents prepared by the USB Implementers Forum (USB-IF). The structure and editorial rules used in this publication reflect the practice of the organization which submitted it.

This first edition cancels and replaces IEC 62680-4 published in 2013. This edition constitutes a technical revision.

This bilingual version (2018-04) corresponds to the English version, published in 2015-09.

The text of this standard is based on the following documents:

CDV	Report on voting
100/2333/CDV	100/2436/RVC

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

The French version of this standard has not been voted upon.

A list of all the parts in the IEC 62680 series, published under the general title *Universal serial bus interfaces for data and power* can be found on the IEC website.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "<http://www.stc.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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## INTRODUCTION

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IEC 62680-1-1, *Universal Serial Bus interfaces for data and power – Part 1-1: Common components – USB Battery Charging Specification, Revision 1.2*

IEC 62680-2-1, *Universal Serial Bus interfaces for data and power – Part 2-1: Universal Serial Bus Specification, Revision 2.0*

IEC 62680-2-2, *Universal Serial Bus interfaces for data and power – Part 2-2: USB Micro-USB Cables and Connectors Specification, Revision 1.01*

IEC 62680-2-3, *Universal Serial Bus interfaces for data and power – Part 2-3: Universal Serial Bus Cables and Connectors Class Document Rev. 2.0*

This part of the IEC 62680 series consists of several distinct parts:

- the main body of the text, which consists of the original specification developed by the USB-IF.

## CONTENTS

FOREWORD.....	2
INTRODUCTION.....	4
1 Introduction .....	11
1.1 Purpose .....	11
1.2 Scope .....	11
1.3 Related Documents.....	11
1.4 Terms and Abbreviations .....	12
2 Management Overview .....	13
3 USB Electrical, Mechanical and Environmental Compliance Standards.....	13
4 Acceptance Criteria, Test Methods and Test Procedures .....	17
4.1 Integrators List (IL) .....	17
4.2 USB Logo Usage .....	17
4.3 Compliance Test Report.....	17
4.4 Connector and Cable Assembly Physical Certification.....	17
4.5 General Information .....	18
4.5.1 Mated Pairs .....	18
4.5.2 Before Testing .....	18
4.5.3 Test Sequences.....	18
4.6 Sample Selection.....	18
4.7 USB Compliance Testing Interval.....	18
4.8 Primary Qualification Approval Testing.....	18
4.9 Sustaining Qualification Approval Testing .....	19
4.10 Compliance Test Sequences.....	19
4.10.1 Inspection EIA 364-18 .....	19
4.10.2 Test Group ‘1’.....	21
4.10.3 Test Group ‘2’.....	22
4.10.4 Test Group ‘3’.....	23
4.10.5 Test Group ‘4’.....	24
4.10.6 Test Group ‘5’.....	25
4.10.7 Test Group ‘6’.....	25
4.10.8 Test Group ‘7’.....	26
4.10.9 Test Group ‘8’.....	27
5 Certification, Acceptance and Submission .....	27
5.1 Compliance Test Report.....	28
5.2 Listing, Authorization and Notification .....	28
5.2.1 Listing .....	28
5.2.2 Authorization to use Certified USB Logo .....	28
5.2.3 Notification .....	28
Appendices.....	29
Figure 4-1 – Typical Contact Resistance Measurement.....	22
Table 3-1 – Electrical, Mechanical and Environmental Compliance Standards .....	14
Table 4-1 – Test Conditions .....	17
Table 4-2 – Performance Levels .....	18

Table 4-3 – Primary Qualification Approval Testing .....	19
Table 4-4 – Test Group '1' Durability, Vibration, Shock, Cable Retention and Mating/Un-mating Force.....	21
Table 4-5 – Group '2' Temperature Life .....	22
Table 4-6 – Test Group '3' Mixed Flowing Gas .....	23
Table 4-7 – Test Group '4' Insulation Resistance, Dielectric Withstanding Voltage, Thermal Shock & Humidity Temperature Cycling.....	24
Table 4-8 – Test Group '5' Solderability .....	25
Table 4-9 – Test Group '6' High Frequency Testing.....	25
Table 4-10 – Test Group '7' Critical Dimensions.....	26
Table 4-11 – Test Group '8' Cable.....	27

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## Universal Serial Bus Cables and Connectors Specification

Revision 2.0  
August, 2007

### Revision History

Revision	Date	Filename	Comment
2.0 RC 6	August 10, 2007	CabConnRC6_Aug10.doc	Added Go/No-go & latch measurement for Micro series Added Drain wire inspection process Added pin contact visual inspection Added clarifying text to 4-axis test description
2.0 RC5	June 5, 2007	CabConn20RC5_June5	Removed Shielding Effectiveness Replace Rotational Continuity with 4-Axis Continuity Other miscellaneous minor changes
2.0 RC4	May, 2007	CabConn20RC4_May07	Cable Construction inspection added
2.0	April 4, 2007	CabConn20	Removed Shielding Effectiveness, Added power line resistance test Added cable rotation test
2.0	February 14, 2007	CabConn Rev 2.0	Edits from Yoshi YAMANE of Matsushita
2.0	February 13, 2007	CabConn Rev 2.0	Edited section on Koser new chart from Hirose
2.0	February 7, 2007	CabConn Rev 2.0	Edited draft
2.02RC2	February 6, 2007	CabConnRC2_02-06-07	Work group editorials
2.01RC2	December 6, 2006	CabConnRC2_12-06-06	Work group editorials
2.0RC2	July 11, 2006	CabConnRC2_7-11-06	Added durability requirements for Ruggedized Standard "A" receptacle and durability requirements for Micro series
2.0RC2	June 7, 2006	CabConnRC2_6-7-06	Added new critical dimensions drawings for standard "A" and "B" plugs and receptacles and changed the criteria for "mini" products to the use of go – no go gages in Appendix B
2.0RC2	March 21, 2006	CabConnRC2_3-23-06.doc	Added new IP agreement
2.0RC2	December 12, 2003	CabConnRC2.doc	Final edit during USB DWG meeting in Austin prior to posting the document to Web site
2.0RC1	October 29, 2002	CabConnRC1.doc	Adjust formatting in technical edit pass
2.0RC	August 13, 2002		Rewrite of test program to reflect current practice and general updates to reflect changes in the USB Specification.
1.1	September 1, 1999		Editorial Update for improved use. Add Appendices 'A' and 'B.'
1.0	May 22, 1999		Accepted unanimously by USB-IF DWG after 30-day posting without negative comment.
1.0RC	March 27, 1999		Release for industry comment

Revision	Date	Filename	Comment
0.9a	January 19, 1999		Moved to Revision 0.9 by consensus of the Cable & Connector Work Group. Pending final editorial cleanup RRs to be voted on at a special Cable & Connector Work Group meeting February 21, 1999.
0.9RC	December 18, 1998		Moves Document to 0.9RC by consensus of the Cable & Connector Group to Version 0.9 without Appendices Drawings and Lab Listings. Special dispensation by the DWG to move to Revision 1.0 for use at the January 1999 Plug Fest.
0.8	October 20, 1998		Release for industry comment

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## UNIVERSAL SERIAL BUS INTERFACES FOR DATA AND POWER –

### Part 2-3: Universal Serial Bus Cables and Connectors Class Document Revision 2.0

## 1 Introduction

### 1.1 Purpose

This document describes the mechanical, electrical, environmental, design and performance criteria and voluntary supplier compliance requirements for USB connectors, cable and fabricated cable assemblies. In addition, this document provides detailed requirements for the design, approval and implementation of application specific USB connectors and fabricated cable assemblies.

### 1.2 Scope

The information provided in this document serves as a guideline for design, development and voluntary compliance testing of USB connectors and fabricated cables assemblies, as well as defining mechanical, electrical, environmental and performance characteristics. As such, it defines how USB connectors, cable and fabricated cables assemblies are to be implemented and how manufacturers and/or fabricators will interact with the voluntary compliance requirements.

### 1.3 Related Documents

American Society for Testing and Materials

ASTM-D-4565 *Standard Test Methods for Physical and Environmental Performance Properties of Insulations and Jackets for Telecommunications Wire and Cable.* This specification is available through the World Wide Web site <http://www.astm.org/>

ASTM-D-4566 *Standard Test Methods for Electrical Performance Properties of Insulations and Jackets for Telecommunications Wire and Cable.* This specification is available through the World Wide Web site <http://www.astm.org/>

ANSI/EIA 364-C *Electrical Connector/Socket Test Procedures Including Environmental Classifications,* approved 1994. Available in hard copy – reference search site <http://www.nssn.org/information.html>

Underwriters Laboratories

UL STD-94 *Test procedures used to classify polymeric materials 94HB, 94V-1, 94V-2, 94-5VA, 94-5VB, 94VTM-0, 94VTM-1, 94VTM-2, 94HBF, 94HF-1, and 94HF-2.* This specification is available through the World Wide Web site <http://www.comm-2000.com/>

UL Subject-444 *Type CMP (plenum cable), Type CMR (riser cable), Type CM (commercial cable), and Type CMX (cable for restricted use.* This specification is available through the World Wide Web site <http://www.comm-2000.com/>

[USB2.0] *Universal Serial Bus Specification, revision 2.0* (also referred to as the *USB Specification*). This specification is available on the World Wide Web site <http://www.usb.org>.

USB On-The-Go *On-The-Go Supplement to the USB 2.0 Specification* (also referred to as the *USB On-The-Go Specification*). This specification is available on the World Wide Web site <http://www.usb.org>.