

**Universal serial bus interfaces for data and power -- Part
2: Universal serial bus - Micro-USB cables and
connectors specification, revision 1.01**

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**Universal serial bus interfaces for data and power -
Part 2: Universal serial bus -
Micro-USB cables and connectors specification, revision 1.01
(IEC 62680-2:2013)**

Interfaces de bus universel en série pour
les données et l'alimentation électrique -
Partie 2: Bus universel en série -
Spécification des câbles et connecteurs
micro-USB, révision 1.01
(CEI 62680-2:2013)

Schnittstellen des Universellen Seriellen
Busses für Daten und Energie -
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Kabel und Steckverbinder
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Comité Européen de Normalisation Electrotechnique
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Foreword

The text of document 100/2153/FDIS, future edition 1 of IEC 62680-2, prepared by IEC/TC 100, "Audio, video and multimedia systems and equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 62680-2:2013.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2014-07-16
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2016-10-16

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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.

The USB Implementers Forum, Inc.(USB-IF) is a non-profit corporation founded by the group of companies that developed the Universal Serial Bus specification. The USB-IF was formed to provide a support organization and forum for the advancement and adoption of Universal Serial Bus technology. The Forum facilitates the development of high-quality compatible USB peripherals (devices), and promotes the benefits of USB and the quality of products that have passed compliance testing.

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This series covers the Universal Serial Bus interfaces for data and power and consists of the following parts:

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

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

IEC 62680-3, *Universal Serial Bus interfaces for data and power – Part 3: USB Battery Charging Specification, Revision 1.2*

IEC 62680-4, *Universal Serial Bus interfaces for data and power – Part 4: Universal Serial Bus Cables and Connectors Class Document Revision. 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 and all ECN and Errata developed by the USB-IF.

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Universal Serial Bus Micro-USB Cables and Connectors Specification

**Revision 1.01
April 4, 2007**

Revision History

Revision	Issue Date	Comment
0.6	1/30/2006	Revisions to all sections
0.7	3/24/2006	Added revised Micro-USB drawings to Rev.0.8
0.8	4/19/2006	Editorial changes and additions by Jan Fahlund (Nokia)
0.8b	4/26/2006	Corrections to the 0.8 version (based by comments from contributors)
0.9	6/7/2006	Corrections based on comments from the 0.8b version
1.0RC	8/2/2006	Added lubricant recommendation, LLRC delta change specified
1.01RC	11/10/2006	Editorial changes and addition based on Oct-06 USB-IF CCWG meeting.
1.02RC	12/10/2006	Shell material thickness tolerances changed so that material can be 0.25 mm or 0.3 mm; edited three pictures (Figure 4-10, 4-11 and 4-12).
1.03RC	12/11/2006	Two pictures edited (Figure 4-8 and 4-9). In fig 4-8 max height to be 2.8mm MAX. In fig 4-9 R0.25mm MAX to be R0.30mm MAX.
1.0RC3	12/19/2006	For BoD approval
1.0	1/12/2007	Approved
1.0	1/22/2007	Cosmetic edits for publication
1.01	4/4/2007	Editorial corrections and additions to contributor list. Reinserted shell and plug material requirements as section 6.10. Clarified wording on Plating Recommendations.

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1 Introduction

1.1 General

USB has become a popular interface for exchanging data between cell phone and portable devices. Many of these devices have become so small it is impossible to use standard USB components as defined in the USB 2.0 specification. In addition the durability requirements of the Cell Phone and Portable Devices market exceed the specifications of the current interconnects. Since Cell Phones and other small Portable Devices are the largest market potential for USB, this specification is addressing this very large market while meeting all the requirements for electrical performance within the USB 2.0 specification.

1.2 Objective of the Specification

The purpose of this document is to define the requirements and features of a Micro-USB connector that will meet the current and future needs of the Cell Phone and Portable Devices markets, while conforming to the USB 2.0 specification for performance, physical size and shape of the Micro-USB interconnect.

This is not a stand-alone document. Any aspects of USB that are not specifically changed by this specification are governed by the USB 2.0 Specification and USB On-The-Go Supplement.

1.3 Intended Audience/Scope

Cell phone and Portable Devices have become so thin that the current Mini-USB does not fit well within the constraints of future designs. Additional requirements for a more rugged connector that will have durability past 10,000 cycles and still meet the USB 2.0 specification for mechanical and electrical performance was also a consideration. The Mini-USB could not be modified and remain backward compatible to the existing connector as defined in the USB OTG specification.

1.4 Related Documents

USB 2.0

USB OTG Supplement

2 Acronyms and Terms

This chapter lists and defines terms and abbreviations used throughout this specification.

A-Device	A device with a Type-A plug inserted into its receptacle. The A-device supplies power to VBUS and is host at the start of a session. If the A-device is On-The-Go, it may relinquish the role of host to an On-The-Go B-device under certain conditions.
Application	A generic term referring to any software that is running on a device that can control the behavior or actions of the USB port(s) on a device.
B-Device	A device with a Type-B plug inserted into its receptacle. The B-device is a peripheral at the start of a session. If the B-device is OTG, it may be granted the role of host from an OTG A-device.
DIP-type	A connector with contact and shield solder tails that are soldered through the printed circuit board
FS	Full Speed (max 12Mb/s)
Higher than HS	(480Mb/s ---> 5 Gb/s)