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USB 2.0 Specification

[Universal Serial Bus Revision 2.0 specification](#) (.zip file format, size 78.8 MB) provides the technical details to understand USB requirements and design USB compatible products. Modifications to the USB specification are made through Engineering Change Notices (ECNs). Enclosed in this zip file are the following documents:

1. The Original USB 2.0 specification released on April 27, 2000
2. USB 2.0 Adopters Agreement
3. Errata to the USB 2.0 specification as of December 7, 2000
4. Mini-B connector Engineering Change Notice to the USB 2.0 specification
5. Pull-up/pull-down Resistors Engineering Change Notice to the USB 2.0 specification
6. Errata to the USB 2.0 specification as of May 28, 2002
7. Interface Association Descriptor Engineering Change Notice to the USB 2.0 specification
8. Rounded Chamfer Engineering Change Notice to the USB 2.0 specification as of October 8, 2003
9. Unicode Engineering Change Notice to the USB 2.0 specification as of February 21, 2005
10. Inter-Chip USB Supplement Revision 1.0 as of March 13, 2006
11. Micro-USB Cables and Connectors Specification Revision 1.01 as of April 4, 2007 and corresponding Adopters Agreement
12. USB 2.0 Link Power Management Addendum Engineering Change Notice to the USB 2.0 specification as of July 16, 2007
13. High-Speed Inter-Chip USB Electrical Specification Revision 1.0 as of September 23, 2007
14. Suspend Current Limit Changes Engineering Change Notice to the USB 2.0 Specification as of April 9, 2008
15. 5V Short Circuit Withstand Requirement Change Engineering Change Notice to the USB 2.0 Specification as of December 22, 2008
16. Device Capacitance Engineering Change Notice to the USB 2.0 Specification as of December 22, 2008
17. Material Change Engineering Change Notice to the USB 2.0 Specification as of December 22, 2008
18. USB 2.0 Phase-locked SOFs Engineering Change Notice to the USB 2.0 Specification as of December 22, 2008
19. Micro-USB Micro-B ID Pin Resistance and Tolerance stack-up between D+ and D- Engineering Change Notice to the MicroUSB Specification to the USB 2.0 Specification, Revision 1.01 as of December 22, 2008
20. Quad Type Cable Additional for Micro USB ECN as of December 29, 2009
21. Clarification on the Chamfer on USB 2.0 Micro Connectors ECN as of March 23, 2010
22. Maximum Unmating Force Value Definition to USB 2.0 Micro Connectors ECN as of March 23, 2010
23. "On-The-Go Supplement to the USB 2.0 Specification" Adopters Agreement
24. USB TEST_MODE Selector Values ECN as of July 26, 2010
25. Errata for USB 2.0 ECN: Link Power Management (LPM) - 7/2007 as of October 11, 2011
26. On-The-Go and Embedded Host Supplement to the USB Revision 2.0 Specification, Revision 2.0 version 1.1a as of July 27, 2012
27. HSIC ECN as of May 21, 2012
28. USB 2.0 Connect Timing ECN Update as of April 4, 2013
29. HSIC Disconnect Supplement ECN as of September 18, 2013
30. USB 2.0 VBUS Max Limit ECN as of August 11, 2014

31. Embedded USB2 (eUSB2) Physical Layer Supplement to the USB Revision 2.0 Specification dated August 1, 2014
32. USB OTG EH ECN Maximum Vbus Voltage dated November 26, 2014
33. USB Type-C™ Cable and Connector Specification Revision 1.3, July 14, 2017 and ECNs
34. USB Type-C™ Port Controller Interface Specification as of November, 2016
35. USB Power Delivery Specification Rev. 3.0, Version 1.1, January 12, 2017, ECNs, and corresponding Adopters Agreement
36. USB Authentication Specification Rev. 1.0 including ECN and Errata through February 2, 2017

Please check this site for any future updates to the USB 2.0 specification.

LIMITED COPYRIGHT LICENSE

The USB 3.0 Promoters grant a conditional copyright license under the copyrights embodied in the USB Type-C™ Cable and Connector Specification to use and reproduce the Specification for the sole purpose of, and solely to the extent necessary for, evaluating whether to implement the Specification in products that would comply with the specification. Without limiting the foregoing, use of the Specification for the purpose of filing or modifying any patent application to target the Specification or USB compliant products is not authorized. Except for this express copyright license, no other rights or licenses are granted, including without limitation any patent licenses. In order to obtain any additional intellectual property licenses or licensing commitments associated with the Specification a party must execute the USB 3.0 Adopters Agreement. NOTE: By using the Specification, you accept these license terms on your own behalf and, in the case where you are doing this as an employee, on behalf of your employer.

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USER ASSUMES THE FULL RISK OF USING THIS SPECIFICATION. IN NO EVENT SHALL USB-IF BE LIABLE FOR ANY ACTUAL, DIRECT, INDIRECT, PUNITIVE, OR CONSEQUENTIAL DAMAGES ARISING FROM SUCH USE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

USB 2.0 Adopters Agreement

[USB 2.0 Adopters Agreement](#) (.pdf file format, size 28k)

The USB 2.0 Adopters Agreement allows a signing company to participate in a reciprocal, royalty-free licensing arrangement for compliant products. Any USB 2.0 Adopters Agreement shall only be effective if received within one (1) year after first sale of products that include 'Compliant Products'. See the USB 2.0 Adopters Agreement for details.

USB 2.0 On-The-Go Specification Supplement Adopters Agreement

The USB 2.0 Promoters have voted to adopt an addendum to the USB 2.0 Specification designated "On-The-Go Supplement to the USB 2.0 Specification" (the "Specification Supplement"). A copy of the Specification Supplement is located at: www.usb.org/developers/onthego. This letter is to provide USB 2.0 Adopters the option of extending their Adopter Agreement to address this new Spec Supplement (the Spec Supplement exceeds the scope of your original USB 2.0 Adopters Agreement, which is specific to the USB 2.0 Specification).

Adopters are under no obligation to amend their Adopters Agreement. However, those Parties that are Adopters as of the date of this Amendment Letter wishing to amend their Adopters Agreement must have the [Amendment Letter](#) (.pdf file format, size 16k) executed by a duly authorized representative and return the original signed letter to the address below to expand the scope of their Adopters Agreement. Once you have signed the Amendment Letter, return the original to the USB 2.0 Promoter Group at:

USB 2.0 Promoter Group
3855 SW 153rd Drive
Beaverton, OR 97003
USA

Low Voltage Inter-Chip Adopters Agreement Amendment

The USB 2.0 Promoters have voted to adopt an addendum to the USB 2.0 Specification designated "Low Voltage Inter-Chip Supplement to the USB 2.0 Specification" ("Spec Supplement", posted with the USB 2.0 spec above) and to provide USB 2.0 Adopters the option of extending their Adopter Agreement to address this new Spec Supplement (the Spec Supplement exceeds the scope of your original USB 2.0 Adopters Agreement, which is specific to the USB 2.0 Specification).

Adopters are under no obligation to amend their Adopters Agreement. However, those Parties that are Adopters as of the date of this Amendment Letter wishing to amend their Adopters Agreement must have the [Amendment Letter](#) (.pdf file format, size 12k) executed by a duly authorized representative and return the original signed letter to the address below by no later than March 20, 2007 to expand the

scope of their Adopters Agreement. Parties becoming Adopters after the date of this Amendment Letter may amend their Adopters Agreement by signing and returning this Amendment Letter to the address below within their Adoption Period. Responses from existing USB 2.0 Adopters post marked after the applicable deadline are considered null and void. Once you have signed the Amendment Letter, return the original to the USB 2.0 Promoter Group at:

USB 2.0 Promoter Group
3855 SW 153rd Drive
Beaverton, OR 97003
USA

High-Speed Inter-Chip Adopters Agreement Amendment

The USB 2.0 Promoters have voted to adopt an addendum to the USB 2.0 Specification designated "High-Speed Inter-Chip Supplement to the USB 2.0 Specification" ("Spec Supplement", posted with the USB 2.0 spec above) and to provide USB 2.0 Adopters the option of extending their Adopter Agreement to address this new Spec Supplement (the Spec Supplement exceeds the scope of your original USB 2.0 Adopters Agreement, which is specific to the USB 2.0 Specification).

Adopters are under no obligation to amend their Adopters Agreement. However, those Parties that are Adopters wishing to amend their Adopters Agreement must have the [Amendment Letter](#) (.pdf file format, size 68k) executed by a duly authorized representative to expand the scope of their Adopters Agreement. Once you have signed the Amendment Letter, return the original to the USB 2.0 Promoter Group at:

USB 2.0 Promoter Group
3855 SW 153rd Drive
Beaverton, OR 97003
USA

Intellectual Property Rights Notices

This page contains links to a reproduction of letters received by the USB-IF from patent owners asserting intellectual property rights that may be pertinent to the implementation of a USB specification. For specific information regarding the licensing of intellectual property rights arising from a particular USB Specification, the reader should consult the appropriate USB Adopters Agreement for that specification.

Notice to all readers: The USB-IF is providing this information as a courtesy to our members 'AS IS' and without warranty of any kind. The USB-IF is not responsible for content of the individual postings. The USB-IF will not be responsible for identifying patents for which a license may be required by a USB Specification nor for conducting inquiries into the legal validity or scope of those patents that are brought to its attention.

USB 2.0 Design Guideline

[USB 2.0 Icon Design Guideline](#) This design guideline provides a recommendation to PC OEMs on how to distinguish USB 2.0 ports to address the scenario where a high-speed device is plugged into a Original USB (full/low-speed) port

Compliance Updates

Please review the [USB-IF Compliance Updates](#) webpage frequently and subscribe to the [news feed](#) for the latest information regarding the USB-IF Compliance Program.