

USB ENGINEERING CHANGE NOTICE

Title: Quad type cable additional for Micro USB

**Applies to: Universal Serial Bus Micro-USB Cables and Connectors
Specification, Revision 1.01**

Summary of ECN

The current Micro-USB specification in Section 4.5.1 specifies “The cables allowed by the Micro-USB specification are shown in Figure 4-1, Figure 4-2, Figure 4-3. and meet all other requirements of a USB cable” that a typical USB cable construction consist of non-twisted power pair, twisted signal pair, drain wire, aluminum shield, braiding and cable jacket. This ECN allows a Micro-USB cable to be constructed with the data and power lines twisted together and to not have a drain wire as is currently required in the Micro-USB specification Revision 1.01. Such a Micro-USB cable is referred to as a Quad Type Micro-USB cable.

Reasons for ECN

The benefits of this ECN are that a Quad Type Micro-USB cable can be produced that has a smaller diameter, is more flexible and has good bending performance. In addition, the cost of these cables will be less than standard Micro-USB cables, due the fact that these cables require reduced amount of material, less material for packaging due to smaller bundle shape, and reduced transportation costs.

Impact on Existing Peripherals and Systems:

This ECN meets all the electrical requirements for Micro-USB cables. So there is no impact on the existing peripherals and systems.

(Ref. XV-4687C ECN Proposal for Micro USB (080815).pdf)

(Ref. XV-4687C_Supplement Quad cable R1 (091202).pdf)

Hardware Implications:

There is no implication and impact.

Software Implications:

There is no implication and impact.

Compliance Testing Implications:

The Cable Assemblies Test must be updated to state that a Micro-USB cable that has data and power lines that are twisted together without a drain wire is an acceptable Micro-USB cable when visually verifying the cable construction.

Specification Changes

Universal Serial Bus Micro-USB Cables and Connectors specification Revision 1.01

From:

Section 4.5.1 Cables

The cables allowed by the Micro-USB specification are shown in Figure 4-1, Figure 4-2, and Figure 4-3. Cables must have a propagation delay of 10 ns or less, have a physical length of no more than 2.0 meters, and meet all other requirements of a USB cable.

To:

Section 4.5.1 Cables

The cables allowed by the Micro-USB specification are shown in Figure 4-1, Figure 4-2, and Figure 4-3. Cables must have a propagation delay of 10 ns or less, have a physical length of no more than 2.0 meters, and meet all other requirements of a USB cable. **However, Micro-USB cables may be manufactured that have the data and power lines twisted together and without a drain wire. Such a Micro-USB cable is referred to as a Quad Type Micro-USB cable.**

Note that in Fig4-1, Fig4-2 and Fig4-3 “Micro-USB cables can have their data and power lines twisted together without a drain wire”.

Universal Serial Bus Cables and Connectors Class Document Revision 2.0

Section 4.10.1.1.2 Cable Assemblies

4.10.1.1.2 Cable Assemblies

The cable construction for standard detachable USB cable assemblies is to be visually verified. Cable construction must contain a braided outer shield and a metallic inner shield. A drain wire of 28 AWG or braid shield must be in contact with both shields. Cables must contain two data-lines of 28 AWG, and a power pair of 28 AWG to 20AWG. Note that a cable with the data and power lines twisted together without a drain wire is allowed for Micro-USB series. Power pairs smaller than 28 AWG are prohibited. The laboratory conducting the compliance testing is required to visually verify the construction of the cable.

Section 4.10.9 Test Group ‘8’

Test Phase	Test			Measurement To Be Performed			Common Requirements
	Title	EIA 364 Test	Severity or Condition of Test	Title	EIA 364 Test	P1	
8-5	Visual Inspection			Cable Construction			Existence of braided shield attached to shell of connector Existence of 28 gauge drain wire in contact with shield and attached to shell of connector Power lines 28gauge minimum Data lines 28 gauge twisted

Data and power lines
twisted together without
a drain wire is allowed
for Micro-USB series