USB ENGINEERING CHANGE NOTICE

Title: MicroUSB Micro-B ID Pin Resistance and Tolerance stack-up between D+ and D-

Applies to: MicroUSB Specification to the USB 2.0 Specification, Revision 1.01

Summary of ECN

Increase the minimum resistance to ground of the MicroB plug ID pin.

Reasons for ECN

The resistance change to the ID pin of the MicroUSB B plug is required for the identification of the battery charger. This change will give the battery charger the required margin and eliminate overlap in the battery charger specification. The tolerance stack-up between D+ and D- is required to ensure charging ID is properly sequenced.

Impact on Existing Peripherals and Systems:

This ECR increases the resistance to 1Mohm. Any cables that have a micro b plug with an ID resistance between 1Kohm and 1Mohm will be affected.

Hardware Implications:

Cables and plugs that support the “floating” state according to the Micro-USB spec will not have to change, since they don’t have an actual resistor to ground on the ID pin that needs to be changed. The ID pin is simply floating, so this change (100 Kohm to 1 M Ω) will have no implications there.

Software Implications:

This will have no implications on software.

Compliance Testing Implications:

The testing threshold for the Rb_PLUG_ID parameter in the Micro-USB spec needs to be changed to support the 1 M Ω min instead of the 100 Kohm min.

Specification Changes

In Section 4.2 after Table 4-2 change:
The ID pin on a Micro-A plug shall be connected to the GND pin. The ID pin on a Micro-B plug is not connected or is connected to ground by a resistance of greater than Rb_PLUG_ID (100kΩ MIN).

To:
The ID pin on a Micro-A plug shall be connected to the GND pin. The ID pin on a Micro-B plug is not connected or is connected to ground by a resistance of greater than Rb_PLUG_ID (1M Ω MIN).

Additional Changes to be made to the specification:
Add a note to **Figure 4-8** of the MicroUSB specification that the tolerance stack-up between D+ and D- cannot exceed a total of ± 0.075 mm between the two pins.

After **Table 4-2** reference **Figure 4-8** and note that the point of contact for D+ and D- must mate within 0.15 mm maximum.