

# USB Power Delivery ENGINEERING CHANGE NOTICE

**Title: Hard Reset Clarification**

**Applied to: USB Power Delivery Specification Revision 3.1  
Version 1.8**

<b>Brief description of the functional changes proposed:</b>
Clarify that the Sink may not disconnect the bulk capacitance in case of a Hard Reset and that the Source needs to discharge that as well as its own capacitance.

<b>Benefits as a result of the proposed changes:</b>
Clarify the requirements for the Source discharge of VBUS during a HR.

<b>An assessment of the impact to the existing revision and systems that currently conform to the USB specification:</b>
A few systems need to implement a more powerful discharge circuit.

<b>An analysis of the hardware implications:</b>
A few systems need to implement a more powerful discharge circuit.

<b>An analysis of the software implications:</b>
Probably none.

<b>An analysis of the compliance testing implications:</b>
The test needs to implement that the tester keeps its 100 $\mu$ F capacitor on the VBUS during this test.

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## Actual Change Requested

### (a). Section 7.1.5 Response to Hard Resets

#### New text - Add note to 1.st paragraph:

Note: A Sink that enters **Hard Reset** can have **cSinkBulkPD** present until Vbus drops below vSafe0V. The Source **shall** take this into consideration.

### (c). Section 7.1.5 Response to Hard Resets

#### From text:

Table 7-1 Sink Electrical Parameters

Parameter	Description	MIN	TYP	MAX	UNITS	Reference
<i>cSnkBulk<sup>1</sup></i>	Sink bulk capacitance on V <sub>BUS</sub> at Attach and during FRS after the old Source stops sourcing and prior to establishing an Explicit Contract (see Appendix E for an example).	1		10	μF	Section 7.2.2
<i>cSnkBulkPd<sup>1</sup></i>	Bulk capacitance on V <sub>BUS</sub> a Sink is allowed after a successful negotiation.	1		100	μF	Section 7.2.2

#### To text:

Table 7-2 Sink Electrical Parameters

Parameter	Description	MIN	TYP	MAX	UNITS	Reference
<i>cSnkBulk<sup>1</sup></i>	Sink bulk capacitance on V <sub>BUS</sub> at Attach and during FRS after the old Source stops sourcing and prior to establishing an Explicit Contract (see Appendix E for an example).	1		10 Reference the USB 3.2 spec.	μF	Section 7.2.2 USB 3.2 Section ?? 11.4.4.2
<i>cSnkBulkPd<sup>1</sup></i>	Bulk capacitance on V <sub>BUS</sub> a Sink is allowed after a successful negotiation.	1		100	μF	Section 7.2.2