

USB Power Delivery ENGINEERING CHANGE NOTICE

Title: Source transition

Applied to: USB Power Delivery Specification Revision 3.1

Version 1.6

Brief description of the functional changes proposed:
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Change sink requirement, during transition, from word 'power' to 'current' as sinks are usually working in current and not in power. Add source requirement accordingly.

Benefits as a result of the proposed changes:
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An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
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None

An analysis of the hardware implications:
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none

An analysis of the software implications:
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none

An analysis of the compliance testing implications:
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CTS needs to be updated

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Actual Change Requested

(a). Section 7.1.4.1.1 “7.1.4.1.1 Fixed Supply Positive Voltage Transitions”, P.275

From Text:

The Source **Shall** transition V_{BUS} from the starting Voltage to the higher new Voltage in a controlled manner. The negotiated new Voltage (e.g., 5V, 9V, 15V, ...) defines the nominal value for **vSrcNew**. During the positive transition the Source **Shall** be able to supply the Sink standby power and the transient current to charge the total bulk capacitance on V_{BUS} . The slew rate of the positive transition **Shall Not** exceed **vSrcSlewPos**. The transitioning Source output Voltage **Shall** settle within **vSrcNew** by **tSrcSettle**. The Source **Shall** be able to supply the negotiated power level at the new Voltage by **tSrcReady**. The positive Voltage transition **Shall** remain monotonic while the transitioning Voltage is below **vSrcValid** min and **Shall** remain within the **vSrcValid** range upon crossing **vSrcValid** min as shown in Figure 7-2. The starting time, t_0 , in Figure 7-2 starts **tSrcTransition** after the last bit of the **EOP** of the **GoodCRC** Message has been received by the Source.

To Text:

The Source **Shall** transition V_{BUS} from the starting Voltage to the higher new Voltage in a controlled manner. The negotiated new Voltage (e.g., 5V, 9V, 15V, ...) defines the nominal value for **vSrcNew**. During the positive transition the Source **Should** be able to supply the Sink standby **current** to charge the total bulk capacitance on V_{BUS} . The slew rate of the positive transition **Shall Not** exceed **vSrcSlewPos**. The transitioning Source output Voltage **Shall** settle within **vSrcNew** by **tSrcSettle**. The Source **Shall** be able to supply the negotiated power level at the new Voltage by **tSrcReady**. The positive Voltage transition **Shall** remain above **vSrcValid** min of the previous contract and below **vSrcValid** max of the new contract (figure 7-2) The voltage shall settle to **vSrcNew** within **tSrcSettle**. The starting time, t_0 , in Figure 7-2 starts **tSrcTransition** after the last bit of the **EOP** of the **GoodCRC** Message has been received by the Source.