

# USB Power Delivery ENGINEERING CHANGE NOTICE

**Title: Slew Rate Exception for Power Role Swaps**  
**Applied to: USB Power Delivery Specification Revision 3.1**  
**Version 1.6**

<b>Brief description of the functional changes proposed:</b>
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The list of scenarios not subject to the slew rate controls is incomplete. Enabling VBUS when becoming the new source as part of a power role swap has been added to the list.
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<b>Benefits as a result of the proposed changes:</b>
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Creates consistent requirements for all transitions from vSafe0V and to vSafe0V
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<b>An assessment of the impact to the existing revision and systems that currently conform to the USB specification:</b>
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None expected
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<b>An analysis of the hardware implications:</b>
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Existing designs may continue to control the slew. New designs only need to control the slew rate for non-0V transitions.
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<b>An analysis of the software implications:</b>
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None expected
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<b>An analysis of the compliance testing implications:</b>
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Compliance tests that currently check VBUS slew rate during a power role swap will need to remove this check.
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## Actual Change Requested

### (a). Section 7.1.14, Page 294,

#### From Text:

Scenarios where *vSrcSlewPos* and *vPpsSlewPos*  $V_{BUS}$  slew rate limits do not apply and  $V_{BUS}$  **May** transition faster than specified are as follows:

- When first applying  $V_{BUS}$  after an Attach.
- When increasing  $V_{BUS}$  from *vSafe0V* to *vSafe5V* during a Hard Reset.
- During a Fast Role Swap when the initial Sink applies  $V_{BUS}$ .

Scenarios where *vSrcSlewNeg* and *vPpsSlewNeg*  $V_{BUS}$  slew rate limits do not apply and  $V_{BUS}$  **May** transition faster than specified are as follows:

- When discharging  $V_{BUS}$  to *vSafe0V* during a Hard Reset.
- When discharging  $V_{BUS}$  to *vSafe0V* after a Detach.
- During a Fast Role Swap when the  $V_{BUS}$  power source connected to the Hub UFP stops sourcing power.

#### To Text:

Scenarios where *vSrcSlewPos* and *vPpsSlewPos*  $V_{BUS}$  slew rate limits do not apply and  $V_{BUS}$  **May** transition faster than specified are as follows:

- When first applying  $V_{BUS}$  after an Attach.
- **When applying  $V_{BUS}$  as part of a Power Role Swap to Source Role.**
- When increasing  $V_{BUS}$  from *vSafe0V* to *vSafe5V* during a Hard Reset.
- During a Fast Role Swap when the initial Sink applies  $V_{BUS}$ .

Scenarios where *vSrcSlewNeg* and *vPpsSlewNeg*  $V_{BUS}$  slew rate limits do not apply and  $V_{BUS}$  **May** transition faster than specified are as follows:

- When discharging  $V_{BUS}$  to *vSafe0V* during a Hard Reset.
- **When discharging  $V_{BUS}$  to *vSafe0V* as part of a Power Role Swap to Sink Role.**
- When discharging  $V_{BUS}$  to *vSafe0V* after a Detach.
- During a Fast Role Swap when the  $V_{BUS}$  power source connected to the Hub UFP stops sourcing power.