

# USB PD CTS ENGINEERING CHANGE NOTICE FORM

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**Title: TEST.PD.USB4.EUSB.3 Set  $V_{BUS}$  Through**  
**Applied to: USB PD CTS Specification Version 1.0 Revision 1**

<b>Brief description of the functional changes proposed:</b>
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The current CTS causes the <i>Vbus Through Cable</i> (B4) of the Tester's <i>Active Cable VDO 1</i> to be 0. This may cause SourceCaps of UUTs to change their PDOs to low offers since no Vbus power is required.
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<b>Benefits as a result of the proposed changes:</b>
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Predictable responses from the UUT without triggering unspecified behavior.
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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
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<b>An analysis of the hardware implications:</b>
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None
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<b>An analysis of the software implications:</b>
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None
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<b>An analysis of the compliance testing implications:</b>
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In particular, if Vbus Through Cable may cause a Source PDO of $< \text{Src\_PDO\_Max\_CurrentN}$ . This fails COMMON.CHECK.PD.7#4 which expects $\text{Src\_PDO\_Max\_CurrentN}$ to be offered, which is not required for optical cables which are the only cables expected to clear Vbus Through Cable. Even captive cables have $V_{BUS}$ to detect the Unattached.SRC state.
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There are a few potential fixes to the CTS. One is to change COMMON.CHECK.PD.7#4 to allow any $\text{Src\_PDO\_Max\_CurrentN}$ . Another is to change the Active Cable VDO 1.
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Changing a common check for this specific failure has larger impact on testing overall and is not the root cause of the issue, so fixing the Active Cable VDO 1 is preferred.
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A third potential fix is to change the PD core spec to disallow this behavior on DUTs if there is a valid scenario to require a Source to provide full power to a connection whose cable claims no $V_{BUS}$ .
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<b>An analysis of the Vendor Info File (VIF) implications:</b>
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None
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## Actual Change Requested

### (a). TEST.PD.USB4.EUSB.3, Page 269

#### From Text:

- The Tester always provides ACK response with below settings for Discover Identity Request as in COMMON.PROC.PD.7.
  - On the SOP'
    - ID header VDO-> Product Type UFP: Active Cable, Connector Type: USB TypeC plug, Modal operation supported = No, USB VendorID= Tester Vendor ID. All other values are 0
    - Active Cable VDO 1-> Connector: USB TypeC, Max Current 3A, Max Voltage=20V, Max Speed= USB4 Gen3. Cable termination = 11b. Cable latency=0001b, SOP" Controller Present=1, Remaining all field are 0
    - Active Cable VDO 2-> Max Temp=70, Shutdown Temp=80, USB Gen=1, remaining all fields are 0

#### To Text:

- The Tester always provides ACK response with below settings for Discover Identity Request as in COMMON.PROC.PD.7.
  - On the SOP'
    - ID header VDO-> Product Type UFP: Active Cable, Connector Type: USB TypeC plug, Modal operation supported = No, USB VendorID= Tester Vendor ID. All other values are 0
    - Active Cable VDO 1-> Connector: USB TypeC, Max Current 3A, Max Voltage=20V, Max Speed= USB4 Gen3. Cable termination = 11b. Cable latency=0001b, SOP" Controller Present=1, **V<sub>BUS</sub> Through Cable = 1b**, Remaining all field are 0
    - Active Cable VDO 2-> Max Temp=70, Shutdown Temp=80, USB Gen=1, remaining all fields are 0