

USB Power Delivery **ENGINEERING CHANGE REQUEST** **NOTICE FORM**

NOTICE: Any Company or Companies submitting a USB Power Delivery **ECNR** proposal must be one of the following: a Promoter or Contributor of the USB 3.0 and 2.0 Specifications who have completed the USB Power Delivery addendum. If a group of Companies is submitting an ECR proposal, each company must be either a Promoter or Contributor of the USB 3.0 and 2.0 Specifications who have completed the USB Power Delivery addendum.

SPECIFICATION REVISIONS AND ADDENDA: At any point in time, there shall only be one current version of the USB PD Specification, termed the production version. At the same time, there may also be proposed revisions to the specification's design which are not yet approved and shall be held confidential as deemed necessary by the USB 3.0 and USB 2.0 Promoters and within the Group of Working Committee(s).

PROCEDURES FOR SUBMITTING PROPOSALS: Both members of the USB Implementers Forum as a whole and members of the USB 3.0 and USB 2.0 Promoters may submit requests to revise the USB PD Specification and design guides. Such a request may be rejected or may result in a USB PD Engineering Change Notice (ECN), which is the official way USB specifications may be changed.

FORMAT OF PROPOSAL: The originator of a request to alter the USB PD Specification may do so by posting this to the USB Power Delivery working group for review. Once the proposal has been reviewed by the working group it will be passed to the USB 3.0 and 2.0 Promoters for approval to publish.

RESUBMISSION AND APPEAL: The originator of a request that was not approved can redraft the original request. Rewritten proposal will be treated as a new proposal and will be evaluated using the procedures described above. The originator of a request that was not approved can also submit an appeal to the USB 3.0 and 2.0 Promoters. The appeal must be made in writing and addressed to the Secretary of the USB Implementers Forum.

ABOUT THE ENGINEERING CHANGE REQUEST FORM:

The Purpose of this Engineering Change Request Form is to expedite the review process of the proposal by providing explanations, background information, and examples of the proposed changes at a high level. This form serves as an executive summary to the actual proposal.

STEPS ON HOW TO SUBMIT A USB PD ENGINEERING CHANGE REQUEST:

- 1) Please fill out the Engineering Change Request Form on the following pages completely:
 - a) Detail the names and contact details for each of the ECR contributors
 - b) Update the ECR Title
 - c) Give a minimum of 2-3 sentences for each description on the form outlining the background to the ECR
- 2) For each section/table/figure to be updated:
 - a) Detail the section number, starting page and figure/table number to be updated as appropriate.
 - b) Detail existing text under "From Text"
 - c) Detail changed text under "To Text"
- 3) Save the file as "USB PD 3.1 V1.4" followed by the ECR Title as per step 1)b)4)
- 4) Post the ECR in the USB Power Delivery Documents section under "ECR | New ECRs".
 - a) This ECR will then be reviewed by the Power Delivery Working Group.
 - b) Revisions to the ECR originating from the review should be submitted as document revision of the original ECR using "Add new document".

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Company: _____ Mailstop: _____

Address: _____

City: _____ State/Province: _____

Country: _____ Zip/Postal Code: _____

Phone: _____ FAX: _____

Name: _____ Email: _____

Company: _____ Mailstop: _____

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City: _____ State/Province: _____

Country: _____ Zip/Postal Code: _____

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Title: Modify test procedure of TEST.PD.PROT.SNK.3

Applied to: USB PD CTS Specification R1.4 V5 RC3

Brief description of the functional changes proposed:
The current test procedure in TEST.PD.PROT.SNK.3 and TEST.PD.PROT.SNK.4 may fail devices that behaves as allowed in "Source Initiated Hard Reset – Sink Long Reset" in PD3.1 Version1.5 section 8.3.2.7.3. The test procedure needs to be modified to accommodate those devices.

Benefits as a result of the proposed changes:
Not failing certain devices that are compliant to the PD spec

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
None

An analysis of the hardware implications:
None

An analysis of the software implications:
None

An analysis of the compliance testing implications:
TE flow needs to be changed accordingly

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Actual Change Requested

(a). Section TEST.PD.PROT.SNK.3 SinkWaitCapTimer Deadline, Page 152

From Text:

Test Procedures:

1. There are 2 possible bring-up procedures:
 - a. The UUT has VIF field PD_Port_Type set to Provider/Consumer, the Tester runs bring-up procedure with the UUT as a Sink COMMON.PROC.BU.8
 - b. The UUT has VIF field PD_Port_Type set to anything else, the Tester runs bring-up procedure with the UUT as a Sink COMMON.PROC.BU.2
2. The Tester sends a Hard Reset. It drives VBUS to vSafe0V and then restores VBUS to vSafe5V.
3. The Tester transmits Source Capabilities message with single PDO immediately prior to tTypeCSinkWaitCap min (the delay is from the time VBUS present vSafe5V min to the last bit of Source Capabilities message EOP):
 - a. B31...30 (Fixed Supply) set to 00b
 - b. B29 (Dual-Role Power) set to 0b, Tester is a Source only
 - c. B28 (USB Suspend Supported) set to 0b
 - d. B26 (USB Communications Capable) set to 0b
 - e. B25 (Dual-Role Data) set to 0b
 - f. B24...22 (Reserved) set to 00b
 - g. B21...20 (Peak Current) set to 00b
 - h. B19...10 (Voltage) set to 5V
 - i. B9...0 (Maximum Current) set to 100mA
4. The Tester continues to present SinkTxNG while waiting for a response if the test is running in PD3 mode. The Tester checks that the UUT responds with a Request message. [TEST.PD.PROT.SNK.3#1]

To Text:

Test Procedures:

1. There are 2 possible bring-up procedures:
 - a. The UUT has VIF field PD_Port_Type set to Provider/Consumer, the Tester runs bring-up procedure with the UUT as a Sink COMMON.PROC.BU.8
 - b. The UUT has VIF field PD_Port_Type set to anything else, the Tester runs bring-up procedure with the UUT as a Sink COMMON.PROC.BU.2
2. The Tester sends a Hard Reset. It drives VBUS to vSafe0V and then restores VBUS to vSafe5V.
3. The Tester transmits Source Capabilities message with single PDO immediately prior to tTypeCSinkWaitCap min (the delay is from the time VBUS present vSafe5V min to the last bit of Source Capabilities message EOP):
 - a. B31...30 (Fixed Supply) set to 00b
 - b. B29 (Dual-Role Power) set to 0b, Tester is a Source only
 - c. B28 (USB Suspend Supported) set to 0b
 - d. B26 (USB Communications Capable) set to 0b

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- e. B25 (Dual-Role Data) set to 0b
 - f. B24...22 (Reserved) set to 00b
 - g. B21...20 (Peak Current) set to 00b
 - h. B19...10 (Voltage) set to 5V
 - i. B9...0 (Maximum Current) set to 100mA
4. The Tester continues to present SinkTxNG while waiting for a response if the test is running in PD3 mode. the Tester checks ~~that the UUT responds with a Request message~~ the response..
- a. The check fails if the UUT sends a Hard Reset. [TEST.PD.PROT.SNK.3#1]
 - b. If a Request message is received, the test ends here.
 - c. If no Request message is received, proceed to step 5.
5. The Tester periodically sends Source_Capabilities with min tTypeCSendSourceCap interval, until tTypeCSinkWaitCap max is reached or a GoodCRC response is received.
6. The check fails if the UUT does not respond with a Request message. [TEST.PD.PROT.SNK.3#2]

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Test Procedures:

1. There are 2 possible bring-up procedures:
 - a. The UUT has VIF field PD_Port_Type set to Provider/Consumer, the Tester runs bring-up procedure with the UUT as a Sink COMMON.PROC.BU.8
 - b. The UUT has VIF field PD_Port_Type set to anything else, the Tester runs bring-up procedure with the UUT as a Sink COMMON.PROC.BU.2
2. The Tester sends a Hard Reset. It drives VBUS to vSafe0V and then restores VBUS to vSafe5V.
3. The Tester does not send a Source Capabilities message after cycling the VBUS to force a SinkWaitCapTimer timeout on the UUT.
4. The check fails if the UUT does not send a Hard Reset between tTypeCSinkWaitCap min and max. [TEST.PD.PROT.SNK.4#1] The delay is between the VBUS present vSafe5V min and the time of the first bit of Preamble of the Hard Reset sent by the UUT.

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Test Procedures:

1. There are 2 possible bring-up procedures:
 - a. The UUT has VIF field PD_Port_Type set to Provider/Consumer, the Tester runs bring-up procedure with the UUT as a Sink COMMON.PROC.BU.8
 - b. The UUT has VIF field PD_Port_Type set to anything else, the Tester runs bring-up procedure with the UUT as a Sink COMMON.PROC.BU.2
2. The Tester sends a Hard Reset. It drives VBUS to vSafe0V and then restores VBUS to vSafe5V.
3. The Tester does not send a Source Capabilities message after cycling the VBUS to force a SinkWaitCapTimer timeout on the UUT.
4. The check fails Check if the UUT does not send a Hard Reset between tTypeCSinkWaitCap min and max. The delay is between the VBUS present vSafe5V min and the time of the first bit of Preamble of the Hard Reset sent by the UUT.
 - a. The check issues a warning if UUT send a Hard Reset between tTypeCSinkWaitCap max and tNoResponse min. [TEST.PD.PROT.SNK.4#1]
 - b. The check fails if the UUT does not send a Hard Reset after tNoResponse min [TEST.PD.PROT.SNK.4#2]
 - c. The check fails if the UUT sends a Hard Reset before tTypeCSinkWaitCap min. [TEST.PD.PROT.SNK.4#3]

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