

USB PD CTS ENGINEERING CHANGE NOTIFICATION FORM

NOTICE: Any Company or Companies submitting a USB Power Delivery ECR 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 CTS, 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 CTS Specification. 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 CTS Specification may do so by posting this to the USB Power Delivery Compliance 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 CTS 1.0 R 1" followed by the ECR Title as per step 1)b)
- 4) Post the ECR in the USB PD CTS Documents section under "ECR | New ECRs".
 - a) This ECR will then be reviewed by the Power Delivery Compliance 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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Name: Yoon Lee Email: yoonlee@apple.com

Company: Apple Mailstop: _____

Address: _____

City: _____ State/Province: _____

Country: _____ Zip/Postal Code: _____

Phone: _____ FAX: _____

Name: _____ Email: _____

Company: _____ Mailstop: _____

Address: _____

City: _____ State/Province: _____

Country: _____ Zip/Postal Code: _____

Phone: _____ FAX: _____

Name: _____ Email: _____

Company: _____ Mailstop: _____

Address: _____

City: _____ State/Province: _____

Country: _____ Zip/Postal Code: _____

Phone: _____ FAX: _____

Name: _____ Email: _____

Company: _____ Mailstop: _____

Address: _____

City: _____ State/Province: _____

Country: _____ Zip/Postal Code: _____

Phone: _____ FAX: _____

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Title: TEST.PD.PS.SNK.1

Applied to: USB PD CTS Q1, 2026 OR

Brief description of the functional changes proposed:
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Update COMMON.CHECK.PD.15 Check Sink_Capabilities_Extended_Message per VIF update

Benefits as a result of the proposed changes:
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DUT reported Sink_Capabilities_Extended_Message check as per VIF claimed values

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:
--

Tester to update the corresponding tests per the ECR updates.

An analysis of the Vendor Info File (VIF) implications:
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None

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Actual Change Requested:

From Text:

COMMON.CHECK.PD.15 Check Sink_Capabilities_Extended Message

Description: The Tester performs additional protocol checks on all Sink Capabilities Extended messages sent by the UUT.

Check Applicability: the Sink_Capabilities_Extended Message

Perform the following checks on all *Sink_Capabilities_Extended*:

For the SKEDB [COMMON.CHECK.PD.15#1]

1. Load Step field: Bits 2...7 (Reserved) are 0
2. Compliance field: Bits 3...7(Reserved) are 0
3. Touch Temp field: 0, 1, 2 or 3
4. Battery Info field:
 - i. Upper nibble (Number of Hot Swappable Battery Slots) <= 4 and matches VIF field Num_Swappable_Battery_Slots
 - ii. Lower nibble (Number of Fixed Batteries) <= 4 and matches VIF field Num_Fixed_Batteries
5. Sink Modes field: Bits 6...7(Reserved) are 0
6. Sink Minimum PDP field:
 - i. Bits 0...6 (Sink's minimum PDP) is less than or equal to 100.
 - ii. Bits 0...6 (Sink's minimum PDP) is less than or equal Sink Operational PDP
 - iii. Bit 7(Reserved) is 0
7. Sink Operational PDP field:
 - i. Bits 0...6 (Sink's operational PDP) is less than or equal to 100.
 - ii. Bit 7(Reserved) is 0
8. Sink Maximum PDP field:
 - i. Bits 0...6 (Sink's maximum PDP) is less than or equal to 100.
 - ii. Bits 0...6 (Sink's maximum PDP) is equal or greater than Sink Operational PDP
 - iii. Bit 7(Reserved) is 0
9. EPR Sink Minimum PDP field:
 - i. if EPR_Support_As_Snk is not set
 1. Bits 0...7 (EPR Sink's minimum PDP) is set to 0.
 - ii. if EPR_Support_As_Snk is set
 1. Bits 0...7 (EPR Sink's minimum PDP) is less than or equal to EPR Sink operational PDP.
10. EPR Sink Operational PDP field:
 - i. if EPR_Support_As_Snk is not set
 1. Bits 0...7 (EPR Sink's operational PDP) is set to 0.
11. EPR Sink Maximum PDP field:
 - i. if EPR_Support_As_Snk is not set
 1. Bits 0...7 (EPR Sink's maximum PDP) is set to 0.
 - ii. if EPR_Support_As_Snk is set
 1. Bits 0...7 (EPR Sink's maximum PDP) is greater than or equal to EPR Sink operational PDP field and

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2. Is equal to the rounded-up value of VIF field
“PD_Power_As_Sink”/1000

To Text:

COMMON.CHECK.PD.15 Check Sink_Capabilities_Extended Message

Description: The Tester performs additional protocol checks on all Sink Capabilities Extended messages sent by the UUT.

Check Applicability: the *Sink_Capabilities_Extended* Message

Perform the following checks on all *Sink_Capabilities_Extended*:

For the SKEDB [COMMON.CHECK.PD.15#1]

1. SKEDB Version field (Byte 10): value is equal to 1 (Version 1.0). The check fails if the value is 0 or greater than 1.
2. Load Step field (Byte 11):
 - a. The check fails if Bits 1..0 are 10b or 11b
 - b. Bits 2...7 (Reserved) are 0
3. Compliance field (Byte 12): Bits 3...7(Reserved) are 0
4. Touch Temp field (Byte 15): 0, 1, 2 or 3
5. Battery Info field (Byte 16):
 - i. Upper nibble (Number of Hot Swappable Battery Slots) <= 4 and matches VIF field Num_Swappable_Battery_Slots
 - iii. Lower nibble (Number of Fixed Batteries) <= 4 and matches VIF field Num_Fixed_Batteries
6. Sink Modes field (Byte 17):
 - a. Bit 0 (PPS Charging Supported) matches VIF field Snk_PPS_Charging_Supported
 - b. Bit 1 (VBUS Powered) matches VIF field Snk_VBUS_Powered
 - c. Bit 2 (AC Supply Powered) matches VIF field Snk_AC_Supply_Powered
 - d. Bit 3 (Battery Powered) matches VIF field Snk_Battery_Powered
 - e. Bit 4 (Battery Essentially Unlimited) matches VIF field Snk_Battery_Essentially_Unlimited. If Snk_Battery_Powered is not YES, this bit shall be 0
 - f. Bit 5 (AVS Supported) matches VIF field Snk_AVS_Supported
 - g. Bits 6...7(Reserved) are 0
7. Sink Minimum PDP field (Byte 18):
 - i. Bits 0...6 (Sink's minimum PDP) is less than or equal to 100
 - ii. Bits 0...6 (Sink's minimum PDP) is less than or equal Sink Operational PDP
 - iii. Bits 0...6 (Sink's minimum PDP) is equal to VIF field Snk_SPR_Minimum_PDP
 - iv. Bit 7(Reserved) is 0
8. Sink Operational PDP field (Byte 19):
 - i. Bits 0...6 (Sink's operational PDP) is less than or equal to 100
 - ii. Bits 0...6 (Sink's operational PDP) is equal to VIF field Snk_SPR_Operational_PDP
 - iii. Bit 7(Reserved) is 0
9. Sink Maximum PDP field (Byte 20):

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- i. Bits 0...6 (Sink's maximum PDP) is less than or equal to 100
 - ii. Bits 0...6 (Sink's maximum PDP) is equal or greater than Sink Operational PDP
 - iii. Bits 0...6 (Sink's operational PDP) is equal to VIF field
Snk_SPR_Maximum_PDP
 - iii. Bit 7(Reserved) is 0
- 10. EPR Sink Minimum PDP field (Byte 21):
 - i. if EPR_Support_As_Snk is not set:
 - 1. Bits 0...7 (EPR Sink's minimum PDP) is set to 0
 - ii. if EPR_Support_As_Snk is set:
 - 1. Bits 0...7 (EPR Sink's minimum PDP) is less than or equal to EPR Sink operational PDP
 - 2. Bits 0...7 is less than or equal to 240
 - 3. Bits 0...7 (EPR Sink's minimum PDP) is equal to VIF field
Snk_EPR_Minimum_PDP
- 11. EPR Sink Operational PDP field (Byte 22):
 - i. if EPR_Support_As_Snk is not set
 - 1. Bits 0...7 (EPR Sink's operational PDP) is set to 0
 - ii. if EPR_Support_As_Snk is set
 - 1. Bits 0...7 is less than or equal to 240
 - 2. Bits 0...7 (EPR Sink's operational PDP) is equal to VIF field
Snk_EPR_Operational_PDP
- 12. EPR Sink Maximum PDP field (Byte 23):
 - i. if EPR_Support_As_Snk is not set:
 - 1. Bits 0...7 (EPR Sink's maximum PDP) is set to 0
 - ii. If EPR_Support_As_Snk is set:
 - 1. Bits 0...7 (EPR Sink's maximum PDP) is greater than or equal to EPR Sink operational PDP field and
 - 2. Bits 0...7 is less than or equal to 240
 - 3. Bits 0...7 (EPR Sink's maximum PDP) is equal to VIF field
Snk_EPR_Maximum_PDP