

USB Power Delivery ENGINEERING CHANGE NOTICE

Title: Change Source_Info Requirements

Applied to: USB Power Delivery Specification Revision 3.1

Version 1.4

Brief description of the functional changes proposed:
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Currently all sources are required to support Source_Info except single port chargers. This ECR expands the exception to ALL ports with 'invariant PDOs'.

Benefits as a result of the proposed changes:
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Removes the requirement for chargers with multiple ports that have invariant PDOs to support Source_Info.

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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May simplify for some implementations.
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An analysis of the software implications:
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May simplify for some implementations.
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An analysis of the compliance testing implications:
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Compliance tests will have to be adjusted so as not to fail multiport chargers with invariant PDOs that do not support Source_Info.

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Actual Change Requested

(a) Section 1.6, p61

New Text:

Add the following definition:

Invariant PDOs	A port that offers Invariant PDOs will always advertise the same PDOs except when limited by the cable.
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(b). Section 6.13.2, Table 6-77, p218

From Text:

Table 6-77 Applicability of Data Messages

Message Type	Source	Sink	Dual-Role Power	Cable Plug SOP'	Cable Plug SOP''	VP D ⁶
Transmitted Message						
Source_Capabilities	N	NA	N	NA	NA	NA
Request	NA	N		NA	NA	NA
Get_Country_Info	CN ⁵ /O	CN ⁵ /O		NA	NA	NA
BIST	N ¹	N ¹		NA	NA	NA
Sink_Capabilities	NA	N	N	NA	NA	NA
Battery_Status	CN ²	CN ²		NA	NA	NA
Alert	CN ¹¹ /R	CN ¹¹ /R		NA	NA	NA
Enter_USB	CN ⁷ /O	CN ⁷ /O		NA	NA	NA
EPR_Request	NA	CN ⁹		NA	NA	NA
EPR_Mode	CN ⁹	CN ⁹		NA	NA	NA
Source_Info	CN ¹⁰	NA	N	NA	NA	NA
Revision	N	N		O	NA	O
Received Message						
Source_Capabilities	NS	N	N	I	I	I
Request	N	NS		I	I	I
Get_Country_Info	CN ⁵ /NS	CN ⁵ /NS		I	I	I
BIST	N ¹	N ¹		N ¹	N ¹	N ¹
Sink_Capabilities	CN ⁴	NS	CN ⁴	I	I	I
Battery_Status	CN ³ /NS	CN ³ /NS		I	I	I
Alert	R/NS	R/NS		I	I	I
Enter_USB	CN ⁷ /O	CN ⁷ /O		CN ⁸ /I	CN ⁸ /I	I
EPR_Request	CN ⁹	NA		I	I	I

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Message Type	Source	Sink	Dual-Role Power	Cable Plug SOP'	Cable Plug SOP''	VP D ⁶
<i>EPR_Mode</i>	CN ⁹	CN ⁹		I	I	I
<i>Source_Info</i>	NA	N	N	I	I	I
<i>Revision</i>	N	N		I	I	I
<p>Note 1: For details of which BIST Modes and Messages shall be supported see Section 5.9 and Section 6.4.3.</p> <p>Note 2: shall be supported by products that contain batteries.</p> <p>Note 3: shall be supported by products that support the <i>Get_Battery_Status</i> Message.</p> <p>Note 4: shall be supported by products that support the <i>Get_Sink_Cap</i> Message.</p> <p>Note 5: shall be supported when required by a country authority.</p> <p>Note 6: VPD includes CT-VPDs when not Connected to a Charger. PD communication with a CT-VPD shall only take place when not Connected to a Charger.</p> <p>Note 7: shall be supported by products that support <i>[USB4]</i>.</p> <p>Note 8: shall be supported by Active Cables that support <i>[USB4]</i>.</p> <p>Note 9: shall be supported by products that support Source operation in EPR Mode.</p> <p>Note 10: shall be supported by all Sources except single port chargers with invariant PDOs.</p> <p>Note 11: shall be supported when SPR PPS is supported.</p>						

To Text:

Table 6-77 Applicability of Data Messages

Message Type	Source	Sink	Dual-Role Power	Cable Plug SOP'	Cable Plug SOP''	VP D ⁶
Transmitted Message						
<i>Source_Capabilities</i>	N	NA	N	NA	NA	NA
<i>Request</i>	NA	N		NA	NA	NA
<i>Get_Country_Info</i>	CN ⁵ /O	CN ⁵ /O		NA	NA	NA
<i>BIST</i>	N ¹	N ¹		NA	NA	NA
<i>Sink_Capabilities</i>	NA	N	N	NA	NA	NA
<i>Battery_Status</i>	CN ²	CN ²		NA	NA	NA
<i>Alert</i>	CN ¹¹ /R	CN ¹¹ /R		NA	NA	NA
<i>Enter_USB</i>	CN ⁷ /O	CN ⁷ /O		NA	NA	NA
<i>EPR_Request</i>	NA	CN ⁹		NA	NA	NA
<i>EPR_Mode</i>	CN ⁹	CN ⁹		NA	NA	NA
<i>Source_Info</i>	CN ¹⁰	NA	N	NA	NA	NA
<i>Revision</i>	N	N		O	NA	O
Received Message						
<i>Source_Capabilities</i>	NS	N	N	I	I	I
<i>Request</i>	N	NS		I	I	I
<i>Get_Country_Info</i>	CN ⁵ /NS	CN ⁵ /NS		I	I	I
<i>BIST</i>	N ¹	N ¹		N ¹	N ¹	N ¹
<i>Sink_Capabilities</i>	CN ⁴	NS	CN ⁴	I	I	I
<i>Battery_Status</i>	CN ³ /NS	CN ³ /NS		I	I	I
<i>Alert</i>	R/NS	R/NS		I	I	I

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Message Type	Source	Sink	Dual-Role Power	Cable Plug SOP'	Cable Plug SOP''	VP D ⁶
<i>Enter_USB</i>	CN ⁷ /O	CN ⁷ /O		CN ⁸ /I	CN ⁸ /I	I
<i>EPR_Request</i>	CN ⁹	NA		I	I	I
<i>EPR_Mode</i>	CN ⁹	CN ⁹		I	I	I
<i>Source_Info</i>	NA	N	N	I	I	I
<i>Revision</i>	N	N		I	I	I
<p>Note 1: For details of which BIST Modes and Messages Shall be supported see Section 5.9 and Section 6.4.3.</p> <p>Note 2: Shall be supported by products that contain batteries.</p> <p>Note 3: Shall be supported by products that support the <i>Get_Battery_Status</i> Message.</p> <p>Note 4: Shall be supported by products that support the <i>Get_Sink_Cap</i> Message.</p> <p>Note 5: Shall be supported when required by a country authority.</p> <p>Note 6: VPD includes CT-VPDs when not Connected to a Charger. PD communication with a CT-VPD Shall only take place when not Connected to a Charger.</p> <p>Note 7: Shall be supported by products that support <i>[USB4]</i>.</p> <p>Note 8: Shall be supported by Active Cables that support <i>[USB4]</i>.</p> <p>Note 9: Shall be supported by products that support Source operation in EPR Mode.</p> <p>Note 10: Shall be supported by all Source ports except those with invariant PDOs.</p> <p>Note 11: Shall be supported when SPR PPS is supported.</p>						