

USB Power Delivery ENGINEERING CHANGE NOTICE

Title: Battery Capabilities Clarification

Applied to: USB Power Delivery Specification Revision 3.1

Version 1.1

Brief description of the functional changes proposed:
Complete the description of the VID and PID fields in the Battery Capabilities message and to align the use of VID/PID in other messages.

Benefits as a result of the proposed changes:
Adds clarity

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
Should not change anything provided the logical meaning was assumed

An analysis of the hardware implications:
None

An analysis of the software implications:
Should not change anything provided the logical meaning was assumed

An analysis of the compliance testing implications:
Clarifies ambiguous definitions for testing purposes

USB Power Delivery ENGINEERING CHANGE NOTICE

Actual Change Requested (a). Section 6.5.1.1

From Text:

6.5.1.1 Vendor ID (VID) Field

The Vendor ID field *shall* contain the 16-bit Vendor ID (VID) assigned to the Source's vendor by the USB-IF. If the vendor does not have a VID, the Vendor ID field *shall* be set to zero. Devices that have a USB data interface *shall* report the same VID as the idVendor in the Standard Device Descriptor (see [USB 2.0] and [USB 3.2]).

To Text:

6.5.1.1 Vendor ID (VID) Field

The Vendor ID field *shall* contain the 16-bit Vendor ID (VID) assigned to the Source's vendor by the USB-IF. If the vendor does not have a VID, the Vendor ID field *shall* be set to 0xFFFF. Devices that have a USB data interface *shall* report the same VID as the idVendor in the Standard Device Descriptor (see [USB 2.0] and [USB 3.2]).

(b). Section 6.5.5

From Text:

6.5.5.1 Battery Design Capacity Field

The Battery Design Capacity field *shall* return the Battery's design capacity in tenths of WH. If the Battery is Hot Swappable and is not present, the Battery Design Capacity field *shall* be set to 0. If the Battery is unable to report its Design Capacity, it *shall* return 0xFFFF.

6.5.5.2 Battery Last Full Charge Capacity Field

The Battery Last Full Charge Capacity field *shall* return the Battery's last full charge capacity in tenths of WH. If the Battery is Hot Swappable and is not present, the Battery Last Full Charge Capacity field *shall* be set to 0. If the Battery is unable to report its Design Capacity, the Battery Last Full Charge Capacity field *shall* be set to 0xFFFF.

6.5.5.3 Battery Type Field

The Battery Type Field is used to report additional information about the Battery's capabilities.

6.5.5.3.1 Invalid Battery Reference

The Invalid Battery Reference bit *shall* be set when the *Get_Battery_Cap* Message contains a reference to a Battery that does not exist.

To Text:

6.5.5.1 Vendor ID (VID)

The VID field *shall* contain the manufacturer VID associated with the Battery, as defined by the USB-IF, or 0xFFFF in the case that no such VID exists.

If the *Battery Cap Ref* field in the *Get_Battery_Cap* Message is *Invalid*, this VID field *shall* be 0xFFFF.

6.5.5.2 Product ID (PID)

The following rules apply to the PID field. When the VID:

- belongs to the Battery vendor the PID field *shall* contain the Battery's 16-bit product identifier designated by the Battery vendor.

USB Power Delivery ENGINEERING CHANGE NOTICE

- belongs to the Device vendor the PID field **Shall** contain the Battery's 16-bit product identifier designated by the Device vendor.
- is 0xFFFF the PID field **Shall** be set to 0x0000.

6.5.5.3 Battery Design Capacity Field

The Battery Design Capacity field **Shall** return the Battery's design capacity in tenths of WH. If the Battery is Hot Swappable and is not present, the Battery Design Capacity field **Shall** be set to 0. If the Battery is unable to report its Design Capacity, it **Shall** return 0xFFFF.

6.5.5.4 Battery Last Full Charge Capacity Field

The Battery Last Full Charge Capacity field **Shall** return the Battery's last full charge capacity in tenths of WH. If the Battery is Hot Swappable and is not present, the Battery Last Full Charge Capacity field **Shall** be set to 0. If the Battery is unable to report its Design Capacity, the Battery Last Full Charge Capacity field **Shall** be set to 0xFFFF.

6.5.5.5 Battery Type Field

The Battery Type Field is used to report additional information about the Battery's capabilities.

6.5.5.5.1 Invalid Battery Reference

The Invalid Battery Reference bit **Shall** be set when the *Get_Battery_Cap* Message contains a reference to a Battery that does not exist.

(c). Section 6.5.7

From Text:

6.5.7.1 Vendor ID (VID)

The VID field **Shall** contain the device's or Battery's manufacturer string as defined by the vendor.

If the *Manufacturer Info Target* field in the *Get_Manufacturer_Info* Message is *Invalid*, this VID field **Shall** be 0xFFFF, and the associated PID field **Should** be set to 0x0000. If the *Manufacturer Info Target* field in the *Get_Manufacturer_Info* Message equals Battery (01b) and the *Manufacturer Info Ref* field is *Invalid*, this VID field **Shall** be 0xFFFF, and the associated PID field **Should** be set to 0x0000.

6.5.7.2 Product ID (PID)

The PID field **Shall** contain the device's or Battery's 16-bit product identifier designated by the vendor.

If the *Manufacturer Info Target* field in the *Get_Manufacturer_Info* Message is *Invalid*, this PID field **Should** be set to 0x0000. If the *Manufacturer Info Target* field in the *Get_Manufacturer_Info* Message equals Battery (01b) and the *Manufacturer Info Ref* field is *Invalid*, this PID field **Should** be set to 0x0000.

On receiving a *Manufacturer_Info* Message, with the VID set to 0xFFFF, the PID field **Shall** be *Ignored*.

To Text:

6.5.7.1 Vendor ID (VID)

If the requested Manufacturer Info is associated with the Device the VID field **Shall** contain:

- The manufacturer VID associated with the Device, as defined by the USB-IF, or
- 0xFFFF in the case that the vendor does not have a VID.

If the requested Manufacturer Info is associated with a Device that has a USB data interface, the Device **Shall** report the same VID as the idVendor in the Standard Device Descriptor (see [USB 2.0] and [USB 3.2]).

If the requested Manufacturer Info is associated with a Battery the VID field **Shall** contain:

- The manufacturer VID associated with the Battery specified, as defined by the USB-IF, or
- 0xFFFF in the case that the vendor does not have a VID.

If the *Manufacturer Info Target* field in the *Get_Manufacturer_Info* Message:

- Is *Invalid*, this VID field **Shall** be 0xFFFF.

USB Power Delivery ENGINEERING CHANGE NOTICE

- Equals Battery (01b) and the **Manufacturer Info Ref** field is **Invalid**, this VID field Shall be 0xFFFF.

6.5.7.2 Product ID (PID)

If the VID is 0xFFFF the PID field **Shall** contain 0x0000.

If the VID is not 0xFFFF the PID field **Shall** contain:

- If the requested Manufacturer Info is associated with the Device, the Device's 16-bit product identifier designated by the Device vendor.
- If the requested Manufacturer Info is associated with a Battery:
 - If the VID belongs to the Battery vendor, the Battery's 16-bit product identifier designated by the Battery vendor.
 - If the VID belongs to the Device vendor, the Battery's 16-bit product identifier designated by the Device vendor.

(d). Section 6.5.13

From Text:

6.5.13.1 Vendor ID (VID) Field

The Vendor ID field **Shall** contain the 16-bit Vendor ID (VID) assigned to the Sink's vendor by the USB-IF. If the vendor does not have a VID, the Vendor ID field Shall be set to zero. Devices that have a USB data interface **Shall** report the same VID as the idVendor in the Standard Device Descriptor (see [USB 2.0] and [USB 3.2]).

To Text:

6.5.13.1 Vendor ID (VID) Field

The Vendor ID field **Shall** contain the 16-bit Vendor ID (VID) assigned to the Sink's vendor by the USB-IF. If the vendor does not have a VID, the Vendor ID field Shall be set to 0xFFFF. Devices that have a USB data interface **Shall** report the same VID as the idVendor in the Standard Device Descriptor (see [USB 2.0] and [USB 3.2]).