USB Type-C ENGINEERING CHANGE NOTICE

Title: Remove VBUS Always On from Captive Cable Chargers
Applied to: USB Type-C Specification Release 2.2, October 2022

Brief description of the functional changes proposed:
Removes the allowance that USB-based chargers with a USB Type-C captive cable that do not support USB PD could supply VBUS at any time. Aligns this form of charger with receptacle-based chargers where the port is powered off until a Sink is confirmed attached.

Benefits as a result of the proposed changes:
Reduces the potential that USB Type-C Sinks will be instantly exposed to 5V VBUS during physical attach.

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
Does not impact existing captive cable chargers but disallows certification of future captive cable chargers that have VBUS always enabled independent of the CC connection status.

An analysis of the hardware implications:
Will require all future captive cable chargers to implement appropriate CC connection logic and power switching.

An analysis of the software implications:
No impact to SW.

An analysis of the compliance testing implications:
Captive cable charger compliance will have to be updated to align with this change.

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Actual Change Requested

(a) Section 4.8.1.2

Redline changes:

4.8.1.2 USB-based Chargers with USB Type-C Captive Cables

- A USB-based charger with a USB Type-C captive cable ~~that supports USB PD~~ shall only apply power to VBUS when it detects a Sink is attached and shall remove power from VBUS when it detects the Sink is detached (vOPEN).
- ~~A USB-based charger with a USB Type-C captive cable that does not support USB PD may supply VBUS at any time. It is recommended that such a charger only apply power to VBUS when it detects a Sink is present and remove power from VBUS when it detects the Sink is not present (vOPEN).~~

Final text:

4.8.1.2 USB-based Chargers with USB Type-C Captive Cables

- A USB-based charger with a USB Type-C captive cable shall only apply power to VBUS when it detects a Sink is attached and shall remove power from VBUS when it detects the Sink is detached (vOPEN).