

USB Type-C ENGINEERING CHANGE NOTICE FORM

Title: Audio Adapter State Change

Applied to: USB Type-C Specification Release 1.2

Brief description of the functional changes:

If an Audio Adapter (support Charge Through), with a headset (Ra/Ra on CC pins) and a Charge source (VBUS present) connected prior to plug-in, is plugged in to a SRC/DRP, the SRC/DRP will not be able to exit Unattached.SRC state if it follows version 1.2 of the Type-C specification due to VBUS is present.
--

Benefits as a result of the changes:

With the change, the Type-C state machine in a SRC/DRP will be able exit Unattached.SRC state and enter AudioAccessory state in the use case described above
--

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
--

--

An analysis of the hardware implications:
--

--

An analysis of the software implications:
--

N/A

An analysis of the compliance testing implications:
--

--

USB Type-C ENGINEERING CHANGE NOTICE FORM

Actual Change

(a). Section 4.5.2.2.6.2 Exiting from Unattached.SRC State, Page 144

From Text:

The port shall transition to AttachWait.SRC when VBUS is vSafe0V and:

- The SRC.Rd state is detected on either CC1 or CC2 pin or
- The SRC.Ra state is detected on both the CC1 and CC2 pins.

Note: A cable without an attached device can be detected, when the SRC.Ra state is detected on one of the CC1 or CC2 pins and the other CC pin is SRC.Open. However in this case, the port shall not transition to AttachWait.SRC.

A DRP shall transition to Unattached.SNK within tDRPTransition after dcSRC.DRP · tDRP, or if directed.

To Text:

The port shall transition to AttachWait.SRC when ~~VBUS is vSafe0V and:~~

- The SRC.Rd state is detected on either CC1 or CC2 pin or
- The SRC.Ra state is detected on both the CC1 and CC2 pins.

Note: A cable without an attached device can be detected, when the SRC.Ra state is detected on one of the CC1 or CC2 pins and the other CC pin is SRC.Open. However in this case, the port shall not transition to AttachWait.SRC.

A DRP shall transition to Unattached.SNK within tDRPTransition after dcSRC.DRP · tDRP, or if directed.

(b). Section 4.5.2.2.7.2 Exiting from AttachWait.SRC State, Page 144

From Text:

The port shall transition to Attached.SRC when VBUS is at vSafe0V and the SRC.Rd state is detected on exactly one of the CC1 or CC2 pins for at least tCCDebounce.

If the port supports Audio Adapter Accessory Mode, it shall transition to AudioAccessory when the SRC.Ra state is detected on both the CC1 and CC2 pins for at least tCCDebounce.

If the port supports Debug Accessory Mode, it shall transition to UnorientedDebugAccessory.SRC when the SRC.Rd state is detected on both the CC1 and CC2 pins for at least tCCDebounce.

A Source shall transition to Unattached.SRC and a DRP to Unattached.SNK when the SRC.Open state is detected on both the CC1 and CC2 pins.

A Source shall transition to Unattached.SRC and a DRP to Unattached.SNK when the SRC.Open state is detected on either the CC1 or CC2 pin and the other CC pin is SRC.Ra.

A DRP that strongly prefers the Sink role may optionally transition to Try.SNK instead of Attached.SRC when VBUS is at vSafe0V and the SRC.Rd state is detected on exactly one of the CC1 or CC2 pins for at least tCCDebounce.

USB Type-C ENGINEERING CHANGE NOTICE FORM

To Text:

The port shall transition to Attached.SRC when VBUS is at vSafe0V and the SRC.Rd state is detected on exactly one of the CC1 or CC2 pins for at least tCCDebounce.

If the port supports Audio Adapter Accessory Mode, it shall transition to AudioAccessory when the SRC.Ra state is detected on both the CC1 and CC2 pins for at least tCCDebounce.

If the port supports Debug Accessory Mode, it shall transition to UnorientedDebugAccessory.SRC when **VBUS is at vSafe0V and** the SRC.Rd state is detected on both the CC1 and CC2 pins for at least tCCDebounce.

A Source shall transition to Unattached.SRC and a DRP to Unattached.SNK when the SRC.Open state is detected on both the CC1 and CC2 pins.

A Source shall transition to Unattached.SRC and a DRP to Unattached.SNK when the SRC.Open state is detected on either the CC1 or CC2 pin and the other CC pin is SRC.Ra.

A DRP that strongly prefers the Sink role may optionally transition to Try.SNK instead of Attached.SRC when VBUS is at vSafe0V and the SRC.Rd state is detected on exactly one of the CC1 or CC2 pins for at least tCCDebounce.