

USB Type-C ENGINEERING CHANGE NOTICE

Title: Sinking Host-Sourcing Device Swap Clarifications Applied to: USB Type-C® Specification Release 2.1, May 2021

Brief description of the functional changes proposed:

Adds clarification on the requirements for USB PD data swaps in Sinking Hosts and Sourcing Devices. Requirement to implement DR_Swap is already clear but requirement to accept or use DR_Swap when in the wrong data role isn't.

Benefits as a result of the proposed changes:

Interoperability improvement by eliminating situations where a Sinking Host or Sourcing Device ends up stuck in the wrong data state.

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

Intent of existing spec was that the swaps be used to correct data state but there is evidence that for some this was not clear and for those, they would be non-compliant after this spec change.

An analysis of the hardware implications:

No changes to HW likely, more likely a FW update in the PD or port controller.

An analysis of the software implications:

No impact to SW.

An analysis of the compliance testing implications:

Compliance would have to add tests to confirm the new shall statements.

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Actual Change Requested

Changes using modified or new text and tables

(a) Section 4.8.3

From Text:

The Sinking Host shall follow the rules for a DRP (See Section 4.5.1.4 and Figure 4-15). The Sinking DFP shall support [USB PD](#) and shall support the DR_Swap command in order to get the Sink into the DFP data role.

To Text:

The Sinking Host shall follow the rules for a DRP (See Section 4.5.1.4 and Figure 4-15). The Sinking DFP shall support [USB PD](#) and shall support the DR_Swap command. If the Sinking Host ends up in the UFP data role after entering Attached.SNK and establishing an Explicit USB PD contract, it shall accept or send a DR Swap command -in order to get ~~the Sink itself~~ into the DFP data role.

(b) Section 4.8.4

From Text:

The Sourcing Device shall follow the rules for a DRP (See Section 4.5.1.4 and Figure 4-15). It shall also follow the requirements for the Source as Power Source (See Section 4.8.1). The Sourcing Device shall support [USB PD](#) and shall support the DR_Swap command in order to enable the Source to assume the UFP data role.

To Text:

The Sourcing Device shall follow the rules for a DRP (See Section 4.5.1.4 and Figure 4-15). It shall also follow the requirements for the Source as Power Source (See Section 4.8.1). The Sourcing Device shall support [USB PD](#) and shall support the DR_Swap command. If the Sourcing Device ends up in the DFP data role after entering Attached.SRC and establishing an Explicit USB PD contract, it shall accept or send a DR Swap command in order to ~~enable the Source to assume~~get itself into the UFP data role.