

USB4 1.0 ENGINEERING CHANGE NOTICE FORM

Title: Changes Flow for Re-Enabling a Lane in a DFP
Applied to: USB4 Specification Version 1.0

Brief description of the functional changes:

Removes requirements that a Lane restart Lane Initialization after it is re-enabled. Instead, the Connection Manager is required to do a Downstream Port Reset (DPR).

Benefits as a result of the changes:

Simplifies the flow to re-enable a Lane, and aligns with existing Connection Managers and Active Cables.
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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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None

An analysis of the software implications:
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A Connection Manager must initiate a DPR after enabling a Lane.

An analysis of the compliance testing implications:
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No need to verify behavior after re-enabling a Lane and just need to verify a DPR will cause a disconnect an Link bring up “as usual”.
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Actual Change

(a). 4.4.6.2.2, Enable Flow

From Text:

When the *Lane Disable* bit transitions from 1b to 0b, the Lane Adapter enters the CLd state (see Section 4.2.1.2.2).

After receiving a Broadcast RT Transaction with the *Lane0Enabled* bit set to 1b, the Lane 0 Adapter begins Lane Initialization starting from Phase 4.

After receiving a Broadcast RT Transaction with the *Lane1Enabled* bit set to 1b, the Lane 1 Adapter begins Lane Initialization starting from Phase 4.

To Text:

~~When the *Lane Disable* bit transitions from 1b to 0b, the Lane Adapter enters the CLd state (see Section 4.2.1.2.2).~~

~~After receiving a Broadcast RT Transaction with the *Lane0Enabled* bit set to 1b, the Lane 0 Adapter begins Lane Initialization starting from Phase 4.~~

~~After receiving a Broadcast RT Transaction with the *Lane1Enabled* bit set to 1b, the Lane 1 Adapter begins Lane Initialization starting from Phase 4.~~



CONNECTION MANAGER NOTE

After setting the *Lane Disable* bit to 0b in a Lane Adapter, the Connection Manager shall initiate a Downstream Facing Port Reset in the Port that contains the Lane Adapter. See Section 6.9 for more details.

(b). 6.9, Downstream Facing Port Reset

From Text:

When the *Downstream Port Reset* bit in a Downstream Facing Port is set to 1b, a Router shall initiate a disconnect on the Downstream Facing Port by driving its SBTX line low.

To Text:

When the *Downstream Port Reset* bit in a Downstream Facing Port is set to 1b, a Router shall discard any pending Sideband transactions and initiate a disconnect on the Downstream Facing Port by driving its SBTX line low.

(c). 4.4.5, Disconnect

From Text:

This section defines how a disconnect on a USB4 Port is handled.

To Text:

This section defines how a disconnect on a USB4 Port is handled. When a disconnect is required, it takes precedence over all other pending requirements.