

USB4 2.0 ENGINEERING CHANGE NOTICE FORM

Title: USB3 Gen T Objection Integration
Applied to: USB4 Specification Version 2.0

Brief description of the functional changes:
<ol style="list-style-type: none">1. Add a requirement to send PM Packet in Disabled state2. Limit the PM Packet to be sent in U2, U3 and Disabled state3. Fixed a typo from all to any, where it is enough for a single Gen T Port to be in a non low power state to raise an objection for CLx

Benefits as a result of the changes:
Align chapter 4 objections to chapter 9 PM Packet sending.

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
None

An analysis of the hardware implications:
None

An analysis of the software implications:
None

An analysis of the compliance testing implications:
None

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Actual Change

(a). 4.2.1.6.3 Objections

A USB4 Port shall assert an objection to enter CL2 state if:

...

- The Lane 0 Adapter is referenced in an *Egress Adapter* field of a USB3 Gen T Adapter's Routing Table, and ~~all~~any of the USB3 Gen T Ports that are mapped to the USB3 Gen T Adapter are not in Disabled, U2 or U3 state.
- The Lane 0 Adapter is referenced in an *Egress Adapter* field of a USB3 Gen T Adapter's Routing Table, ~~one and any~~any of the USB3 Gen T Ports that are mapped to the USB3 Gen T Adapter is in U2 state, and the *U2CL2 Enable* bit in USB3 Gen T Adapter Configuration Space is set to 0b.

...

A USB4 Port shall assert an objection to enter CL1 state if:

...

- The Lane 0 Adapter is referenced in an *Egress Adapter* field of a USB3 Gen T Adapter's Routing Table and ~~all~~any of the USB3 Gen T Ports that are mapped to the USB3 Gen T Adapter are not in Disabled, U2 or U3 state.

(b). 9.1.4 PM Packet (Gen T Only)

The USB3 Gen T Adapter is allowed to send PM Packet in the following conditions:

- When a USB3 Gen T Port transitions to the U2 state, the USB3 Gen T Adapter shall send a PM Packet over the Path that corresponds to the USB3 Gen T Port. The USB3 Gen T Adapter sends one PM Packet per transition to U2. If the *U2CL2 Enable* bit is set to 1b in the Gen T Port Configuration Space, then the *CLx State* field shall be set to 11b (both CL1 and CL2 are allowed). Otherwise, the *CLx State* field shall be set to 01b.
- When a USB3 Gen T Port transitions to the U3 state, the USB3 Gen T Adapter shall send a PM Packet over the Path that corresponds to the USB3 Gen T Port. The USB3 Gen T Adapter sends one PM Packet per transition to U3. The *CLx State* field shall be set to 11b (both CL1 and CL2 are allowed).
- When a USB3 Gen T Port transitions to the Disabled state, the USB3 Gen T Adapter shall send a PM Packet over the Path that corresponds to the USB3 Gen T Port. The USB3 Gen T Adapter sends one PM Packet per transition to Disabled. The *CLx State* field shall be set to 11b (both CL1 and CL2 are allowed).