

USB4 1.0 ENGINEERING CHANGE NOTICE FORM

Title: Exit Sleep When UFP Disconnected
Applied to: USB4 Specification Version 1.0

Brief description of the functional changes:

When a Router is disconnected on its UFP while in Sleep it should move to Uninitialized Unplugged state.

Benefits as a result of the changes:

A full description of a Router behavior when its UPF is disconnected while in Sleep state.

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

USB4 1.0 ENGINEERING CHANGE NOTICE FORM

Actual Change

(a). Section 4.5.4, page 189

From Text:

A Wake on USB4 event is used to propagate a wake event throughout a USB4 Fabric. A Router shall assert SBTX to logical low for tWake time to indicate a Wake on USB4 event.

After detecting a wake event, a Router shall:

1. Issue a Wake on USB4 event on all connected USB4 Ports by asserting SBTX to logical low for tWake time.
 - If the detected wake event is a Wake on USB4 event, the Router may issue a Wake on USB4 event to the USB4 Port where the Wake on USB4 event arrived, but is not required to do so.
2. Begin Lane Initialization on all connected USB4 Ports.
 - A USB4 Port may ignore any Transactions received before it is ready for Lane Initialization. The transmitting USB4 Port shall retry the Transactions as defined in Section 4.1.1.2.5.
3. For every Adapter that reaches CL0 state, the Router shall send a Hot Plug Event Packet to the Connection Manager with the *UPG* bit set to 0b.

To Text:

A Router exits Sleep state when one of the following occurs:

- An Upstream Facing Port Disconnect (see Section 4.5.4.1)
- Detection of a Wake on USB4 event (see Section 4.5.4.2)

4.5.4.1 Upstream Facing Port Disconnect

When a Router detects a disconnect on the UFP, it shall exit sleep state. See Section 4.4.5.1 for how a Router detects and handles an UFP disconnect.

4.5.4.2 Wake on USB4 Event

A Wake on USB4 event is used to propagate a wake event throughout a USB4 Fabric. A Router shall assert SBTX to logical low for tWake time to indicate a Wake on USB4 event.

After detecting a wake event, a Router shall:

1. Issue a Wake on USB4 event on all connected USB4 Ports by asserting SBTX to logical low for tWake time.
 - If the detected wake event is a Wake on USB4 event, the Router may issue a Wake on USB4 event to the USB4 Port where the Wake on USB4 event arrived, but is not required to do so.

USB4 1.0 ENGINEERING CHANGE NOTICE FORM

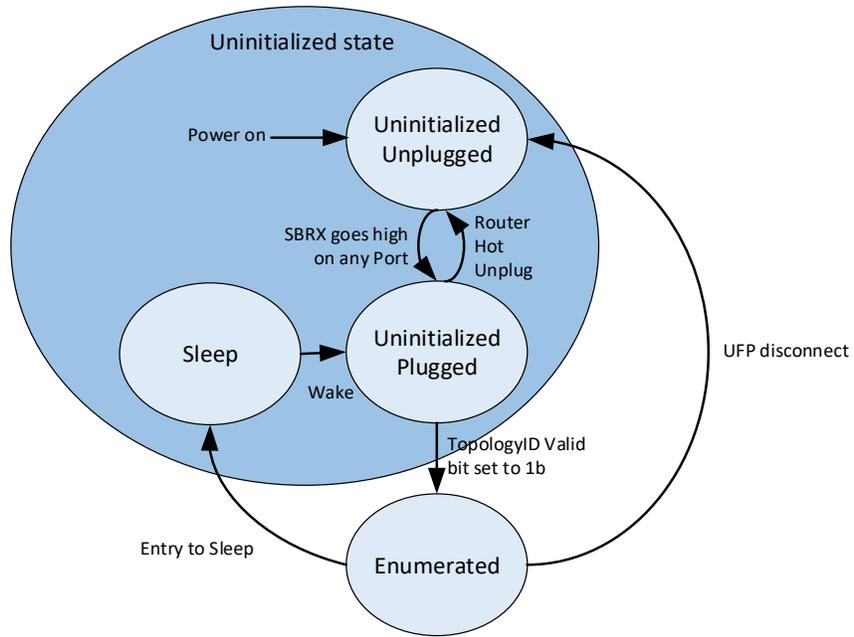
2. Begin Lane Initialization on all connected USB4 Ports.
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3. For every Adapter that reaches CL0 state, the Router shall send a Hot Plug Event Packet to the Connection Manager with the *UPG* bit set to 0b.

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(b). Figure 6-2

From Text:

Figure 6-2. Router State Machine



To Text:

Figure 6-2. Router State Machine

