

USB 3.2 ENGINEERING CHANGE NOTICE

Title: tPollingSCDLFPSTimeout timer definition change
Applied to: USB 3.2_r1.0 Sep. 22, 2017

Brief description of the functional changes:

There are many known legacy gen1 devices which are not compliant to spec. These devices will not transition to polling.RXEQ unless the link partner will transition to polling.RXEQ first (“faulty devices”). There is already an ECN in place to accommodate this from Host perspective. This ECN is intended for Retimers to accommodate these faulty devices when the Host also implements the corresponding ECN.
This ECN changes the definition of the tPollingSCDLFPSTimeout timer.

Benefits as a result of the changes:

Retimers that implement this ECN will be able to interop with the faulty devices when the corresponding ECN is implemented in the Host.

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

1. No impact to USB 3.0 ecosystem.
2. No impact to any early USB3.1 implementation.

An analysis of the hardware implications:

Any New Retimers will need to comply with this ECN.

An analysis of the software implications:

None

An analysis of the compliance testing implications:

Compliance testing will be augmented to accommodate this change.

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Actual Change

(a). From Text : Section E.3.4.1.1

- The re-timer shall implement a `tPollingSCDLFPSTimeout` timer to monitor the absence of LFPS signal at both ports after the completion of SuperSpeed Polling.LFPS handshake.

(a). To Text :Section E.3.4.1.1

- The re-timer shall implement a `tPollingSCDLFPSTimeout` timer at both ports to monitor the absence of LFPS signal at both ports after the completion of SuperSpeed Polling.LFPS handshake. at its receivers.

(b). From Text : Section E.3.4.1.2

- The re-timer shall transition to `Polling.RxEQ` for SS operation if the following two conditions are met.
 - Re-timer successfully observed on each port that at least four consecutive `Polling.LFPS` bursts are transmitted after receiving one.
 - Upon timeout of the `tPollingSCDLFPSTimeout` timer.

(b). To Text :Section E.3.4.1.2

- The re-timer shall transition to `Polling.RxEQ` for SS operation if the following two conditions are met.
 - Re-timer successfully observed on each port that at least four consecutive `Polling.LFPS` bursts are transmitted after receiving one.
 - Upon timeout of the `tPollingSCDLFPSTimeout` timer on either one of the ports.