USB4 1.0 ENGINEERING CHANGE NOTICE FORM

Title: Modify Common-Mode Return-Loss Mask of Captive Devices

Applied to: USB4 Specification Version 1.0

Brief description of the functional changes:
Changes Captive Devices common mode return loss mask as following: 1) Set -4dB threshold at frequencies between 50MHz to 2.5GHz 2) Set -2dB threshold at frequencies between 2.5GHz (not inclusive) to 12GHz

Benefits as a result of the changes:
As the USB-C mated connector and cable have impact on the CM RL results, the additional connector and cable included in the captive devices measurement setup (compared to the non-captive case) must be factored in.

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
No issues are expected

An analysis of the hardware implications:
No hardware implications (Captive devices Common Mode Return Loss spec is relaxed for accounting additional connector and cable)

An analysis of the software implications:
None

An analysis of the compliance testing implications:
Need to change the common mode return loss pass criteria for captive devices

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Actual Change

(a). Section 3.6.2.4

Transmitter common-mode return-loss measurements shall be referenced to a single-ended impedance of 42.5 Ω. When measured at TP3, the common-mode return loss shall not exceed the limits given in the following equation:

$$\text{SCC22(f)} = \begin{cases} -~~64 & 0.05 < f_{GHz} \leq 2.5 \\ -32 & 2.5 < f_{GHz} \leq 12 \end{cases}$$

(b). Section 3.6.3.3

Receiver common-mode return-loss measurements shall be referenced to a single-ended impedance of 42.5 Ω. When measured at TP2, the common-mode return loss shall not exceed the limits given in the following equation:

$$\text{SCC11(f)} = \begin{cases} -~~64 & 0.05 < f_{GHz} \leq 2.5 \\ -32 & 2.5 < f_{GHz} \leq 12 \end{cases}$$