

# USB Type-C ENGINEERING CHANGE NOTICE

**Title: USB 2.0 Attenuation Update**

**Applied to: USB Type-C® Spec R2.1 – May 2021**

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| <b>Brief description of the functional changes proposed:</b>   |
| Updated D+/D- attenuation for USB Type-C to USB Type-C cable assemblies and USB Type-C to Legacy USB cable assemblies. |

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| <b>Benefits as a result of the proposed changes:</b>        |
| Match the USB2 cable behavior and enable longer USB2 cables |

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| <b>An assessment of the impact to the existing revision and systems that currently conform to the USB specification:</b>   |
| The requirements are relaxed, current cables conform to the USB Spec. will meet the new requirement. Study indicates that the USB Type-C USB2 cable meets the new requirements works for USB2 systems. |

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| <b>An analysis of the hardware implications:</b> |
| The length of the USB2 cable can be extended     |

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| <b>An analysis of the software implications:</b> |
| None   |

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| <b>An analysis of the compliance testing implications:</b> |
| None   |

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## Actual Changes:

### (a). For Table 3-27 in Section 3.7.2.7

#### From Text:

| Items                  | Descriptions and Procedures  | Requirements  |
|------------------------|--|---|
| D+/D- Pair Attenuation | EIA 364 – 101<br>This test ensures the D+/D- pair of a cable assembly is able to provide adequate signal strength to the receiver in order to maintain a low error rate. | $\geq -1.02$ dB @ 50 MHz<br>$\geq -1.43$ dB @ 100 MHz<br>$\geq -2.40$ dB @ 200 MHz<br>$\geq -4.35$ dB @ 400 MHz |

#### To Text:

| Items                  | Descriptions and Procedures  | Requirements  |
|------------------------|--|---|
| D+/D- Pair Attenuation | EIA 364 – 101<br>This test ensures the D+/D- pair of a cable assembly is able to provide adequate signal strength to the receiver in order to maintain a low error rate. | $\geq -1.52$ dB @ 50 MHz<br>$\geq -2.03$ dB @ 100 MHz<br>$\geq -2.91$ dB @ 200 MHz<br>$\geq -4.35$ dB @ 400 MHz |

### (b). For Table 3-30 in Section 3.7.5.1

#### From Text:

| Items                  | Descriptions and Procedures  | Requirements  |
|------------------------|--|---|
| D+/D- Pair Attenuation | EIA 364 – 101<br>This test ensures the D+/D- pair of a cable assembly is able to provide adequate signal strength to the receiver in order to maintain a low error rate. | $\geq -1.02$ dB @ 50 MHz<br>$\geq -1.43$ dB @ 100 MHz<br>$\geq -2.40$ dB @ 200 MHz<br>$\geq -4.35$ dB @ 400 MHz |

#### To Text:

| Items                  | Descriptions and Procedures  | Requirements  |
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| D+/D- Pair Attenuation | EIA 364 – 101<br>This test ensures the D+/D- pair of a cable assembly is able to provide adequate signal strength to the receiver in order to maintain a low error rate. | $\geq -1.52$ dB @ 50 MHz<br>$\geq -2.03$ dB @ 100 MHz<br>$\geq -2.91$ dB @ 200 MHz<br>$\geq -4.35$ dB @ 400 MHz |