

USB 3.2 ENGINEERING CHANGE NOTICE

Title: BLR JTF - Jitter Gain limit change

Applied to: USB 3.2_r1.0 Sep. 22, 2017

Brief description of the functional changes:

Bit-level re-timers which use the recovered clock from the input data stream as the input clock for the transmitter can pass on low frequency jitter, which can in turn result in accumulation of excessive low frequency jitter in systems with cascaded bit -level Retimers. Current JTF Jitter Gain limit was chosen analytically, empirical results of early Retimers implementations show a higher realistic jitter gain below 500kHz with no impact on Jitter tolerance requirements contained in Section 6.8.5.
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This ECN changes the Max. Limit of JTF Jitter Gain parameter.

Benefits as a result of the changes:

Simplification of Retimer implementation and alignment with USB4 specification.

An assessment of the impact to the existing revision and systems that currently conform to the USB specification:
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None - No existing systems were tested and certified to current specification.
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An analysis of the hardware implications:
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Any New Retimers will need to comply with this ECN.

An analysis of the software implications:
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None.

An analysis of the compliance testing implications:
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Compliance testing will be augmented to accommodate this change.
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Actual Change

(a). From Text : Table E-3

Table E-3. Bit-Level Re-timer Jitter Transfer Function Requirements

Term	Gen 1x1	Notes
<i>Jitter Gain for $f < 500\text{kHz}$</i>	0.1dB (max)	Normative requirement.
<i>Jitter Gain for $f > 500\text{kHz}$</i>	0.0dB (max)	Normative requirement.

(a). To Text : Table E-3

Table E-3. Bit-Level Re-timer Jitter Transfer Function Requirements

Term	Gen 1x1	Notes
<i>Jitter Gain for $f < 500\text{kHz}$</i>	0.15dB (max)	Normative requirement.
<i>Jitter Gain for $f > 500\text{kHz}$</i>	0.0dB (max)	Normative requirement.