

To: T10 Technical Committee
From: Guillaume Fortin (Guillaume_Fortin@pmc-sierra.com)
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Subject: T10/08-032r1 Proposed modifications to SSC profile definition

Revision History

Revision 1 (08 January 2008)

Related Documents

sas2r13 - Serial Attached SCSI 2 revision 13

Overview

This proposal makes additions to the SSC specifications to improve the definition of the SSC profile.

Suggested Changes

The last two paragraphs of section 5.3.8.1 read:

“SSC-induced high-frequency jitter is included in the deterministic jitter (DJ) and consequently in total jitter (TJ) at the transmitter output. The jitter is measured after the application of a single pole high-pass frequency-weighting function that progressively attenuates jitter at 20 dB/decade below a frequency of $((\text{bit rate}) / 1\ 667)$.

Editor’s Note 21: A more sophisticated attenuation model will be included in SAS-2 to accommodate SSC.”

It is proposed to replace these paragraphs with:

“SSC-induced high-frequency jitter is included in the deterministic jitter (DJ) and consequently in total jitter (TJ) at the transmitter **device** output. The SSC-induced jitter shall be measured using a D30.3 pattern after the application of the jitter transfer function (JTF) that progressively attenuates jitter at 40 dB/decade below a nominal frequency of 2.6 MHz. The jitter transfer function shall have a response that varies with transition density. Refer to section 5.3.5.1 for detailed information regarding the JTF.

The slope of the frequency deviation shall not exceed 1200 ppm/μs when averaged over any 0.3 μs (± 0.01 μs) window of the SSC modulation profile. A triangular SSC modulation profile has a slope of ~310 ppm/μs and meets this requirement. Other patterns may not.

A modulation profile that has a slope of 1200 ppm/μs over 0.3 μs will create a residual jitter of approximately 25 ps (or 0.15 UI at 6 Gb/s) after filtering by the JTF. This corresponds to the total DJ budget of the transmitter **device**, which **does not allow the transmitter device** to contribute any other type of deterministic jitter.

Activation or deactivation of SSC on a link that is not DC idle shall be done without violation of the transmit jitter specifications after filtering through the JTF.”