To: T10 Technical Committee
From: Guillaume Fortin (Guillaume_Fortin@pmc-sierra.com)
Date: 20 December 2007
Subject: T10/08-032r0 Proposed modifications to SSC profile definition

Revision History
Revision 0 (20 December 2007) first revision

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 paragraph 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 ((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 output. The SSC-induced jitter shall 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 ($\pm$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, which must not 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."