

To: T10 SPI-3 working group
From: Bill Ham, Zane Daggett
Date: March 09, 1999
Subject: Report from the SCSI Testing SSWG held on March 02, 1999 at Hitachi in Manchester, NH.

The meeting was well attended by several cable manufacturers and users of these cables. The focus is almost exclusively on round, shielded cables.

A new rev of the testing document was reviewed.

A baseline set of parameters was discussed that incorporates, transmission line impedance, capacitance, propagation time and propagation time skew, attenuation, and cross talk. The SFF HSS testing procedure for TDR was adopted as the baseline for testing SCSI cables. The importance of resonance in many of the tests was underscored.

Time domain vs frequency domain discussions are active in the some of the measurements - notably cross talk and possibly for propagation time.

A major concern is surfacing relating to the schedule of completing the work on the cable specifications and the desired schedule for SPI-3 technical stabilization. If the cable work does not complete in synchronization with SPI-3 there will almost certainly be a different specification and probably incompatible specification for SPI-3 and SPI-4 cables. In addition, the requirements for SPI-3 may not be guaranteed.

Cross talk specifications are under active discussion and some data was presented by Hitachi. The values vary considerably over frequency and cable length. Whether time domain or frequency domain should be considered.

LSI Logic presented some simulation results that consider the frequency dependence of propagation time on frequency. No specific scheme has been agreed for doing these measurements and it is not clear whether this parameter needs to be considered for SPI-4.

The proposal for revised specifications for SPI-3 that was submitted at the last SPI-3 working group was revalidated.

The baseline specifications are:

- Transmission line impedance: SE 72 to 96 ohms, Diff 110 to 135 ohms
- Propagation time skew (nominal fundamental frequency) 24 ps/ft max
- Single ended capacitance: TBD
- Dfferential capacitance: TBD
- Differential cross talk (any pair to any pair) [note that we will probably need all pairs to any pair for SCSI traffic] value of several percent
- Attenuation: 14 dB max at 200 MHz, 16 dB max at 400 MHz

It was noted that a 500 MHz sinusoid is needed to achieve the rise time of a SPI-2 signal for cross talk measurement.

Considerable work remains to specify the details of the tests and to agree on the parameters.

The next meeting is scheduled for April 06, 1999 in Manchester, NH at a site to be determined.