

To: T10 working group
From: Bill Ham, Zane Daggett
Subject: SPI-3 cable specification working group report
Date: April 07, 1999

The cable specification working group met on April 06, 1999 in Manchester, NH hosted by Hitachi. The meeting was well attended by virtually all of the domestic SCSI cable manufacturers and a couple of system

The set of measurements to be addressed for SPI-3 were finalized:

Local impedance: TDR measurements at 0.5 and 3 ns (both SE and DIFF)

Extended distance impedance: Swept frequency network analyzer (100K to 1G) - acceptable values TBD - effect of resonance will affect sample required - DIFF only

Capacitance: SE using 100K and 1M RLC meter

Capacitance stability: 100k to 1 gig no more than +/- 1% variation

Propagation time and propagation time skew: measurement methods still under discussion

Single pulse mid point (averaged appropriately to remove jitter) and clock like data patterns are both possible methods. Single pulse gives slower propagation time due to large low frequency content. Clock like patterns Frequency dependence of propagation time estimated as no more than 3 ns over 25 meters - therefore ignored as this is only a 3% effect
Skew pegged at 25 ps/ft max pair to pair.

Attenuation: swept frequency 100K to 1 Gig (max attenuation at 200M at 25 meters) using special baluns and calibration methods

Cross talk: near end only: single pulse method - peak differential noise is the measured value

Expect complete document for SPI-3 at the next meeting (May 11, 1999 in Manchester NH).

Selection of some candidate items for SPI-4 were identified:

- Test requirements for the complete cable assembly (including assembled connectors)
- Better use of the swept frequency response data (impedance, cross talk, attenuation)
- Inclusion of the effects of frequency dependent propagation time
- Defining the properties of worst case launched signals
- Following the model established in SFF HSS testing to specify the interconnect performance requirements based on signal degradation - not on parameters of the cable itself