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|   |   |   |   |   |   |   |                DATE:       August 26, 1997
+---------------------------+                FROM:       Bill Ham
Storage Bus Technical Office                 LOC/MS:     SHR3-2/W8
334 South Street                             DEPT:       SUBSYSTEMS
Shrewsbury, MA 01545                         EXT PH:     508 841-2629
                                             DTN PH:     237-2629
TO: SPI-2 Distribution                       EXT FAX:    508 470-0321
                                             DTN FAX:    237-5266
                                             PAGER:      888 956-8925
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SUBJECT: Modifications for interconnect specifications in SPI-2 that force specific construction implementation details

This document proposes significant modifications to the wording and method for specifying SCSI interconnect components including cables.

The present draft of SPI-2 contains wording that requires certain methods of construction of SCSI cables. This wording limits the creativity and innovation possible both by the user and by the manufacturer of the interconnect components. It is not following the mandate of specifying the performance requirements only for components.

Specifically, I propose the following wording to replace anything that presently exists in the normative section of the document related to:

- wire gauge
- stranded or solid wire
- attenuation per foot
- propagation velocity per foot
- skew per foot

in any cable and

- pair placement

in round cables with:

> "SCSI interconnect shall deliver compliant signals to every device connector on the bus when driven with a minimum signal for the transmission mode being used and when terminated on both ends with compliant termination. Minimum signals are those with minimum specified amplitude and minimum specified timing margin at the driver or source device connector. Signals for this requirement include TERMPWR, DB(0) thru DB(15), DB(P), DB(P1), C/D, I/O, MSG, BSY, SEL, ATN, REQ, ACK, and RESET.
>
> SCSI interconnect is defined as the electrical media (including connectors and passive loads) used to connect the TERMPWR, terminators, drivers and receivers in a SCSI bus."

as the normative requirement.

[Note that this proposal does not remove the requirements on characteristic impedance, capacitance per foot, total end-to-end attenuation, total end-to-end skew, or total end-to-end propagation time since these are performance requirements on the signals. It does allow, for example, shorter interconnect to be much "worse" per foot than longer interconnect and still work. It also allows the intended trade-off between device load skew and cable propagation velocity skew in LVD applications. Many other desirable and de-facto trade-offs are also enabled within the standard with this change.]

The present requirements on wiring placement within round cables should be replaced with the same wording presently used but as an implementers note or in an informative annex advising on methods of reducing cross talk.

Advice warning against using many bus path connectors and small size wire for long interconnect should be noted due to the attenuation risk. Creating long busses through the use of series connections of multiple cable assemblies may cause the requirements for short assemblies to become more like the longer assemblies.