

Accredited Standards Committee\*  
X3, Information Technology

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Reply to: Mr. John Lohmeyer  
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To: X3T10 Membership  
From: John Lohmeyer, X3T10 Chair  
Larry Lamers, X3T10 Vice Chair  
Subject: SPI-2 Working Group -- October 10, 1996  
St. Petersburg Beach, FL

A small SPI-2 Working Group meeting was held October 10, 1996 in St. Petersburg Beach, FL hosted by Charles Brill of AMP, Inc. John Lohmeyer thanked Chuck for hosting the meeting and the exciting weather (TS Josephine) earlier in the week.

Attendance at working group meetings does not count toward minimum attendance requirements for X3T10 membership. Working group meetings are open to any person or organization directly and materially affected by X3T10's scope of work. The following people attended the meeting:

Name	S	Organization	Electronic Mail Address
Mr. Lawrence J. Lamers	A	Adaptec, Inc.	ljlammers@aol.com
Mr. Michael Wingard	O	Amphenol Interconnect	mikwingard@aol.com
Mr. Louis Grantham	P	Dallas Semiconductor	grantham@dalsemi.com
Dr. William Ham	A#	Digital Equipment Corp.	ham@subsys.enet.dec.com
Mr. John Lohmeyer	P	Symbios Logic Inc.	john.lohmeyer@symbios.com
Mr. Paul D. Aloisi	P	Unitrode Corporation	aloisi@unitrode.com

6 People Present

Status Key: P - Principal  
A,A# - Alternate  
O - Observer  
L - Liaison  
V - Visitor

The group focused on identifying the integration issues of merging the SPI, Fast-20, SIP, and SPI-2 Rev 11 documents into a unified SPI-2 document. Larry Lamers prepared the following issue list to document the meeting results:

#### SPI-2 Unified Document (SPUD) Integration Issues

1. Active negation - map of existance (see X3T10/95-295); map of intensity (use F20 envelope)
2. SE termination, max/min current & sinking of current (see X3T10/96-222r1); suggest min current 20 milliamps at 0.2 v D.C. and a max of 25.4 milliamps at 0.2 v D.C.; don't require driver to sink this to avoid re-qualify; add a min at 0.5 v D.C.; how to deal with non-linear terminators; do we need a duty-cycle spec? suggest 20 asserted signals for wide, 12 on narrow, 37 on 32-bit. Add exception for a contained bus (e.g., laptop) of less than 0.3 meters. Add a 12.5 pf max capacitance for terminator.
3. Leakage spec increased for LVD multi-mode drivers to 20 micro-amps - Resolve by specifying one for each driver type.

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4. Latching & counting - require that they be a monatomic action for hot plugging - possibly an annex or implementation note.
5. Ground - power, logic & ground drivers (25-pin power & ground connected (SFF-8040)), signal ground and ground ground for tables defining SE signals.
6. SE Receiver - hysteresis (.3), input levels (adopt F20), pin leakage (same), glitch filtering (enable of first detection of a transition for 'x' duration). Need an algorithm to determine 'x'.
7. SE Drivers - slew rate (use F20 specs);
8. 16 or 32 devices? 32-bit data path? Is it a single segment draft? Should expanders be included? Suggest that SPI-2 is 16 loads per segment max; allow 32-bit data path and 32 SCSI IDs addressability when using VHDCI connectors with primary and secondary cables
9. Case 4 hot plugging - requires SCA-2 connectors to allow precharge, a resistive contact may also work, needs research to determine max disturbance.
10. Cable specifications - impedance (loaded & unloaded), skew, wire gauge, attenuation
11. Add Q-cable pinouts
12. Micro SCSI pinouts

The group discussed some possible solutions for several of the issues. Since the group was quite small, the resolution of these issues was deferred to the Palm Springs meeting November 4th, where a larger group is expected.

Bill Ham prepared X3T10/96-252 on Case 4 hot plugging for SPI-2. It outlines three possible methods of achieving data integrity with LVD case 4 hot plugging. This document (96-252r0.doc) will be placed on the SCSI BBS and on the ftp site (<ftp://ftp.symbios.com/pub/standards/io/x3t10/document.96/96-252r0.doc>).

The next meetings of the SPI-2 Working Group are: November 4, 1996 in Palm Springs, CA and December 5, 1996 in Bloomington, MN (with X3T11).