

Attendance:

Mr. Paul von Stamwitz	AMCC
Mr. Barry Olawsky	Hewlett Packard Co.
Mr. Bill Ham	Hewlett Packard Co.
Mr. Rob Elliott	Hewlett Packard Co.
Mr. George Penokie	IBM
Mr. Bill Bissonette	Intel Corporation
Mr. Mike Jenkins	LSI Logic
Mr. Bill Lye	PMC-Sierra
Mr. Alvin Cox	Seagate Technology
Mr. Bill Gintz	Sues
Mr. Don Schulte	Vitesse

11 People Present

Agenda:

- 1) 05-007r0 SAS-1.1 external cable electrical specification
<http://www.t10.org/ftp/t10/document.05/05-007r0.pdf>

Notes from last call:

Maximum insertion loss should be 16 instead of 100 +/-15.

Barry indicated that the 30dB crosstalk number may only be good for 1,5Gbps. -26 may be more realistic for 3,0 Gbps. Concerns about sum of squares methodology, assumption of asynchronous signals, and common mode noise. Believe that the reference to 8 meter cable should be reduced to 6 meter. Intra-pair skew of 20 pS may limit cable length. More work required. Revision 0 was intended to be a starting point to work from.

12/16:

Barry to have data after January 1.

Notify STA that 8 meter reference cable length should be reduced to 6 meters.

- 2) 04-370r2 SAS-1.1 Merge IT and IR with XT and XR
<ftp://ftp.t10.org/t10/document.04/04-370r2.pdf>

Notes from last call:

Compliance point references in tables need to reference probe points. That change is also to be incorporated to eliminate confusion caused by the compliance point references.

12/16:

FC-PI-2 Annex B could be a drop in with editorial for measurement of signal and return loss.

Review at January T10.

Look at possible modification to figures moving the transmitter device and receiver device labels to be on top of the dotted lines representing them.

Barry to supply verification data on SATA 3Gbps eye opening in January.

- 3) 04-375r0 SAS 1.1, Phy hot plug and transients on SAS and SAS/SATA environments
<http://www.t10.org/ftp/t10/document.04/04-375r0.pdf>

Notes from last call:

Item missed: Dick Uber to find out what SATA devices are high impedance.

Mode transition definition initial list:

Damage causing transients:

- 1 power on / power down of initiator / expander
- 2 power on / power down of target / expander
- 3 enable / disable of driver circuitry
- 4 enable / disable of receiver common mode circuitry
- 5 mating a target to a host / expander
- 6 mating a cable to a target / host / expander

Analog changes which can interfere with signal integrity, but which are unlikely to cause hardware damage:

- 7 adjustment to driver amplitude
- 8 enable / disable of pre-emphasis driver
- 9 adjustment of amplitude of pre-emphasis driver
- 10 adjustment of terminator impedance (recentering to compensate for thermal drift)

Note 1: These analog changes need an unknown settling time before the device can be expected to properly handle OOB and to transfer data with the expected BER.

Note2: Settling time for the amplitude change (7) between SATA and SAS levels on dual mode expanders is already accommodated in the standard.

External changes which may interfere with signal integrity:

11 One of events 1 – 6 (above) which occurs on an adjacent port's lines in a multi-port cable. The resulting common mode coupling may exceed out common mode rejection budget.

12/16:

Alvin to draft initial wording for review. Where would it fit? Note in table, text with figures, or definition?

4) 05-009r0 SAS-1.1 OOB AMPLITUDE MEASUREMENT METHOD

<http://www.t10.org/ftp/t10/document.05/05-009r0.pdf>

Notes from last call:

Revision of proposal will delete the equipment reference and will consider first bit issues with meeting minimum amplitude requirements.

12/16:

First bit amplitude is okay. No need for exceptions. Bill to look into SATA behavior concerning lock up issues.

5) New items

OOB algorithm for expanders/initiators allowing attachment of SATA devices to be reviewed and a new version to be proposed by Bill Bissonette to avoid issues with overvoltage to SATA devices.

Updated figures for connectors are being received from Molex.

Next call: January 6, 2004
Thursday, 10 am CST.
Same webex and call number for all calls:

Webex:
seagate.webex.com (no www)
Meeting number: 825549498
Meeting password: section5

Toll Free Dial in Number: (866) 279-4742
International Access/Caller Paid Dial In Number: (309) 229-0118
PARTICIPANT CODE: 3243413