

Attendance:

Mr. Henry Wong	Agilent
Mr. Kevin Marks	Dell
Mr. Barry Olawsky	Hewlett Packard Co.
Mr. Bill Bissonette	Intel Corporation
Mr. Mike Jenkins	LSI Logic
Mr. Dick Uber	Maxtor
Mr. Bill Lye	PMC-Sierra
Mr. Alvin Cox	Seagate Technology
Mr. Don Schulte	Vitesse
Dave Springberg	Vitesse

10 People Present

Agenda:

05-007r0 SAS-1.1 external cable electrical specification

<http://www.t10.org/ftp/t10/document.05/05-007r0.pdf>

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.

04-370r1 SAS-1.1 Merge IT and IR with XT and XR

<http://www.t10.org/ftp/t10/document.04/04-370r1.pdf>

Discussed changing table format. Met no opposition so the new revision of the proposal will include revised tables. 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.

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>

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.

New items:

05-009r0 SAS-1.1 OOB AMPLITUDE MEASUREMENT METHOD  
<http://www.t10.org/ftp/t10/document.05/05-009r0.pdf>

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

05-010r0 SAS 1.1 External Connector Interoperability  
<http://www.t10.org/ftp/t10/document.05/05-010r0.pdf>

Minimal discussion. Noted that the proposal has been posted and available for review by those interested.

Next call: December 16, 2004  
Thursday, 10 am CST.  
Same webex and call number for all calls:

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