

Attendance:

Mr. Paul von Stamwitz	AMCC
Mr. Kevin Marks	Dell
Mr. Barry Olawsky	Hewlett Packard Co.
Mr. Rob Elliott	Hewlett Packard Co.
Mr. George Penokie	IBM
Mr. Bill Bissonette	Intel Corporation
Mr. Michael Rost	Molex
Mr. Bill Lye	PMC-Sierra
Mr. Alvin Cox	Seagate Technology
Mr. Allen Kramer	Seagate Technology
Mr. Kalev Sepp	Tektronix
Mr. Dave Springberg	Vitesse

12 People Present

Agenda:

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

Barry to have data after January 1.
<http://www.t10.org/ftp/t10/document.05/05-025r0.pdf>

Barry showed data indicating additive crosstalk. Plans to propose new table values on next call.

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:

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.

1/6/05: No updates or additional information discussed on call.

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>

Mode transition: A mode transition is defined as an event that may result in a measurable transient due to the response of the transmitter device or receiver device. The following conditions constitute a mode transition: enable / disable of driver circuitry, enable / disable of receiver common mode circuitry, hot plug event, adjustment of driver amplitude, enable / disable of pre-emphasis / de-emphasis, adjustment of terminator impedance.

Alvin posted a proposal (05-029r0) after today's call taking the note from the existing table, adding the definition above, and the two existing figures to be combined into a separate new subsection of section 5.

<http://www.t10.org/ftp/t10/document.05/05-029r0.pdf>

4) 05-009r1 SAS-1.1 OOB AMPLITUDE MEASUREMENT METHOD [Bissonette]

<http://www.t10.org/ftp/t10/document.05/05-009r1.pdf>

Rev 1 was acceptable to group. Final review at PHY WG meeting.

5) 05-019r0 SAS 1.1 OOB For SAS/SATA Support -- Proposed Changes

<http://www.t10.org/ftp/t10/document.05/05-019r0.pdf>

Very controversial subject as initially proposed. Question regarding applicability to ALL SAS PHY's was strongly rejected.

Discussion highlights:

- Currently SAS target devices are not required to send OOB at SATA levels.
- Existing product for initiators/expanders are designed to switch levels between SAS and SATA.
- OOB is done at a relatively slow rate and the envelope is important. The OOB burst content is not intended to be decoded but rather the burst existence and gap duration between bursts.
- The current level switching sequence allows for significant attenuation in SAS-only systems that could be lost if initiator/expander devices were only allowed to transmit the initial OOB signal at SATA levels.
- After COMSAS is recognized, the initiator/expander changes to SAS levels. Is it possible to construct a system where the OOB level is required to be more than 600mV at the transmitter end or is the TCTF the actual worst case system loss condition?
- Are there SATA devices that could actually be damaged by a 1600mV OOB signal? This is brought into question, especially with the current evaluation of an amplitude change proposal that was submitted to both SAS and SATA standards groups.
- The biggest risk may be mobile SATA drives. They may be presently used on blade servers and the controllers on these drives may be found on desktop SATA applications.

Suggested changes to the proposal:

- Specify IR rather than IT.
- Include a maximum IR voltage for PHY's not supporting attachment to SATA devices.
- Remove the comment regarding "ALL SAS PHY's" as the proposal is in reference to initiators and expanders rather than targets.
- Note that table and figure numbers may change due to other proposals.

6) 05-023r0 SAS-1.1 Connector figures [Kachlic and Elliott]

<http://www.t10.org/ftp/t10/document.05/05-023r0.pdf>

Suggested the addition of single port cable picture. Rob will update accordingly.

7) New items

No new items.

Next call: January 13, 2004
Thursday, 10 am CST.
Same webex and call number for all calls:

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