

Attendance:

Richard McMillan	Adaptec
Bernhard Laschinsky	Agere
Rob Elliott	HP
Mark Seidel	Intel
Mike Jenkins	LSIL
Russ Brown	Maxtor
Juzer Mogri	NEC Electronics Inc.
Alvin Cox	Seagate
Al Kramer	Seagate

9 people present.

1. LED driver requirements

Barry Olawsky presentation concerning system level impact of 15mA current, 3.6V max.

Carryover –

Presentation to be made on 9/23 conference call.

2. Test Patterns

What should we do since scrambling of address affects data pattern to achieve on-the-wire results?

Suggestion: Describe on-the-wire pattern and leave implementation to be vendor specific. This may include special secret test set-up codes to disable scrambling. Other ideas?

It was determined that since there is a fixed 24 byte header, that the scrambling offset can be factored into the data pattern such that the CJTPAT can be accomplished by a fixed pattern, independent of the address. Aligns sent during the transmission could be negative on the test pattern effectiveness. A note should be added concerning aligns during this test pattern. Bernhard to revise pattern and work with Alvin to document.

A description of the CRPAT will be included but no instructions on how to achieve it on the wire.

All participating on the call are to check with their safety agency experts to determine if a documented means of disabling scrambling requires the system to be tested in that mode.

3. Common mode specification

Russ is concerned that long cables may not allow the skew aspect to be covered by the common mode specification. He will perform additional tests this week and share results on the next call.

4. Test loads

Posting due 9/20 (Cox)

5. OOB transmission levels

Discuss possibility that both drives and expanders send OOB at SAS levels rather than SATA levels. Would not be an issue for SAS drives since the connector is not compatible with SATA connectors. Risk to SATA drives? Not doing so risk to SAS robust design for enterprise applications?

Targets should transmit at SAS levels as they are keyed to not connect to SATA devices. Initiators and expanders should begin at SATA voltage levels since a SATA device may be attached to it. Voltage level may increase to SAS level if OOB is not completed.

During the meeting last week, it was noted that some areas of the OOB text do not properly describe the transition to idle time.

Cox to provide inputs.

6. Define conditions for "loss of signal"

Based on the impact to the system, what defines a loss of signal? One bit? Voltage level loss? Etc.

All to review specification use of "loss of signal" and determine if necessary. Suspected carry-over from FCAL concerning optical connection rather than copper. Discuss on next call.

7. Review what PHY group wants to count on the SMP REPORT PHY ERROR LOG.

List below made initially by PHY working group. Is this what we want? What interactive errors stop counts on others?

PHY group suggested error report items in order of significance:

- * Loss of signal
- * OOB signal detected but can't negotiate OOB (expander log)
- * Speed negotiation at each speed (count of successes for G1, G2, ?)
- * Disparity error count
- * Illegal character count
- * CRC error count
- * Loss of synchronization

PHY group to reconsider list as is currently proposed. Juzer has provided the following link that should be considered when evaluating the need for this log page.

www.reed.com/Papers/EndtoEnd.html

The paper presents a persuasive but heuristic argument of the end-to-end principle. The principle suggests that functions (like loss of signal and other error check functions) placed at low levels of a system may be redundant or of little value when compared with the cost of providing them at that level.

8. Rob Elliott wanted the PHY group to be aware that there was some concern during the STP meeting about the SATA_ERROR primitive. It uses four K28.3. The concern is that SATA devices may have a problem with word sync if they receive this primitive.

Next call:

SAS PHY Teleconference Monday, September 23, 2:00 pm - 4:00 pm CDT

PARTICIPANT INFORMATION:

All Participants should use the following information to reach the conference call:

Toll Free Dial in Number: (866) 279-4742

International Access/Caller Paid Dial In Number: (309) 229-0118

PARTICIPANT CODE: 3243413

Webex information:

Meeting Summary

Meeting Name: SAS PHY WG

Scheduled Time: 9/23/2002 at 1:45PM (GMT -05:00) Central Time, USA & Canada (DayLight Time).

Meeting Number: 281981011

Any meeting attendee can use this number to join the meeting, at
<https://seagate.webex.com/join/>

Password: LED101