

Accredited Standards Committee*
INCITS, Information Technology

Doc. Number:
Date: 2/06/07
Project:
Reply to: Mike Jenkins
Dean Wallace

TO: MEMBERSHIP of T11.2

FROM: Mike Jenkins Chair Electrical Working Group
Dean Wallace Vice-chair Electrical Working Group
Dean Wallace Secretary Electrical Working Group

Subject: Draft minutes of electrical working group 2/07/07

AGENDA

1. Opening remarks and introductions
2. Attendance and membership
3. Approve agenda
4. Document Distribution
5. Review minutes of previous meeting and review of minutes from interim meeting.
6. Review old action items
7. Call for patents
8. New business/presentations
 - 8.1 Determine Delta T launch for passive SFP+ interconnects at 4.25Gb, 07-047v0, Dean Vermeersch, Tyco.
 - 8.2 Direct attach SFP+, 07-048v0, Dean Vermeersch, Tyco.
 - 8.3 Proposal to modify 8GFC jitter tolerance requirements, 07-075v0, Adam Healey, Agere.
 - 8.4 Enhanced TWDP and jitter limit, 07-084v0, Mark Marlett, LSI.
9. Project review
 - 9.1 FC-PI-3
 - 9.2 FC-PI-4
10. Old business/presentations

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11. New business
12. Review action items
13. Next meeting schedule
14. Adjourn

RESULTS OF MEETING

1. Opening remarks and introductions*

Mike Jenkins, chair, led the meeting. He opened the meeting at 2pm on Tuesday. Mike thanked the host Skip Jones of QLogic. He then led a round of introductions.

2. Attendance and Membership

Attendance at plenary meetings does count toward minimum attendance requirements for T11.2 membership. Working group meetings are open to any person or organization directly and materially affected by T11.2's scope of work but do not count toward minimum attendance for T11.2 membership.

The following people attended this meeting:

NAME	COMPANY	TELEPHONE NUMBER
Adam Healey	Agere	978-691-3067
Rick Hernandez	Agilent	
Greg McSorley	Amphenol	508-829-6523
Tom Lindsay	ClariPhy	425-608-0209
Jinhua Chen	EMC	508-249-4527
Bill Schuman	Emulex	425-806-4046
Kevin Oursler	FCI	503-709-3043
Mike Fitzpatrick	Fujitsu	405-820-5809
Scott Schube	Intel	510-578-5815
Schelto VanDoorn	Intel	510-497-7770
Mitch Ito	JDSU	805-218-1246
Mike Jenkins	LSI Logic	408-433-7901
Mark Marlett	LSI Logic	408-954-3760
Paul Wassenberg	Marvell	949-614-7714
Mike Dudek	Picolight	303-530-3189
Mark Owen	Qlogic	952-908-2326
Dean Wallace	Qlogic	949-389-6480
Allen Kramer	Seagate	952-402-2624

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Robert Kembel	Solution Technology	520-881-0877
Massimo Possoni	STMicroelectronics	0390293519714
Rajeev Jain	TI	214-480-2778
Andrew Nowak	Tyco	508-752-2884
George Noh	Vitesse	805-445-2247
Paul Levin	Xyratek	310-372-7352

3. Approval of Agenda *

The motion to approve the Agenda was made by Mark Marlett (LSI) and seconded by Paul Levin (Xyratek).

4. Document distribution

This section describes the availability of draft documents that are intended to be published as a result of work by the electrical working group.

Document distribution is now being done over the web. Documents relating to the electrical working group work can be found on the T11 website (www.t11.org) by going to “documents” and searching on the key word electrical.

A summary of the presently active policy to document distribution is included for reference.

All presentations are posted electronically at the approved ftp within two weeks after the meeting. Format must be an approved electronic file format.

Presentations are defined as material shown publicly in the plenary or authorized working group meetings.

Submission of documents for T11 document numbers: An online system is now available to provide document numbers and accept the submission of documents. The system is accessed via the T11 web page at <http://www.t11.org>. Follow the “docs” link in the left hand frame, or at the bottom, and fill in a form giving details of the document. In order to complete the form, it will be necessary to enter a password. The password is given out at T11 meetings, or can be obtained from the T11 chair. Instructions will then be given about uploading the file to the ftp site.

We now use all electronic document distribution.

A T11.2 reflector is operational over the T11 site.

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The committee forms it's agenda by the following:

1. A call (reminder) for presentations by the chair three weeks in advance.
2. Those wanting to be on the agenda submit request including; title, presenter, time required, abstract.
3. Chair creates an agenda and posts two weeks before the meeting.
4. At the meeting it is the chair's discretion to allow additional presentations.
- 5. Review minutes of previous meeting and review of minutes from interim meeting***

Motion to approve minutes from previous meeting, Mark Marlett (LSI), seconded by Al Krammer (Seagate). There was no objection to approving the minutes.

Minutes from interim meeting were reviewed.

6. Review old action items

There were no old action items.

7. Call for patents

The chair noted that the formal call for patents is issues at the T11.2 and T11 plenary meetings. Companies with patents that may bear on the subject of this ad hoc are advised to consider this call for patents. There was no response for this call for patents.

8. New discussions/presentations

8.1 Determine Delta T launch for passive SFP+ copper interconnects at 4.25Gb, 07-047v1, Dean Vermeersch, Tyco

The models used in the presentation are inaccurate and the areas where the models are inaccurate were pointed out. The reference test card was shown. The value at delta R was reviewed. The simulation data was reviewed.

The cables are 100 ohm and are sfp terminated. These are direct attach sfp cable assemblies. There was a long discussion about this proposal and what the distance

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requirements are at 4.25Gb and 8.5Gb for passive copper. You need a 680mVpp launch for 4.25Gb. The motions that were proposed were withdrawn.

8.2 Direct attach SFP+, 07-048v0, Dean Vermeersch Tyco. *

This presentation reviewed 8.5Gb direct attach passive SFP+. The launch used was 850mVpp. The eye diagrams did include crosstalk, 1600mVpp at 8.7Gb. The data pattern was used was PRBS 2⁷-1. One meter and two meter 24AWG cable assemblies were used.

The jitter needs to be added to the testing and the simulations.

8.3 Proposal to modify 8GFC jitter tolerance requirements, 07-075v0, Adam Healey, Agere

Reviewed current methodology for the jitter filter and the jitter tolerance mask. There isn't much excess margin for 8.5Gb. Margin already built into the link and jitter budget methodology. Would like to modify 8Gb jitter tolerance requirements. There is a simple two point test for tracking. The sinusoidal jitter amplitude is 1UI at 510KHz and 5UI at 100KHz. This test verified jitter tracking. The stressed eye jitter tolerance test will not include the sinusoidal jitter. The stressed eye verifies high frequency jitter.

The test procedure was reviewed. The test pattern to be used in JTSPAT.

Straw Vote: Motion Adam Healey, seconded Paul Levin

Support the proposal to modify the way we test the 8 GFC receiver jitter tolerances as per Adam's presentation. Specifically to separate the sinusoidal jitter tolerance testing from stressed eye testing. Sinusoidal jitter frequency and amplitude per 07-075v1 (as refined for OMA/VMA input requirements).

For: 19 Against: 0 Abstain: 8

8.4 Enhanced TWDP and jitter limit , 07-084v0 Mark Marlett, LSI

Discussed TWDP and DFE effects. TWDP equalizer has data only at sample points. Continuous view of DFE shows an open eye. Reviewed how a one tap DFE actually opens the eye. Reviewed non-compensable effects. Recommending a new specification parameter for delta R points, NCJ (non-compensable jitter). The limit for NCJ is 0.5UI. Would like to do this for the limiting output. The reference receiver is a 1 tap DFE. You

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will measure the waveform and then run it through enhanced TWDP code. This is a reference receiver. Most of the work done previously has used a two tap DFE, that is the current reference receiver for the linear variant.

9. Project Review

FC-PI-3: No action.

FC-PI-4:

Worked on comment resolution. Spreadsheets were updated as comments were accepted or deleted.

10. Old business/presentations

No old business.

11. New business*

12. Review action items

Investigate a working group to look into passive copper cable and to look into what needs to be added into the document. Dean Vermeersch, Tyco.

Adam Healey accept data and post process with algorithm like Mark Marlett is presenting and post-process and present the results at the March 6th interim meeting.

Dean Wallace generate measured data for Adam using maximum jitter at the delta T point and whatever length of fiber that is needed to meet the vertical eye closure.

13. Next meeting schedule

The next meeting is Wednesday from 2pm to 5:00pm.

Request an interim meeting on March 6th. This meeting will be hosted by Brocade.

Request two telecom.

14. Motion to adjourn

Motion to adjourn: Paul Levin (Xyratex) seconded by Mark Marlett (LSI).

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