

Accredited Standards Committee*
INCITS, Information Technology

Doc. Number:
Date: 6 /14/06
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: Approved minutes of electrical working group 6/14/06

AGENDA

1. Opening remarks and introductions
2. Attendance and membership
3. Approve agenda
4. Document Distribution
5. Review minutes of previous meeting
6. Review old action items
7. Call for patents
8. New business/presentations
 - 8.1 Susceptibility of 8GFC Scrambling Scheme to Monotone Outputs , 06-422v0, Dave Stauffer, IBM
 - 8.2 SFP+ Channel definition and Compliance Parameters, 06-420v0, Ali Ghiasi, Broadcom.
 - 8.3 Epsilon Point Reference Model Discussion (06-438v0), Adam Healey, Agere Systems.
 - 8.4 Crosstalk data and trace Validation Data (Mike Fogg, Tyco)
9. Project review
 - 9.1 FC-PI-3
 - 9.2 FC-PI-4

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- 10. Old business/presentations
- 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 9 am on Wednesday. Mike thanked the host Bob Nixon of Emulex. 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
Ali Ghiasi	Broadcom	408-922-7423
Samar Dalal	Brocade	408-333-1955
Kevin Burt	Circadian	408-429-4713
Stephen Alie	Cortina Systems	613-591-1950
Hossein Hashemi	Emulex	714-885-3609
Frank Barber	ESILICON	610-439-6850
Stefan Burmeister	Finisar	408-541-5612
Stephen Nelson	Finisar	408-542-4299
Mike Fitzpatrick	Fujitsu	405-820-5809
David Stauffer	IBM	802-769-6914
Dave Lewis	JDSU	408-546-5448
Mike Jenkins	LSI Logic	408-433-7901
Mark Marlett	LSI Logic	408-954-3760
David Weber	LSI Logic	719-533-7445
David Geddes	Marvel	408-222-3307
Kevin Buehler	Maxim	972-371-6907

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Jan Filip	Maxim	1495139959867
Scott Kipp	McData	720-558-3452
Galen Fromm	Molex	630-718-5270
Christian Rookes	PHYWORKS	UK 1179749046
Mike Dudek	Picolight	303-530-3189
Brett Clark	PMC-SIERRA	610-289-5213
Mark Owen	Qlogic	952-908-2326
Dean Wallace	Qlogic	949-389-6480
Hitoshi Okamura	Samsung	82-31-209-5927
Bobby Nabili	Scintera Networks	408-557-2810
Al Kramer	Seagate	952-402-2624
Bill Martin	Sierra Logic	916-765-6875
John Schroeder	Smith Aero	616-241-7574
Massimo Pozzoni	ST Microelectronics	0380293518714
Vit Novak	Sun	510-936-3284
Pavel Zivny	TEK	503-806-1758
Rajeev Jain	TI	214-480-2778
Kevin Voegele	Toshiba	952-842-2476
Mike Fogg	Tyco	717-986-5802
George Noh	Vitesse	805-445-2247
Dennis Petrich	Wavecrest	952-831-0030
Paul Levin	XYRATEK	310-372-7352
Richard Ramos	XYRATEK	312-224-8852

3. Approval of Agenda *

The motion to approve the Agenda was made by Vit Novak (Sun) and seconded by Frank Barber (ESILICON).

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.

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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.

The committee forms its 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***

Motion to approve minutes from previous meeting Al Krammer (Seagate), seconded by Vit Novak (Sun). There was no objection to approving the minutes.

6. Review old action items

David Stauffer IBM, run simulations with TX FFE being two tap, 1 pre and 1 post, the RX is two tap DFE. The granularity for the tap is 1T. Will use Broadcom package model, IBM will pick channel model. Compare CJTPAT to scrambled data, which is randomized 8b/10b. (Completed)

David Stauffer IBM, will write scrambler draft text. (Completed)

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Mike Fogg, Tyco, will bring in connector crosstalk data. (Completed)

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 Susceptibility of 8GFC Scrambling Scheme to Monotone Outputs , 06-422v0, Dave Stauffer, IBM

Tried to find a data sequence which produces a monotone scrambled sequence. Also determine affect of one bit change on scrambled data sequence. First tried to produce a monotone. If you can guess the scrambler state a monotone can be forced by a repeating data sequence which continues to produce the same state.

What happens if a bit is changed. A one bit change does affect the scrambled data.

A discussion followed about side stream scrambling versus self-synchronizing scrambling. There seems to be an advantage to not resetting the scrambler. Resetting at the start of every frame would help if you had an error in the last 58 bits.

If the scrambler is reset at every SOF what seed value should be used.

The following motions were made and voted on.*

Motion to recommend to T11.2. (Dave Stauffer, second Hossein Hashemi)

1. The scrambler should be a self-synchronizing scrambler using the Ethernet (10GFC) polynomial, presentation number 06-376v4.

Yes: 18
No: 2
Abstain: 15

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Straw Poll (Mike Jenkins, second Dean Wallace)

2. Resetting seed at every start of frame does not significantly increase jitter.

Agree: 13
Disagree: 1
No Opinion: 19

Motion (Dave Stauffer, Bob Snively)

3. If the seed is reset at every start of frame then the seed 029438798327338h is recommended for physical layer reasons.

Yes: 16
No: 0
Abstain: 16

8.2 SFP+ Channel definition and Compliance Parameters, 06-420v0, Ali Ghiasi, Broadcom.*

Reviewed SFP+ channel loss budget. Reviewed basic link model and reviewed port numbers. Reviewed informative return loss for host and SFP ICs.

Reviewed host and SFP compliance return loss for 8.5Gb. The summary is that initial measurements indicate current return loss is a good compromise between performance and difficulty. Proposed return loss of -8dB for the host and -10dB for the SFP produces 0.085UI of DJ. If return loss is relaxed it will become more difficult to close jitter budget.

8.3 Epsilon Point Reference Model Discussion (06-438v0), Adam Healey, Agere Systems.

Epsilon point is for the passive electrical backplane (blade servers), it considers only a fabric topology. The difference between and Epsilon point and Beta point is the difference between blade servers and JBOD etc.

The 802.3ap uses alpha point specifications, typically FC has done specification at separable connectors. Showed a reference model for a blade server. Choose to put the epsilon point at the separable connector closet to the SERDES, so the server blade to backplane doesn't include an interoperability point.

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The testing could also be done a WDP way, instead of the 802.3ap way. The channel requirements are insertion loss, return loss and crosstalk.

The reference model for epsilon point presented is analogous to the IEEE P802.3ap backplane Ethernet reference model. The reference model needs to be agreed upon.

8.4 Testing of Tyco SFP Product for SFP+ Applications (060463v0, Mike Fogg, Tyco)

The information requested was crosstalk and model validation. The connector is the stacked SFP connector.

9. Project Review

FC-PI-3:

FC-PI-4:

10. Old business/presentations

No old business.

11. New business*

No New business.

12. Review action items

David Stauffer IBM update document 06-376v4 to v5 with the new seed value.

13. Next meeting schedule

The next meeting is Wednesday August 9th from 9am to 12:30 in Calgary.
There is one interim meeting Thursday July 27th in San Jose.

14. Motion to adjourn

Motion to adjourn: Mike Fogg (Tyco) seconded by Vit Novak (Sun)

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