

Accredited Standards Committee*
INCITS, Information Technology

Doc. Number:
Date: 8/09/06
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: Aproved minutes of electrical working group 8/09/06

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 SFP+ Channel Measurements and Compliance, 06-562v1, Ali Ghiasi, Broadcom.
 - 8.2 8GFC Gamma and Delta work areas, Tom Lindsay, ClariPhy.
 - 8.3 Minimum Pulse Width Definition, 06-595v0, Mike Li, Wavecrest.
9. Project review
 - 9.1 FC-PI-3
 - 9.2 FC-PI-4
10. Old business/presentations
11. New business
12. Review action items

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- 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 Scott Kipp of McData. 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
Jim Tatum	Advanced Optical Comp	
Adam Healey	Agere	978-691-3067
Tom Lindsay	ClariPhy	425-608-0209
Doug Coleman	Corning	828-901-5580
Stephen Alie	Cortina Systems	613-591-1950
Jinhua Chen	EMC	508-249-4527
Hossein Hashemi	Emulex	714-885-3609
Frank Barber	ESILICON	610-439-6850
Kevin Oursler	FCI	502-709-3043
Stephen Nelson	Finisar	408-542-4299
Dan Colegrove	Hitachi	702-614-6119
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
Jan Filip	Maxim	1495139959867
Galen Fromm	Molex	630-718-5270
Weiqi Li	Neophotonics	

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Mike Dudek	Picolight	303-530-3189
Brett Clark	PMC-SIERRA	610-289-5213
Doug Hopperstad	QLogic	952-932-4007
Mark Owen	Qlogic	952-908-2326
Dean Wallace	Qlogic	949-389-6480
Karlheinz Muth	TI	214-567-3143
William Sherry	TI	214-567-8605
Kevin Voegele	Toshiba	952-842-2476
Mike Fogg	Tyco	717-986-5802
George Noh	Vitesse	805-445-2247
Tom Palkert	XILINX	952-401-7997
Paul Levin	XYRATEK	310-372-7352

3. Approval of Agenda*

The motion to approve the Agenda was made by Tom Lindsay (ClariPhy) and seconded by Hossein Hashemi (Emulex).

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

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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 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*

Motion to approve minutes from previous meeting Brett Clarke (PMC-SIERRA), seconded by Frank Barber (E-SILCON). There was no objection to approving the minutes.

6. Review old action items

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

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8.1 SFP+ Channel measurement and Compliance Definition, 05-562v1, Ali Ghiasi, Broadcom.

Try to understand the FR4 distance that can be supported. Reviewed the basic compliance points. Reviewed the loss property of 8" of FR4. Reviewed the current channel loss budget. The basic link model was reviewed. The SFP+ channel board was reviewed, there were both microstrip and stripline. Reviewed simulation results for return loss and insertion loss. Reviewed the measurement results for the microstrip board with the PT enhanced connector. The measured results look better than the simulation results. There was a discussion about the Tyco model and the measured results. The stripline results are for 12" with two differential vias. The insertion loss could be equalized (about 7dB at 4.25GHz) and the return loss is well below the specification and the vias are not buried or blind.

There was a long discussion about the return loss of the enhanced PT connector and what the results would be if the measured connector had as high of return loss as the modeled connector. It was pointed out that the measurements don't match the simulations and probably will affect the results.

The impulse results were shown for the channel. In summary the analytical and the measured stripline and microstrip board with PT connector cascaded with the device return loss passed proposed return loss mask with margin.

8.2 8GFC Gamma and Delta Points, Tom Lindsay ClariPhy. *

Would like FR4 models that can be used in simulation and analysis. There was discussion about test patterns. Should CJTPAT be used in testing?

8.3 Minimum Pulse Width Definition, 06-595v0, Mike Li, Wavecrest

Mike showed the pulse width shrinkage definition, $T_{pws} = UI - T_{pw}$. This definition is at the transmitter. The definition of T_{pw} takes the 50% point of a de-emphasized signal. The definition that the committee is looking for is at the deltaT point, this definition is at the alphaT point.

Straw Poll:

Should the pulse width shrinkage use the zero crossing threshold instead of the threshold as defined in 06-595v0?

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Yes: 21 No: 0 Abstain: 6

Straw Poll:

Include the definition below and the modified figure in 06-595v1 in FC-PI-4.

Yes: 18 No: 0 Abstain: 4

Definition on Pulse Width Shrinkage: The difference between 1 UI and the minimum value of the zero-crossing-time differences (in UI) of all edge pairs in an averaged waveform of a repeating data sequence.

Motion (Mike Jenkins, second Mike Li)

The electrical ad hoc recommends to T11.2 plenary that the following component test patterns should be included in FC-PI-4, CJTPAT2, CRPAT2 (both use ARBff instead of IDLE).

Yes: 3 No: 13 Abstain: 9

Motion: Mike Dudek, second Hossein Hashemi

The electrical ad hoc recommends to T11.2 plenary that for 8G scrambled systems, an unscrambled CRPAT2 (ARBff used instead of IDLE) should be used as a basis for component test data pattern (i.e. CJTPAT or similar patterns are not used). Pseudo-random data may be used in place of CRPAT2.

Yes: 16 No: 2 Abstain: 10

9. Project Review

FC-PI-3: No action.

FC-PI-4: No action.

10. Old business/presentations

No old business.

11. New business*

No New business.

12. Review action items

Ali will re-run simulations making sure that the simulation matches the test setup as close as possible. 06-562v1 will be updated with the results.

Mike Li will update 06-595v0 to add the definition from Tom Lindsay and move the crossing point to the zero crossing.

Tyco will supply s4p information Nelco 4000-6 and 4000-13 stripline designs. Will put in three different lengths.

Broadcom will upload the models used in his simulations. (Ali Ghiasi)

QLogic will upload .s4p models. (Dean Wallace)

Tom Lindsay will upload his presentation.

13. Next meeting schedule

The next meeting is Wednesday from 9am to 12:30 in OKC.

14. Motion to adjourn

Motion to adjourn: Mike Dudek (Picolight) seconded by Ali Ghiasi (Broadcom).

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