

Accredited Standards Committee
INCITS, Information Technology

Doc. Number:
Date: 8/07/07
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 8/07/07

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. Presentations
 - 8.1 Bounded uncorrelated interference study, (T11/07-449v0), Mark Marlett, LSI
 - 8.2 SFP+ Copper Direct Attach,(T11/07-454v0), AliGhiasi, Broadcom.
 - 8.3 Common mode voltage spec issue in FC-PI-4,(T11/07-435v0), Mike Jenkins LSI
 - 8.4 Proposed 8GFC specs for EMI reduction, (07-436v0), Mike Jenkins, LSI
9. Project review
 - 9.1 FC-PI-3
 - 9.2 FC-PI-4
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 2pm on Tuesday. Mike thanked the host 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
Joachim Vobis	Agilent	707-577-4448
Jason Pritchard	EMC	508-435-1000
Hossein Hashemi	Emulex	714-885-3609
Fernando Gomex	Finisar	908-222-7809
Mike Fitzpatrick	Fujitsu	405-820-5809
Pravin Patel	IBM	919-543-3837
Dave Stauffer	IBM	802-769-6914
Mike Dudek	JDSU	303-530-3189
Dave Lewis	JDSU	408-546-5448
Adam Healey	LSI Logic	978-691-3067
Mike Jenkins	LSI Logic	408-433-7901
Mark Marlett	LSI Logic	408-954-3760
Richard Johnson	Mergeoptics	408-480-0347
Galen Fromm	Molex	630-718-5270
Rick Hernandez	PMC-Sierra	408-553-4187
Dean Wallace	Qlogic	949-389-6480
Al Krammer	Seagate	952-402-2624
Bill Pagano	Seagate	719-268-5610
Mossimo Pozzoni	ST microelectronics	0390293519714
Doug Day	Toshiba	408-526-2838
George Noh	Vitesse	805-445-2247
Paul Levin	XYRATEX	310-372-7352

3. Approval of Agenda

The motion to approve the agenda was made by Mark Marlett, LSI and seconded by Pravin Patel (IBM). There were no objections.

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.

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 and review of minutes from interim meeting

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

Operating under the procedures of the American National Standards Institute. INCITS SECRETARIAT, Information Technology Industry Council (ITI), 1250 Eye street NW, Suite 200, Washington DC, 20005-3922, Email: incits@itic.org Telephone 202-737-8888, FAX 202-638-4922

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 issued 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 Bounded uncorrelated interference study, (T11/07-449v0), Mark Marlett, LSI.

Mark went through sinusoidal BUI. Injected a single tone differential sinusoidal signal after the TWDP stressor channel. The conclusion was that the sinusoidal BUI is not realistic or is of general purpose. This method is not very practical.

JTSPAT BUI, inject a differential JTSPAT signal after the TWDP stressor channel. The conclusion was that this test is not Gaussian and has a low crest factor. This test is too stressful of a test case.

Gaussian BUI, inject a Gaussian noise signal after the TWDP stressor channel. This is useful for specification compliance and finding sensitivity to a broad range of crosstalk. This is less useful for specific debugging.

The summary is that spec compliance measurements are best served by Gaussian jitter BUI.

8.2 SFP+ copper direct attach,(T11/07-454v0), Ali Ghiasi, Broadcom.

The direct attach SFP+ can leverage delta and Epsilon equalizer. The distance that was looked at was 5 meters and 7 meters. The additional parameters needed for copper were proposed. The impulse response for five meter 24 AWG and 7 meter 24 AWG were reviewed.

The following reach is possible, delta equalizer less than 5 meters, Epsilon equalizer approximately 5 meters. Transmit pre-emphasis with epsilon equalizer approximately 7 meters. The copper direct attach specifications will be almost identical to epsilon but superimposed on the delta T.

8.3 Common mode voltage spec issue in FC-PI-4 (07-435v0), Mike Jenkins, LSI Corp

The AC common mode voltage spec for 400-DF-EL-S is 30mV (rms) in FC-PI-2, this seems to have been incorrectly copied into FC-PI-4 as 15mV (rms). 15mV (rms) seems to be completely unrealistic.

Sources of V_{cm} are TXP to TXN skew, rise/fall symmetry and RX differential to common mode conversion.

The conclusion is that the existing 8Gb draft spec for V_{cm} was based on false assumptions. The recommendation is to change 15mV (rms) back to 30mV (rms) for 400-DF-EL-S. The recommendation is to adopt the V_{cm} spec in 07-436v0.

8.4 Proposed 8GFC specs for EMI reduction, (07-436v0), Mike Jenkins, LSI

Proposed a modified or additional specs to control EMI. Proposing a common mode spec, that is a spectral limit line. Limits single tone 4.25GHz, V_{cm} to 25mV (rms). Also proposing limits for SCD11 and SCD22.

Motion: Mike Jenkins (LSI), seconded by Hossein Hashemi (Emulex)

The 8GFC common mode specifications proposed in presentation 07-436v0 be included in the next revision of FC-PI-4. These include the common mode voltage spec and the SCD spec. For the SCD spec $L=H=-10dB$. For the common mode voltage spec $L=H=26dBmV$ and the existing common mode voltage table entry will be retained at a 30mV (rms) value. All the above applies to all compliance points for both T and R.

For: 22 Against: 1 Abstain: 3

Motion passes.

Motion: Mike Jenkins (LSI), seconded by Hossein Hashemi (Emulex)

The 4GFC common mode voltage specifications are to be changed to 30mV (rms) in FC-PI-4.

For: 20 Against: 1 Abstain: 3

Motion passes.

Motion Bob Snively (Brocade), Dean Wallace (QLogic).

The working group recommends to T11.2 that the corrections made in FCSM-2 be accepted and that we approve the modifications found in document 07-423v0.

For: 24 Against: 0 Abstain: 1

Motion passes.

9. Project Review

FC-PI-3: No action.

FC-PI-4:

10. Old business/presentations

No old business.

11. New business

No new business.

12. Review action items

Mike Jenkins (LSI) to provide the text for the revised common mode specs to Hossein Hashemi for inclusion to be included into the next revision of FC-PI-4.

Pravin Patel (IBM) to provide channel impulse response and Touchstone files for channel used in Epsilon presentation. (Carry over)

13. Next meeting schedule

The next meeting is Tuesday October 9th from 1:30pm to 5:00pm in Coeur d' Alene .

Request two teleconference.

14. Motion to adjourn

Motion to adjourn: Hossein Hashemi (Emulex) seconded by Mark Marlett (LSI).