

Accredited Standards Committee  
INCITS, Information Technology

Doc. Number: 13-125v0  
Date: 4/2/13  
Project:  
Reply to: Dean Wallace

TO: MEMBERSHIP of T11.2  
FROM: Dean Wallace Chair FC-PI-6 Working Group  
Subject: Approved minutes of FC-PI-6 ad hoc 12/05/12

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. Liaison Reports
  - 8.1. None
9. Presentations
  - 9.1 32GFC delta point presentation, Adam Healey, LSI, 12-491v0
  - 9.2 32GFC SMF 10km SFP+ Power Consumption Estimate, Jon Anderson, Oclaro, 12-457v0
  - 9.3 10KM SM variant discussion, Dave Lewis, JDSU, 12-394v2
  - 9.4 Tightening 3200 SM-LC-L RX Sensitivity Spec, Richard Johnson, Jonathan King, Finisar, 12-442v0
  - 9.5 Estimate of the Mode Partition Noise Coefficient, Jose Castro, Panduit, 12-461v0
  - 9.6 Review the current FC-PI-6 document, Hossein Hashemi, Emulex, 12-202v0
  - 9.7 Overview of current actions and status of FC-PI-6, Dean Wallace, QLogic, 12-403v1
- 10 Project review
  - 10.1 None
11. Review action items
12. Next meeting schedule
13. Adjourn

## RESULTS OF MEETING

### 1. Opening remarks and introductions

Dean Wallace, chair, led the meeting. He opened the meeting at 9:00am on Wednesday. He led a round of introductions, and thanked our host FCIA.

### 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:

AGILENT TECHNOLOGIES, INC.	Steve Sekel
AMPHENOL INTERCONNECT	Gregory McSorley
AVAGO TECHNOLOGIES	David Cunningham
BROCADE	Scott Kipp
CORNING INC.	Doug Coleman
EMULEX	Hossein Hashemi
FINISAR	Andy Williams
FINISAR CORPORATION	Richard Johnson
IBM MICROELECTRONICS	David Stauffer
JDSU	Dave Lewis
LSI CORP.	Adam Healey
LUXTERA	Tom Palkert
MOLEX	Jay Neer
OCLARO, INC.	Jon Anderson
OFS FITEL LLC	Roman Shubochkin
PANDUIT CORPORATION	Jose Castro
QLOGIC	Dean Wallace
SEMTECH CANADA INC.	David Brown
SYSTIMAX/COMMSCOPE	Richard Baca
TE CONNECTIVITY	Michael Fogg
VITESSE SEMICONDUCTOR CORPORATION	Marty Spadaro

### 3. Approval of Agenda

The motion to approve the agenda was made by Hossein Hashemi, Emulex and approved by acclimation.

#### **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](http://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 October meeting minutes, Jon Anderson, Oclaro moved to approve minutes, group approved by acclamation.

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](mailto:incits@itic.org) Telephone 202-737-8888, FAX 202-638-4922

## **6 Review old action items**

Correlated FEC error analysis for electrical variants, Adam Healey, LSI ,closed

FC-PI-6 chapter 6 SM content, Dave Lewis, JDSU, Tom Palkert Luxtera, closed

FC-PI-6 chapter 9 electrical content, Adam Healey, LSI, delta brought in, closed

FC-PI-6 annex A and B, Doug Coleman, Corning. closed

SM table that gives the reach for 8GFC, 16GFC and 32GFC based on connector loss similar to what is used for the MM variants. Doug Coleman, Corning. Carry over

What connector loss numbers are needed. Jack Edwards, DCS, carry-over

What are the datacenter requirements for 500 meters to 1Km and 2Km to 10Km. Jack Edwards, DCS. Carry-over

## **7 Call for patents**

The chair showed the slides for the patent policy in document 08-406v0. The presentation is also on the USB stick that was distributed.

## **8 Liaison Reports**

There were no liaison reports.

## **9 Presentations**

### **9.1 32GFC delta point presentation, Adam Healey, LSI, 12-491v0**

OIF CEI-28G-VSR will be used as the starting point for 32GFC delta points. Appropriate modifications will be made to account for forward error correction (FEC). More work will be done to refine the BER target. The channel loss target is 15.5dB and VSR is 10dB so additional work will be done to determine what the reach is with FEC and if the reference equalizer needs to be changed to accommodate the additional loss.

Motion:

Adam Healey LSI, second Tom Palkert

Presentation 12-491v0 as modified to v1 will be used as the starting point for FC-PI-6 delta points.

Yes: 23 No: 0 Abstain: 0

## **9.2 32GFC SMF 10km SFP+ Power Consumption Estimate, Jon Anderson, Oclaro, 12-457v0**

The power from the different components of a SFP based 32GFC SM module was broken into the various components. The overall power was 1.5W. There are modifications/improvements that will help reduce the power in the future.

## **9.3 10KM SM variant discussion, Dave Lewis, JDSU, 12-394v2**

Modifications to the proposed single mode table were reviewed. Spreadsheet results were reviewed. TDP results were reviewed. A v3 version of the document that includes the proposed changes from 12-442v0 will be used as the SM starting point for FC-PI-6

Motion:

Jonathan King Finisar, Dave Lewis, JDSU

Presentation 12-394v2 will be modified (v3) to incorporate 12-442v0 recommendations.

Yes: 23 No: 0 Abstain:0

## **9.4 Tightening 3200 SM-LC-L RX Sensitivity Spec, Richard Johnson, Jonathan King, Finisar, 12-442v0**

The recommendations in the document were the following:

Lower minimum TX\_OMA power at maximum TDP to -2dBm

Tighten RX return loss to -26dB. This will also cause the rin12 to change to rin20.

Tighten RX sensitivity spec to -11.4dBm OMA.

The changes were accepted and will be included in the initial document. See the motion above.

## **9.5 Estimate of the Mode Partition Noise Coefficient, Jose Castro, Panduit, 12-461v0**

The goal was to provide empirical data for the value of k in the spreadsheet. K is a dimensionless parameter that is the mode partition coefficient that quantifies the magnitude of power mode fluctuations. Three different methods for measuring k were reviewed. The maximum value was 0.23. A value of 0.3 is currently used in the spreadsheet.

Additional work will be done.

## **9.6 Review the current FC-PI-6 document, Hossein Hashemi, Emulex, 12-202v0**

The document was reviewed to see what additional changes should be made and to clarify what will be placed in various locations. A document should be ready to be sent out before the holidays.

## **9.7 Overview of current actions and status of FC-PI-6, Dean Wallace, QLogic, 12-403v1**

Current action items were reviewed. The goal is to integrate everything agreed on at the current meetings and Hossein is going to attempt to have a document out before the holidays. The group will then do an informal comment resolution using the comment resolution spreadsheet. The goal is comments will be reviewed in February along with the additional content that is scheduled to be done. The document as modified from the informal comment resolution and new content will then be taken to T11.2 letter ballot.

## **10 Project Review**

There was no project review.

## **11 Review action items**

What non FEC BER number should be used in the standard, Adam Healey, LSI, closed

Is the module plus trace loss number of 1.5dB that is used in the loss calculations accurate, Richard Johnson, Finisar, Dave Lewis, JDSU, carry over

Assist in importing data from the VSR document into FC-PI-6, Tom Palkert, Molex, closed

## **12 Next meeting schedule**

Wednesday 02/06/13 from 9:00 to 5:30 in Palm Springs, CA  
Request two teleconference.

## **13. Motion to adjourn**

Motion to adjourn: Tom Palkert, Molex