P802.3ae PMD Track Report

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14 Presentations

- XSBI Issues—Stuart Robinson
- VCSEL-Friendly 1310nm Serial PMD Specifications—Jack Jewell
- Table 52-17 Fiber Specs—Paul Kolesar
- Revised Tables for 1550: power levels and channel insertion loss—Peter Öhlen
- Golden test for dispersion penalty - 1550 Serial—Peter Öhlen
- Attenuation Management—Scott Bradshaw
- Comparing OMA and E/R Measurements—Ken Herrity

14 Presentations (cont.)

- OMA Proposal—Mike Dudek
- OMA Specifications—Peter Öhlen
- Better way to spec spectral Width and Center Wavelength—Mike Dudek
- Reference Filter for testing (Serial) –Piers Dawe
- 1310/1550nm Back Reflection—Raj Savara
- WWDM Measurement Methodology—Dave Dolfi
- PMD Management Register Proposal—Jonathan Thatcher

Major Actions

- Added column to Table 52-8 to add spectral width and wavelength range to be more VCSEL friendly
- Adopted 0.4 dB/km (vs 0.5) fiber attenuation for 1310nm
- Adopted 13 dB link loss instead of specifying fiber attenuation on a “per km” basis
- Adopted, in principle, Golden Fiber test for dispersion measurement and created ad hoc to bring details to January Interim
- Adopted proposal to insert additional attenuators in 1550nm links to keep receivers operating in optimal region
- Adopted OMA as specification methodology

Major Actions (cont.)

- Adopted ITU-T STM-64 reference receiver for G.691 7.5GHz reference receiver with a 4th order Bessel-Thompson filter to impose uniform test condition on all transmitters
- Increased receiver return loss specification for 1550nm links from 12 dB to 26 dB—rejected change for 1310nm links
- Adopted triple trade off curves as the method of specification for 850 nm and 1300 nm serial PMDs.--The exact curves will be presented next meeting.
- Added *Signal Detect* indication for both serial and WWDM PMDs
  - 1 global signal for all wavelengths in WWDM
  - If MDIO present, indications are through management registers

Other Clause 51 Changes

- Remove 3xx mode for PMA
- Loopback
  - Optional
  - Send out static signal when in loopback
- Change Table 51-6
  - TD test conditions from < 1KHz to <10KHz
  - CJ test conditions from > 1KHz to >10KHz
- Added PCS framer specs
- Changed LVDS spec reference to TIA/EIA-644
- Added optional *Loss of Lock* indication
- Change definition PMA_RX_CLK
  - in absence of valid serial data input a “valid” clock must be provided to clock the PCS

Other Clause 54 Changes

- Kept Test Points 1, 2, 3 and 4
  - 2 & 3 are normative
  - 1 & 4 are informative
- Adopted WWDM test measurement methodology based on Tx wavelength and linewidth specifications
- Adopted Management Register model basis

Big Ticket Items

- Jitter specifications and methodology
  - Test points
  - Compliance
  - patterns
- Polarization Mode Delay
  - Conflicting data indicates either PMD is not an issue or it may be as much as 12% of installed fibers
  - General feeling is it's a non-issue
  - No known problems for the lengths we're dealing with
- Still reviewing specs, esp. in light of OMA change
- Questions on compliance testing in WWDM where other ? may interfere

PMD Track Motion #1

Add a new column to Table 52-8 for the 1310nm serial PMD for a spectral width of 0.20nm RMS and the wavelength range 1265-1355 nm and change the wavelength range in Table 52-9 to 1265-1355 nm

Moved: Jack Jewell *Technical (>75%)*
Second: Mike Dudek
Y: 53 N: 8 A: 33 *Passes*

PMD Track Motion #2

Move that the IEEE P802.3ae PMD sub task force ask IEEE 802.3 to adopt the proposed clause 52.12.1 content of *kolesar_1_1100* as amended during meeting as a replacement for the existing content of clause 52.12.1 found in Draft 1.1

Moved: Paul Kolesar — *Technical (>75%)*

Second: Steve Swanson

Y: 61 N: 0 A: 19 — *Passes*

PMD Track Motion #3

Motion to make changes to clause 52 as specified by ohlen_1_1100 and keep the 40 km distance objective and make the maximum channel insertion loss be 13 dB

	new value	old value	relevant table
Tx max. power	+4 dBm	+2 dBm	52-12
Tx min. power	0 dBm	-2 dBm	52-12
Rx max. power (for damage)	+4 dBm	--	52-13
Rx max. power (for BER overload)	-3 dBm	-8 dBm	52-13
Rx sensitivity	-18 dBm	-20 dBm	52-13
Stressed Rx sensitivity	-13.41 dBm	-15.41 dBm	52-13

Moved: Peter Ohlen *Technical (>75%)*

Second: Scott Bradshaw

Y: 41 N: 13 A: 24 *Passes*

PMD Track Motion #5

Move that:

- We adopt the methodology of ohlen_3_1100 in principle
- Direct editor to make necessary changes to draft 1.1
- Create ad-hoc to bring to the January 2001 meeting complete and specific proposals for specification and measurement methodology

Moved: Jonathan Thatcher *Technical (>75%)*

Second: Peter Ohlen

Y: 52 N: 3 A: 20 *Passes*

PMD Track Motion #6

Move to incorporate table and figure as shown in bradshaw_1_1100 for attenuation management at 1550 nm

Moved: Scott Bradshaw *Technical (>75%)*

Second: Piers Dawe

Y: 54 N: 0 A: 9 *Passes*

PMD Track Motion #7

Move that OMA is accepted as a method of specification and that the numbers should be as presented in dudek_2_1100. Also, these numbers should be in both mW and dBm with modifications as appropriate for motions passed at this meeting.

Moved: Mike Dudek — Technical (>75%)

Second: Ken Herrity

Y: 61 N: 0 A: 5 — *Passes*

PMD Track Motion #8

Move to accept the ITU-T STM-64 reference receiver (specified in G.691). This represents a 7.5 GHz reference receiver with a fourth order Bessel-Thompson filter.

Moved: Piers Dawe — Technical (>75%)

Second: Scott Bradshaw

Y: 49 N: 0 A: 19 — *Passes*

PMD Track Motion #9

Move that triple trade off curves as described by dudek_1_1100 are adopted as the method of specification for 850 nm and 1300 nm serial PMDs. The exact curves will be presented next meeting.

Moved: Mike Dudek *Technical (>75%)*
Second: Vipul Bhatt
Y: 44 N: 2 A: 30 *Passes*

PMD Track Motion #10

Move to adopt savara_1_1100 in order to change clause 52 as follows for 1550 nm:

- Change Table 52-13 “Return Loss” specification to 26 dB (min)
- Add to Table 52-14 “Return Loss for any device in the optical link” to 26 dB (min)
- Ensure that the RIN measurement is made with a return loss at 12 dB

Moved: Raj Savara *Technical (>75%)*

Second: Scott Bradshaw

Y: 38 N: 5 A: 41 *Passes*

PMD Track Motion #11

Move to adopt savara_1_1100 in order to change clause 52 as follows for 1310 nm:

- Change Table 52-9 “Return Loss” specification to 26 dB (min)
- Add to Table 52-10 “Return Loss of any device in the optical link” to 26 dB (min)
- Ensure that the RIN measurement is made with a return loss at 12 dB

Moved: Raj Savara *Technical (75%)*

Second: Scott Bradshaw

Y: 17 N: 19 A: 50 *Fails*

PMD Track Motion #12

Move to adopt changes 1, 2, 3, 5, 7 proposed in Justin Chang's clause editor update at Tampa, FL:

- Remove 3XX mode as option for PMA
- Loopback
  - Remove "shall"… loopback is optional
  - Send out static signal
- Table 51-6 change
  - TD test condition <1kHz to <10kHz
  - CJ test condition > 1kHz to >10 kHz
- Add PCS framer specs for completeness (OIF99.102.x)
- LVDS specs:
  - Reference to TIA/EIA 644Mb/s instead IEEE1596.3 with appropriate modifications

Moved: Justin Chang *Technical (>75%)*

Second: Henning Lysdal

Y: 42 N: 0 A: 38 *Passes*

PMD Track Motion #13

Move to add optional RX indicator in Clause 51: Loss-of-lock

Moved: Justin Chang *Technical (>75%)*
Second: Henning Lysdal
Y: 52 N: 0 A: 29 *Passes*

PMD Track Motion #14

Move to change definition PMA_RX_CLK: in absence of valid serial data input a “valid” clock must be provided to clock the PCS

Moved: Justin Chang *Technical (>75%)*

Second: Raj Savara

Y: 33 N: 2 A: 41 *Passes*

PMD Track Motion #15

Move that we adopt Signal_Detect for clause 52 and clause 54 per the recommendations of the Signal_Detect ad hoc as the basis for the draft for TF ballot.

- Signal_Detect will be normative
  - Signal_Detect to be a global indication (That is only one Signal_Detect for WWDM PMD, not a per lane Signal_Detect)
- If MDIO is implemented
    - Report global Signal_Detect through MDIO
    - Optionally, report Signal_Detect through MDIO on a per lane basis

Moved: David Cunningham *Technical (>75%)*

Second: Jonathan Thatcher

Y: 65 N: 0 A: 23 *Passes*

PMD Track Motion #16

Adopt test points shown in Figure 54-3 as basis for TF ballot draft: TP2 and TP3 are normative, TP1 and TP4 are informative.

Moved: David Cunningham *Technical (>75%)*
Second: Bill Lane
Y: 62 N: 0 A: 20 *Passes*

PMD Track Motion #17

Move that we adopt the methodology proposed in dolfi_1_1100 in principle with respect to WWDM Tx, Rx measurements and wavelength and linewidth specifications, as the basis for the next Draft of Clause 54.

Moved: David Dolfi — *Technical (>75%)*

Second: Bill Weidemann

Y: N: A: — *Passes by acclamation*

PMD Track Motion #18

Adopt MDIO features in thatcher_1_1100 in principle

- Have clause 52 and 54 editors write into draft 2.0.
- Authorize David Law to define the bit allocations.

Moved: Jonathan Thatcher — *Technical (>75%)*

Second: Jack Jewell

Y: N: A: — *Passes by acclamation*

P802.3ae Motion #?

Move to affirm the definition of PMA_RX_CLK as written in D1.1.

Moved: Walter Thirion *Technical (>75%)*
Second: Justin Chang
Y: N: A:

802.3 WG Motion #?

Move to affirm the motions passed in the P802.3ae PMD sub-task force that have already been affirmed by P802.3ae.

Moved: Jonathan Thatcher on behalf of P802.3ae

Technical (>75%)

Y: N: A: