Cl **95**   *SC* **95.8.8.1**   *P* **115**   *L* **26**   # i-36

Petrilla, John   Avago Technologies

Comment Type **TR**   *Comment Status* **R**

The second paragraph of 95.8.8.1 describes setup of the stressed receiver input waveform in conjunction with the block diagram in 95-3 ending with the instruction, "The Gaussian noise generator, the amplitude of the sinusoidal interferers, and the low-pass filter are adjusted so that the VECP, stressed eye J2 Jitter, and stressed eye J4 Jitter specifications given in Table 95-7 are met simultaneously while also passing the stressed receiver eye mask in Table 95-7 according to the methods specified in 95.8.7". Unfortunately, results have not been presented that simultaneously satisfying all conditions is possible. Also, additional consideration should be given to de-embedding reference receiver noise from J2 and J4 jitter versus adjusting J2 and J4 jitter values for the ref. Rx. Consequently, this paragraph should remain open for comments until more experience is accrued and the method can be confirmed.

SuggestedRemedy

Indicate that 95.8.8.1 remains open for comment in draft 3.1.

Response   *Response Status* **U**

REJECT.
A contribution which shows that simultaneously satisfying all conditions is not possible together with a proposal for how the paragraph should be modified is requested.

Cl **95**   *SC* **95.7.1**   *P* **110**   *L* **41**   # i-46

Dawe, Piers J G   Mellanox Technologie

Comment Type **TR**   *Comment Status* **A**

This TDP limit of 5 dB appears to be a "worst bit plus noise" estimate from the spreadsheet; the real TDP will be considerably lower. TDP of 5 is near to a "cliff" (see dawe_01_0513_optx.pdf and dawe_02a_0114_optx.pdf slide 12), is far higher than other TDP limits in 802.3, and is not feasible.

SuggestedRemedy

Using the improved definition of TDP (see other comments) that includes all penalties:
Change TDP limit from 5 dB to 4.3 dB.
Consequent changes: change OMA-TDP (min) from -8 dB to -7.3 dB;
Change OMA (min) from -7.1 dB to -6.4 dB;
Change Average launch power, each lane (min) from -9.1 dB to -8.4 dB;
In receive specs, change Average receive power, each lane (min) from -11 dB to -10.3 dB;
In receive specs, if we are testing with maximum of all penalties, change Stressed receiver sensitivity (OMA), each lane (max) from -5.6 to -3-1.9 = -4.9 dBm;
In Table 95-8, 100GBASE-SR4 illustrative link power budget, change Power budget (for max TDP) from 8.2 dB to 4.3+1.9 = 6.2 dB (?);
In Table 95-8, change Allocation for penalties (for max TDP) from 6.3 dB to 4.3 dB (?).

Response   *Response Status* **U**

ACCEPT IN PRINCIPLE.
See response to i-34
The implications of the change to TxVEC on the budget and penalties should be explored in the MMF Ad Hoc.

[Editor's note added after comment resolution completed.
The response to Comment i-34 was:
ACCEPT IN PRINCIPLE.
Overtaken by events. TDP has been replaced by TxVEC. See comment i-35.]

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID

Comment ID **i-46**   Page 1 of 3
16/09/2014 11:41:27

Cl **95**   *SC* **95.7.2**   *P* **111**   *L* **29**   # i-50

Dawe, Piers J G   Mellanox Technologie

Comment Type **TR**   *Comment Status* **A**

Are the J2 and J4 values correct? TR comment because this action should follow others to be taken at July meeting.

SuggestedRemedy

Review them and revise as necessary, consistent with changes to TDP and VECP. Also the SRS eye mask.

Response   *Response Status* **U**

ACCEPT IN PRINCIPLE.
See response to i-26

[Editor's note added after comment resolution completed.
The response to Comment i-26 was:
REJECT.
It is advisable to warn the reader that instrumentation noise may be signfiicant.
 95.8.8.4 already contains the text:

"Care should be taken when characterizing the test signal because excessive noise/jitter in the measurement system will result in an input signal that does not fully stress the receiver under test. Running the receiver tolerance test with a signal that is under-stressed may result in the deployment of non-compliant receivers. Care should be taken to minimize the noise/jitter introduced by the reference O/E, filters and BERT and/or to correct for this noise."

Additions to this text to recommend how far above the noise the signal are invited.]

Cl **95**   *SC* **95.8.2**   *P* **113**   *L* **42**   # i-52

Dawe, Piers J G   Mellanox Technologie

Comment Type **TR**   *Comment Status* **R**

This "shall" duplicates the one in 95.7.1, which is bad practice. It puts a (repeated) PMD requirement in the definitions section where it doesn't belong. the point about "if measured" applies to any spec; we should not be saying it in most or every subclause as if it were an exception to the rule.

SuggestedRemedy

Change the first sentence of 95.7.1 from:
...shall meet the specifications in Table 95-6 per the definitions in 95.8.
   to
...shall meet the specifications in Table 95-6 if measured according to the definitions in 95.8.
and similarly for 95.7.2 100GBASE-SR4 receive optical specifications.
Change "The center wavelength and RMS spectral width of each optical lane shall be within the range given in Table 95-6 if measured per TIA/EIA-455-127-A or IEC 61280-1-3."
   to   "Center wavelength and RMS spectral width shall be as defined by TIA/EIA-455-127-A or IEC 61280-1-3."
Similarly in 95.8.3 Average optical power, 95.8.4 Optical Modulation Amplitude (OMA), 95.8.6 Extinction ratio, 95.8.7 Transmitter optical waveform (transmit eye), and 95.8.8 Stressed receiver sensitivity.

Response   *Response Status* **U**

REJECT.
The format of clause 95 is consistent with other clauses including 52, 86, 87, 88.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn
SORT ORDER: Comment ID

Comment ID **i-52**   Page 2 of 3
16/09/2014 11:41:27

Cl **95**　　　*SC* **95.7.1**　　　　　　*P* **112**　　　*L* **41**　　　　# r01-71
Dawe, Piers J G　　　　　　　　　　Mellanox Technologie

Comment Type　**TR**　　　*Comment Status*　**A**

D3.1 has VECP=4.2 and TxVEC not more than 5. These are much more than any previous VECP and TDP (3.5 and 3.9) and near a "cliff" (error floor approaching FEC's correction ability). Also, for stressed eyes, TxVEC can be a little less than VECP (more than a little if M=0), so we need to take care when we switch to TxVEC based SRS calibration that we do not make the eye even more stressful. This will affect the transmitter TxVEC limit also. See D3.0 comment 46 which recommended 4.3 dB.

SuggestedRemedy

Change the TxVEC limit in Table 95-6 (transmitter) and condition in Table 95-7 (receiver) from 5 dB to 4.3 dB (to be confirmed - see work of MMF ad hoc and/or presentation at this meeting). See another comment for consequential changes.

Response　　　　　　　*Response Status*　**U**

ACCEPT IN PRINCIPLE.

Change the TxVEC limit in Table 95-6 (transmitter) and condition in Table 95-7 (receiver) to 4.9 dB

See also comments r01-43 and r01-32

Cl **95**　　　*SC* **95.8.9.5**　　　　　*P* **123**　　　*L* **47**　　　　# r01-95
Dawe, Piers J G　　　　　　　　　　Mellanox Technologie

Comment Type　**TR**　　　*Comment Status*　**R**

The two sinusoidal interferers ("bounded" stress) cause pulse shrinkage. With Bessel-Thomson filters, only the 0.05 SJ causes bounded non-pulse-shrinkage jitter; and this component seems smaller than realistic.

SuggestedRemedy

Increase the SJ condition above 10 MHz from 0.05 UI to 0.1 UI or a range. If it is not desired to increase SJ at low frequencies, use the formula in Clause 52, modified for this clause's signalling rate.

Response　　　　　　　*Response Status*　**U**

REJECT.

This comment does not apply to the changes between IEEE P802.3bm/D3.1 and IEEE P802.3bm/D3.0 or the unsatisfied negative comments from the initial ballot. Hence it is not within the scope of the recirculation ballot.

The limit to SJ above 10MHz is consistent with some other clauses.
Allowing a range would build uncertainty into measurements.
Large amounts of SJ can be problematic for CDRs and are not representative of a real system.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general　　　　　*Comment ID* **r01-95**　　　Page 3 of 3
COMMENT STATUS: D/dispatched A/accepted R/rejected　　RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn　　　16/09/2014 11:41:27
SORT ORDER: Comment ID