Cl **83D**	*SC* **83D.4**	*P* **158**	*L* **29**	*#* 1

Mellitz, Richard   Intel Corporation

Comment Type **T**   *Comment Status* **D**

Table 83d-7 is based on an a receiver without a DFE.
The CTLE parameters in Clause 93 Table 93-9 are for a CTLE which is intended to be used with a DFE.

SuggestedRemedy

Use f_z, f_p1, f_p2, and g_DC from Clause 93 Table 93-8 replacing the values in table 83d-7.

Editorial license granted.

Proposed Response   *Response Status* **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **83E**	*SC* **83E.3.4.1**	*P* **171**	*L* **41**	*#* 21096

Petrilla, John   Avago Technologies

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

Since CAUI-4 modules, e.g. 100GBASE-SR4 transceivers with a CAUI-4 electrical interface, are not required to include an error detector and counter, the requirement, "The CAUI-4 module input is defined to operate at a bit error ratio (BER) better than 10-15 for an input signal defined by 83E.3.4.2" is problematic. Perhaps the intention of this subclause is to define the BER of the stressed input signal. If so, that is accomplished in Table 83E-9 and 83E.3.4.2.1 and 83E.3.4.1 can either be deleted or simply refer to table 83E-9. If the intention is to specify the output performance of the module, then it's appropriate to refer to the output requirements of the module, e.g. "A module with a CAUI-4 electrical interface shall meet it output requirements for an input signal defined by 83E.3.4.2."

SuggestedRemedy

If the intention of 83E.3.4.1 is to define the BER of the stressed input signal, delete 83E.3.4.1 since the definition is provided with more detail in 83E.3.4.2.1.

If the intention is to specify the output performance of the module, the output performance of the module must be left to the clause that defines the module output, therefore change "The CAUI-4 module input is defined to operate at a bit error ratio (BER) better than 10-15 for an input signal defined by 83E.3.4.2" to "A CAUI-4 module shall meet its output requirements for an input signal defined by 83E.3.4.2"

Response   *Response Status* **C**

REJECT.
This comment does not apply to the substantive changes between IEEE P802.3bm/D2.1 and IEEE P802.3bm/D2.0 or the unsatisfied negative comments from the initial ballot. Hence it is not within the scope of the recirculation ballot.

This is not a module specification, it is a specification for the CAUI-4 chip-to-module electrical interface alone. The intent of the statement is to define the BER for which the CAUI-4 electrical interface has to operate assuming an input defined by 83E.3.4.2.

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: Clause, Subclause, page, line

Cl **83E**
SC **83E.3.4.1**

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14/05/2014 19:18:51

Cl **95** *SC* **95.7.1** *P* **102** *L* **41** # 20013
Petrilla, John   Avago Technologies

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

After calculating TDP for multiple worst case transmitters, ones that provide minimally acceptable link margin, i.e. zero, the ability of TDP to predict link margin for MMF links does not appear adequate. Another metric, TxVEC, based on vetrical eye closure measured at the Tx output, TP2, should be used instead. See petrilla_01_0114 for more details. Adoption of this metric will improve the balance of test-escapes vs false-positives that exists with the TDP metric and removes the problems associated with a reference Tx that's required for the TDP metric. The set of Tx attributes captured by TDP are also captured by TxVEC.

SuggestedRemedy

In Table 95-6, replace TDP with TxVEC; 3 times including footnote b. For Launch power in OMA minus TDP (min), change -8 to -8.1. For Transmitter and dispersion penalty (TDP), each lane (max) change 5 to 5.1. In footnote b, there's no need to change 0.9 dB.

In Table 95-8, change 'Power budget (for max TDP)' to 'Power budget (for max TxVEC)' and change 'Allocation for penalties (for max TDP)' to 'Allocation for penalties (for max TxVEC)'.

In Table 95-10, change 'Transmitter and dispersion penalty (TDP)' to 'Transmitter and dispersion penalty (TxVEC)'

In 95.8.11 change TDP (occurs twice) to TxVEC

Replace the subclause 95.8.5 Transmitter and dispersion penalty (TDP) with a new subclause 95.8.5 Transmitter Vertical Eye Closure found in petrilla_01_0114.

If any of the above values are updated they will be found in petrilla_01_0114.

In 95.12.4.4 replace "Transmitter and dispersion penalty" with "Transmitter vertical eye closure"

Response   *Response Status* **C**

REJECT.
TDP vs a VEC spec has been (and continues to be) reviewed in the MMF ad hoc, no agreement to change the current draft has been reached. The commenter is invited to try to generate a consensus concerning this proposed change in the MMF Ad Hoc.

See petrilla_01_0114.

Cl **95** *SC* **95.7.1** *P* **106** *L* **40** # 21094
Petrilla, John   Avago Technologies

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

The ability of TDP to adequately predict link margin for MMF links is questionable and, consequently, basing the min OMA requirement on TDP measurements is problematic. For more detail see petrilla_01_0314. Another metric, TxVEC (Tx Vertical Eye Closure), provides a better correlation with link margin and has the advantages of not requiring a reference Tx and being easier and lower cost to implement while capturing all the Tx impairments that TDP captures. Fortunately, the value for TxVEC(max) is close enough to the the value for TDP(max) in draft 2.1 so that no change in values are required for TDP and the values that are dependent on TDP.

SuggestedRemedy

In Table 95-6, replace "Transmitter and dispersion penalty" with "Transmitter vertical eye closure", and TDP with TxVEC 3 times including footnote b.
In Table 95-8, change 'Power budget (for max TDP)' to 'Power budget (for max TxVEC)' and change 'Allocation for penalties (for max TDP)' to 'Allocation for penalties (for max TxVEC)'.
In Table 95-10, change 'Transmitter and dispersion penalty (TDP)' to 'Transmitter vertical eye closure(TxVEC)'
In 95.8.1.1 delete the first sentence of the first paragraph, "TDP is defined for each lane, at the BER specified in 95.1.1 on that lane." and the 4th sentence of the second paragraph, "To allow TDP measurement with Pattern 5, unstressed lanes for the error detector may be created by setting the power at
the reference receivers well above their sensitivities, or by copying the contents of the transmit lanes not under BER test to the error detector by other means."
Replace the subclause 95.8.5 Transmitter and dispersion penalty (TDP) with a new subclause 95.8.5 Transmitter Vertical Eye Closure found in petrilla_01_0314.
If any of the above values are updated they will be found in petrilla_01_0314.
In 95.12.4.4 replace "Transmitter and dispersion penalty" with "Transmitter vertical eye closure".

Response   *Response Status* **C**

REJECT.

While there is reasonable consensus within the Task Force that a change to an oscilloscope based measurement is desirable, there is currently insufficient consensus on the details of the replacement transmitter quality metric.
Further evidence for acceptable correlation between an oscilloscope based metric and link performance is requested, preferably based on measurement rather than modelling only.

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: Clause, Subclause, page, line

Cl **95**
SC **95.7.1**

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Cl **95**   *SC* **95.8**   *P* **104**   *L* **28**   # 20018

Petrilla, John   Avago Technologies

Comment Type   **ER**   *Comment Status*   **R**

Since it is not the intention to mandate specific tests and test methods but only to require specified results if tested according to the methods defined in the subclauses of 95.8, such a statement should be included in 95.8. There is such a statement in 95.8.1.1 but it may not be understood as applying to all tests and test methods.

SuggestedRemedy

Insert the following as the first sentences in 95.8, "The tests and test methods defined in the subclauses of 95.8 are not mandated to be applied to each 100GBASE-SR4 transmitter and receiver, rather only that the defined results are realized if tested according to the defined method. Alternative test methods that generate equivalent results may be used." If inserted the sentence, "Alternative test methods that generate equivalent results may be deleted from 95.8.1.1.

Response   *Response Status*   **C**

REJECT.

Each sub-section of 95.8 already includes either a parameter definition, or a reference to the spec value 'if measured using .' and a reference to the test definition. If this is not the case, then the commenter is invited to make specific comments to that effect.

No tests are mandated, but compliance to the spec value, if using the specified test method, is.

Whereas bit error ratios are unambiguous, other parameters (eg ER) when measured with different test methods could result in different numerical values; this would make checking spec compliance very complex.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **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   *SC* **95.8**   14/05/2014 19:19:03
SORT ORDER: Clause, Subclause, page, line