Cl **128**   *SC* **7.1.6**   *P* **109**   *L* **41**   # 1
McDermott, Thomas   Fujitsu

Comment Type **ER**   *Comment Status* **A**

The cluase deals with common mode output return loss, but references differential output retun loss in line 41, and the titel of figure 128-5 on page 110.

SuggestedRemedy

On page 109 line 41 - change 'differential mode' to 'common mode'.
Page 110 line 23 - change 'differenital mode' to 'common mode' in the figure title.

Response   *Response Status* **W**

ACCEPT.

Cl **128**   *SC* **128.2**   *P* **99**   *L* **46**   # 114
Bains, Amrik   Cisco Systems

Comment Type **ER**   *Comment Status* **A**

2.5GBASE-X uses 8B/10B 10 bit interface between PMA/PMD and not
"The PMD Service Interface supports the exchange of encoded and scrambled 64B/66B blocks between the
PMA and PMD entities."

SuggestedRemedy

The PMD Service Interface supports the exchange of encoded 8B/10B blocks between the PMA and PMD entities.

Response   *Response Status* **W**

ACCEPT.

Cl **00**   *SC*   *P* **101**   *L* **42**   # 115
Bains, Amrik   Cisco Systems

Comment Type **ER**   *Comment Status* **A**

1000BASE-KX shpuld be changes to 2.5GBAS-KXE

"The 1000BASE-KX PHY receiver should put unused functional blocks into a low power state to save energy."

SuggestedRemedy

1000BASE-KX shpuld be changes to 2.5GBAS-KXE

"The 1000BASE-KX PHY receiver should put unused functional blocks into a low power state to save energy."

Response   *Response Status* **W**

ACCEPT IN PRINCIPLE.

Should be worded:

"The 2.5GBASE-KX PHY receiver should put unused functional blocks into a low power state to save energy."

Cl **127A**   *SC* **127A**   *P* **157**   *L* **6**   # 116
D'Ambrosia, John   Futurewei, Subsidiary

Comment Type **ER**   *Comment Status* **A**

Annex127A consists of two sentences with a pointer to Annex36A. This does not help with ease of reading for the reader.

SuggestedRemedy

Delete Annex127A. Replace the last sentnece in second paragraph of 127.3.4. with - The patterns described in Annex 36A may be used
for 2.5GBASE-X except the nominal bit rate is 2.5 times faster and any references to the GMII applies to the XGMII."

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.
Delete Annex 127A

Replace sentence on page 94, line 18:
"Random jitter test patterns for 2.5GBASE-X are specified in Annex 127A."

With:
"The patterns described in Annex 36A may be used for 2.5GBASE-X except the nominal bit rate is 2.5 times faster and any references to the GMII applies to the XGMII."

Then remove Annex 127A.

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

Cl **125**   *SC* **125.1.4**   *P* **57**   *L* **23**   # 117
D'Ambrosia, John   Futurewei, Subsidiary

Comment Type   **TR**   *Comment Status*   **A**
Table 125-2 notes that autonegotiation is optional for 2.5GBASE-KX, however, in 73.3 it is stated that AN shall interact with PHYs. No note was found indicating that AN is optional to implement, but shall be implemented per Clause 73 if implemented.

SuggestedRemedy
Change entry in table for Row 2.5GBASE-KX to indicate that Clause 73 FEC is M

Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE.

Change entry in table for Row 2.5GBASE-KX to indicate that Clause 73 Auto-Negotiation is M.

Cl **128B**   *SC* **128B**   *P* **179**   *L* **5**   # 118
D'Ambrosia, John   Futurewei, Subsidiary

Comment Type   **ER**   *Comment Status*   **A**
Annex 128B is primarily a duplication of Annex 69B. Such duplication should be avoided.

SuggestedRemedy
There are two options
1.delete annex 128B - modify annex 69B to add in specific requirements related to 2.5GBASE-KR
2. Delete redundant text in annex 128b, and replace in each instance with pointer to the original text in Annex 69B

Response   *Response Status*   **W**
ACCEPT IN PRINCIPLE.

Use solution #1.
Delete annex 128B, and place 2.5G information into 69A.

Cl **130B**   *SC* **130B**   *P* **221**   *L* **5**   # 119
D'Ambrosia, John   Futurewei, Subsidiary

Comment Type   **ER**   *Comment Status*   **A**
Annex 130B is primarily a duplication of Annex 69B. Such duplication should be avoided.

SuggestedRemedy
There are two options
1.delete annex 130B - modify annex 69B to add in specific requirements related to 5GBASE-KR
2. Delete redundant text in annex 12830b, and replace in each instance with pointer to the original text in Annex 69B

Response   *Response Status*   **W**
ACCEPT IN PRINCIPLE.

Use solution #1.
Delete annex 130B, and place 5G information into 69A.

Cl **00**   *SC* **0**   *P* **0**   *L* **0**   # 124
Slavick, Jeff   Broadcom Limited

Comment Type   **ER**   *Comment Status*   **A**
802.3by is an offiical standard

SuggestedRemedy
Change all the 802.3by-201x to 8023by-2016

Response   *Response Status*   **W**
ACCEPT.

Cl **78**   *SC* **78.1.1**   *P* **53**   *L* **18**   # 125
Slavick, Jeff   Broadcom Limited

Comment Type   **TR**   *Comment Status*   **A**
The change from "these" to a list of Clauses didn't keep the entire list.

SuggestedRemedy
Add Clause 107 to the list of Clauses can generate RX_LPI_ACTIVE

Response   *Response Status*   **W**
ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **125**   Page 2 of 21
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   11/9/2016 9:57:15 PM
SORT ORDER: Comment ID

Cl **128A**   *SC* **128A.3.1.4.1**   *P* **166**   *L* **33**   # 126
Slavick, Jeff   Broadcom Limited

Comment Type **TR**   *Comment Status* **A**
PRBS13Q is a PAM4 data pattern.   If you want to use a NRZ PRBS13 pattern for Linear fit measurements you'll need to add that pattern to Clause 127

SuggestedRemedy
Add PRBS13 pattern definition, using the same polynomial that PRBS13Q uses to Clause 127 for use by 128A

Response   *Response Status* **W**
ACCEPT.

Same as comment #258.

Cl **128**   *SC* **128.7.1.2**   *P* **107**   *L* **34, 3**   # 127
Smith, Daniel   Seagate

Comment Type **ER**   *Comment Status* **A**
ReturnLoss is not consistant with other usage.

SuggestedRemedy
change to: Return_Loss

Response   *Response Status* **W**
ACCEPT.

Cl **128**   *SC* **128.7.1.5**   *P* **108**   *L* **31, 3**   # 128
Smith, Daniel   Seagate

Comment Type **ER**   *Comment Status* **A**
ReturnLoss is not consistant with other usage.

SuggestedRemedy
change to: Return_Loss

Response   *Response Status* **W**
ACCEPT.

Cl **128C**   *SC* **128C.4.4**   *P* **188**   *L* **41**   # 129
Smith, Daniel   Seagate

Comment Type **ER**   *Comment Status* **A**
Missing parenthesis on the term: Af)

SuggestedRemedy
s/b: A(f)

Response   *Response Status* **C**
ACCEPT.

Cl **130A**   *SC* **130A.3.1.1**   *P* **206**   *L* **37**   # 130
Smith, Daniel   Seagate

Comment Type **ER**   *Comment Status* **A**
Overbar on the decimal 193.93

SuggestedRemedy
remove the overbar

Response   *Response Status* **C**
ACCEPT.

Cl **FM**   *SC*   *P* **4**   *L* **10**   # 132
Smith, Daniel   Seagate

Comment Type **ER**   *Comment Status* **A**
spelling of the word arabic

SuggestedRemedy
Arabic not arabic

Response   *Response Status* **C**
ACCEPT.

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 **132**

Page 3 of 21
11/9/2016 9:57:15 PM

Cl **128**   *SC* **128.10.4.1**   *P* **116**   *L* **27**   # 133

Smith, Daniel   Seagate

Comment Type   **ER**   *Comment Status* **A**
Loopback function not effected

SuggestedRemedy
s/b: affected, not effected (it's a verb)

Response   *Response Status* **C**
ACCEPT.

[Editor's note: also changed in
128.6.5   p104 line 38
130.6.5   p140 line 31
]

Cl **128**   *SC* **128.10.4.1**   *P* **116**   *L* **35**   # 134

Smith, Daniel   Seagate

Comment Type   **ER**   *Comment Status* **A**
Loopback affect on Transmitter

SuggestedRemedy
s/b: Loopback effect on Transmitter (effect is a noun, a result, not an action word)

Response   *Response Status* **C**
ACCEPT.

Cl **127**   *SC* **127.2.6.2.3**   *P* **85**   *L* **2**   # 135

Smith, Daniel   Seagate

Comment Type   **ER**   *Comment Status* **A**
effecting hysteresis

SuggestedRemedy
s/b: affecting hysteresis (affect is a verb)

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

After examination, we decided to remove the statement about hystersis. It should read:

… sub-states, to move between the
SYNC_ACQUIRED_1 and LOSS_OF_SYNC states.

Cl **127**   *SC* **127.2.6.1.3**   *P* **74**   *L* **14**   # 136

Smith, Daniel   Seagate

Comment Type   **ER**   *Comment Status* **A**
capitalization in name

SuggestedRemedy
should read: PMD_SIGNAL.indication(SIGNAL_DETECT).

Response   *Response Status* **C**
ACCEPT.

Cl **127**   *SC* **127.2.6.1.6**   *P* **78**   *L* **47**   # 137

Smith, Daniel   Seagate

Comment Type   **ER**   *Comment Status* **A**
capitalization in name

SuggestedRemedy
should read: PMD_SIGNAL.indication(SIGNAL_DETECT).

Response   *Response Status* **C**
ACCEPT.

Cl **128**   *SC* **128.7.1.4**   *P* **107**   *L* **50**   # 138

Smith, Daniel   Seagate

Comment Type   **TR**   *Comment Status* **A**
change to be a "maximum"

SuggestedRemedy
should read:
shall be less than or equal to 1200 mV.

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

Double-documentation. Use table values instead.

Change text to:
For a 1010 pattern, the Differential peak-to-peak output voltage is defined in Table 128-4.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **138**   Page 4 of 21
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   11/9/2016 9:57:15 PM
SORT ORDER: Comment ID

Cl **128**   *SC* **128.7.1.4**   *P* **108**   *L* **1**   # 139
Smith, Daniel   Seagate

Comment Type **TR**   *Comment Status* **A**
change to be a "maximum"

SuggestedRemedy
should read:
shall be less than or equal to 30 mV peak-to-peak,

Response   *Response Status* **C**
ACCEPT.

Double-documentation. Use table values instead.

Change text to:
The Differential peak to peak output voltage when TX is disabled is defined in Table 128-4.

Cl **128**   *SC* **128.7.1.4**   *P* **108**   *L* **19**   # 140
Smith, Daniel   Seagate

Comment Type **TR**   *Comment Status* **A**
change to be a "maximum"

SuggestedRemedy
should read:
shall be less than or equal to 30 mV within

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

Double-documentation. Use table values instead.

Change text to:
For EEE capability, the transmitter's differential peak-to-peak output voltage is defined in Table 128-4 within 500 ns of tx_mode being set to QUIET and remain so while tx_mode is set to QUIET.

Cl **128**   *SC* **128.10.4.3**   *P* **117**   *L* **19**   # 141
Smith, Daniel   Seagate

Comment Type **TR**   *Comment Status* **A**
change to be a "maximum"

SuggestedRemedy
Value/Comment column should read:
Less than or equal to 30 mV within 500 ns of tx_mode = QUIET

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

For row TC3: remove '<' symbol in front of <1200 mV, pk-pk. Change maximum to (max).

For row TC4, change to:
Tx differential output voltage (max) when disabled.
Remove '<' from 30 mV, pk-pk.

Cl **130**   *SC* **130.7.1.4**   *P* **141**   *L* **46**   # 142
Smith, Daniel   Seagate

Comment Type **TR**   *Comment Status* **A**
change to be a "maximum"

SuggestedRemedy
should read:
shall be less than or equal to 1200 mV,

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

Double documentation. Use table value instead. Text should read:

For a 1010 pattern, the peak-to-peak Differential peak-to-peak output voltage is defined in Table 130–4, regardless of equalization setting.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **142**   Page 5 of 21
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   11/9/2016 9:57:15 PM
SORT ORDER: Comment ID

Cl **130**　　　*SC* **130.7.1.4**　　　　　*P* **141**　　　*L* **47**　　　# 143
Smith, Daniel　　　　　　　　　　　　Seagate

Comment Type **TR**　　　*Comment Status* **A**
　　change to be a "maximum"

SuggestedRemedy
　　should read:
　　shall be less than or equal to 30 mV peak-to-peak

Response　　　　　　*Response Status* **C**
　　ACCEPT IN PRINCIPLE.

　　Double documentation. Use table value instead. Text should read:

　　Differential peak-to-peak output voltage with TX disabled is defined in Table 130–4.

Cl **130**　　　*SC* **130.7.1.4**　　　　　*P* **142**　　　*L* **17**　　　# 144
Smith, Daniel　　　　　　　　　　　　Seagate

Comment Type **TR**　　　*Comment Status* **A**
　　change to be a "maximum"

SuggestedRemedy
　　should read:
　　shall be less than or equal to 30 mV

Response　　　　　　*Response Status* **C**
　　ACCEPT IN PRINCIPLE.

　　Double documentation. Use table value instead. Text should read:

　　For EEE capability, the transmitter's Differential peak-to-peak output voltage with TX
　　disabled is defined in Table 130–4, within 500 ns of tx_mode being set to QUIET and
　　remain so while tx_mode is set to QUIET.

Cl **130**　　　*SC* **130.10.4.4**　　　　*P* **152**　　　*L* **11**　　　# 145
Smith, Daniel　　　　　　　　　　　　Seagate

Comment Type **TR**　　　*Comment Status* **A**
　　change to be a "maximum"

SuggestedRemedy
　　Value/Comment column should read:
　　Less than or equal to 1200 mV for a 1010 pattern

Response　　　　　　*Response Status* **C**
　　ACCEPT IN PRINCIPLE.

　　The voltage is a 'maximum'. Change text in Value column to read:

　　1200 mV for a 1010 pattern

Cl **130**　　　*SC* **130.10.4.4**　　　　*P* **152**　　　*L* **14**　　　# 146
Smith, Daniel　　　　　　　　　　　　Seagate

Comment Type **TR**　　　*Comment Status* **A**
　　change to be a "maximum"

SuggestedRemedy
　　Value/Comment column should read:
　　Less than or equal to 30 mV

Response　　　　　　*Response Status* **C**
　　ACCEPT.

　　Maximum transmitter differential
　　peak-to-peak voltage when
　　TX disabled should read in the Value column:

　　30 mV

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 **146**   Page 6 of 21
11/9/2016 9:57:15 PM

Cl **130**　　*SC* **130.10.4.4**　　　　*P* **152**　　　*L* **24**　　　# 147

Smith, Daniel　　　　　　　　　　　Seagate

Comment Type **TR**　　*Comment Status* **D**
change to be a "maximum"

SuggestedRemedy
Value/Comment column should read:
Less than or equal to 30 mV within 500 ns of tx_quiet

Proposed Response　　　　*Response Status* **Z**
REJECT.

This comment was WITHDRAWN by the commenter.

Cl **128A**　　*SC* **128A.1.1**　　　　*P* **161**　　　*L* **29**　　　# 148

Smith, Daniel　　　　　　　　　　　Seagate

Comment Type **TR**　　*Comment Status* **D**
change to be a "maximum"

SuggestedRemedy
Value/Comment column should read:
The bit error ratio (BER) shall be less than or equal to 10-12 with any errors...

Proposed Response　　　　*Response Status* **Z**
REJECT.

This comment was WITHDRAWN by the commenter.

Cl **130A**　　*SC* **130A.1.1**　　　　*P* **203**　　　*L* **29**　　　# 149

Smith, Daniel　　　　　　　　　　　Seagate

Comment Type **TR**　　*Comment Status* **D**
change to be a "maximum"

SuggestedRemedy
Value/Comment column should read:
The bit error ratio (BER) shall be less than or equal to 10-12 with any errors...

Proposed Response　　　　*Response Status* **Z**
REJECT.

This comment was WITHDRAWN by the commenter.

Cl **128**　　*SC* **128.7.1.7**　　　　*P* **110**　　　*L* **28, 3**　　# 150

Smith, Daniel　　　　　　　　　　　Seagate

Comment Type **TR**　　*Comment Status* **A**
Rise/fall time ranges are ambiguous.

SuggestedRemedy
change wording to:
... transition time shall be from 30 ps to 100 ps, as measured at...

Response　　　　　　*Response Status* **W**
ACCEPT IN PRINCIPLE.

Replace both sentences with:

The transition time shall as shown in Table 128-4 using the high-frequency test pattern of 128B.1.

[Editor's note: the reference to test pattern may change. 128B.1 is incorrect.]

Cl **128**　　*SC* **128.7.2.1**　　　　*P* **112**　　　*L* **3**　　　# 151

Smith, Daniel　　　　　　　　　　　Seagate

Comment Type **ER**　　*Comment Status* **A**
plural missing

SuggestedRemedy
should read:
The receiver interference tolerance consists...

Response　　　　　　*Response Status* **C**
ACCEPT IN PRINCIPLE.

Should be worded:
The receiver interference tolerance shall consist of the test as described in Annex 69A with the parameters specified in Table 128–6.

[Editor's note: comment 128B is being changed to 69A in comments 118 and 119.]

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 **151**　　Page 7 of 21
11/9/2016 9:57:15 PM

Cl **00**   *SC* **0**   *P* **11**   *L* **13**   # 155
Grow, Robert   RMG Consulting

Comment Type   **ER**   *Comment Status*   **A**
Update with current document descriptions.

SuggestedRemedy
I personally prefer adding the document list with draft numbers that were used when creating the draft in an Editor's note above this list as this is the first location where base text is drawn from preceding amendments and corrigenda. The Editor's note list on p. 25 does not provide sufficient information for this purpose.

From my most recent review updates to the list are appropriate:
p. 12, l. 42 hopefully publication editors will correct the grammar, other projects have deleted "for" to do that in their drafts;
p.11, l.26 the published standard includes Annex 109C in the description;
p.11, l.51 Physical Layer is the capitalization in P802.3bn/D3.2;
p.12, l.14 P802.3bu/D3.1 adds to the last line of the description; IEEE 802.3 single twisted-pair interfaces;
p.12, l.15 as you probably know, P802.3bv has been assigned Amendment 9 relocate description;
p.12, l.24 The P802.3bv/D3.0 description has been significantly changed. Update to: This amendment includes changes to IEEE Std 802.3-2015 and add clause 115 and Annex 115A. This amendment adds point-to-point 1000 Mb/s Physical Layer (PHY) specifications and management parameters for operation on duplex plastic optical fiber (POF) targeting use in automotive, industrial, home network and other applications.
p.12, l.35 Consider adding Corregigendum 1 description.

Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE.
[Editor's note: with the exception .bu and .bn descriptions be lifted from the latest drafts. Also add Corrigendum 1 to the list.

Use .bv as an example of where to place this and the needed content, based on 802.3cb's use of other drafts. It is also recommended that the particular draft used, be quoted with this information.]
[Also, can add an editor's note, in the draft, that states "This information may change for Sponsor Ballot."]

Cl **1**   *SC* **1.3**   *P* **26**   *L* **15**   # 164
Grow, Robert   RMG Consulting

Comment Type   **ER**   *Comment Status*   **R**
The source for the document is possbily unknown for many readers.

SuggestedRemedy
Please add a footnote pointing to where to get the document.

Response   *Response Status*   **C**
REJECT.
[Editor's note: SFF is already used in the base standard.]

Cl **78**   *SC* **78.1.4**   *P* **53**   *L* **51**   # 170
Grow, Robert   RMG Consulting

Comment Type   **ER**   *Comment Status*   **A**
Please note that P802.3bz/D3.3 as submitted to RevCom properly inserts content into Table 1 considering the insert of P802.3bp, but failed to update the editing instructions for Tables 78.2 and 78-4 similarly. P802.3bv is also inserting three port types into all three tables. Unless IEEE Std 802.3bz corrects this problem, during publication preparation, the 2.5G and 5G values in Tables 2 and 4 will be inserted in the midst of 1000BASE-terms.

SuggestedRemedy
While insert relative to is fine, you need to encourage publication editors to correct the order problem in P802.3/D3.3 or this project will compound the problem.

Response   *Response Status*   **C**
ACCEPT IN PRINCIPLE.

The publication editors did fix the bz problems.

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 **170**   Page 8 of 21
11/9/2016 9:57:15 PM

Cl **128**   *SC* **128.7.1**   *P* **106**   *L* **28**   # 175
Hidaka, Yasuo   Fujitsu Lab of America

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

"Duty Cycle Distortion (DCD)" is not an adequate term to represent a type of jitter, because it is not clear whether the DCD is on the signal itself or on the clock that genarets the signal. Use of this term is now discouraged. We should call it Even-Odd Jitter that is defined in 92.8.3.8.1.

SuggestedRemedy

Change "Duty Cycle Distortion" with "Even-Odd Jitter" from the entire document.
It is used in the following locations:
128.7.1, P106, L28, L30
128.7.1.8, P110, L40
128.7.1.9, P110, L47, L48
128.7.2.1, P112, L22
130.7.1, P140, L28, L31
130.7.1.8, P144, L42
130.7.1.9, P144, L48, L49
130.7.2.1, P147, L22
130.10.4.4, P152, L47
128A.3.1, P164, L26
128A.3.1.6, P167, L1, L2
128A.3.3, P171, L25
128B.2.1, P180, L19, L21
130A.3.1, P206, L26
130A.3.1.6, P209, L18, L19
130A.3.3, P213, L28
130B.2.1, P222, L17, L19

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

Add note to end of 128.7.1.9 and 130.7.1.9 :

NOTE—Duty Cyle Distortion is also referred to as Even-odd jitter (see 92.8.3.8.1).

Cl **130**   *SC* **130.7.1.8**   *P* **144**   *L* **35**   # 191
Hidaka, Yasuo   Fujitsu Lab of America

Comment Type   **TR**   *Comment Status* **D**

Methodology of jitter measurement in Annex 48B.3 is old and not good.

SuggestedRemedy

Use the methodology of jitter measurement described in 92.8.3.8 which uses PRBS9.

Proposed Response   *Response Status* **Z**
REJECT.

This comment was WITHDRAWN by the commenter.

Cl **130**   *SC* **130.7.1.11**   *P* **145**   *L* **53**   # 192
Hidaka, Yasuo   Fujitsu Lab of America

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

v1 is defined as the average voltage in the interval t1 to t1-2T, but t1 is in the middle of the rising edge.

SuggestedRemedy

Define v1 as the average voltage in the interval t1+2T to t2-T.

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

Define v1 as the average voltage in the interval t1+2T to t2-2T.

Cl **130**   *SC* **130.7.1.11**   *P* **146**   *L* **2**   # 193
Hidaka, Yasuo   Fujitsu Lab of America

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

v3 is defined as the average voltage in the interval t2 to t3-T, but t2 is in the middle of falling edge.

SuggestedRemedy

Define v3 as the average voltage in the interval t2+2T to t3-T.

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

Define v3 as the average voltage in the interval t2+2T to t3-2T.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **193**   Page 9 of 21
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   11/9/2016 9:57:15 PM
SORT ORDER: Comment ID

Cl **128A**　　*SC* **128A.3.1.4.1**　　　　*P* **166**　　*L* **32**　　　# 195
Hidaka, Yasuo　　　　　　　　　　Fujitsu Lab of America

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

The linear pulse fitting procedure in 94.3.12.5.2 is for PAM4 signal, and PRBS13Q is a PAM4 test pattern.

SuggestedRemedy

Use the linear pulse fitting procedure for NRZ that is described in 92.8.3.5.1 and use PRBS9 test pattern.

Response　　　　　　　*Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment #258.

Cl **128A**　　*SC* **128A.3.3.1**　　　　*P* **171**　　*L* **36**　　　# 196
Hidaka, Yasuo　　　　　　　　　　Fujitsu Lab of America

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

The linear pulse fitting procedure in 94.3.12.5.2 is for PAM4 signal, and PRBS13Q is a PAM4 test pattern.

SuggestedRemedy

Use the linear pulse fitting procedure for NRZ that is described in 92.8.3.5.1 and use PRBS9 test pattern.

Response　　　　　　　*Response Status* **C**

ACCEPT IN PRINCIPLE.

See comment #258.

Cl **130A**　　*SC* **130A.3.1.4.1**　　　　*P* **208**　　*L* **48**　　　# 197
Hidaka, Yasuo　　　　　　　　　　Fujitsu Lab of America

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

The linear pulse fitting procedure in 94.3.12.5.2 is for PAM4 signal, and PRBS13Q is a PAM4 test pattern.

SuggestedRemedy

Use the linear pulse fitting procedure for NRZ that is described in 92.8.3.5.1 and use PRBS9 test pattern.

Response　　　　　　　*Response Status* **C**

ACCEPT IN PRINCIPLE.

Change is similar to comment #267.

Cl **130A**　　*SC* **130A.3.3.1**　　　　*P* **213**　　*L* **39**　　　# 198
Hidaka, Yasuo　　　　　　　　　　Fujitsu Lab of America

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

The linear pulse fitting procedure in 94.3.12.5.2 is for PAM4 signal, and PRBS13Q is a PAM4 test pattern.

SuggestedRemedy

Use the linear pulse fitting procedure for NRZ that is described in 92.8.3.5.1 and use PRBS9 test pattern.

Response　　　　　　　*Response Status* **C**

ACCEPT IN PRINCIPLE.

Change is similar to comment #267.

Cl **45**　　*SC* **45.2.3.7a**　　　　*P* **35**　　*L* **21**　　　# 202
Lusted, Kent　　　　　　　　　　Intel

Comment Type **ER**　　*Comment Status* **A**

table 45-125a entries for bits 3.21.8 and 3.21.7 are not underlined (per IEEE style guide) to indicate insertions per editing instructions

SuggestedRemedy

Underline as necessary

Response　　　　　　　*Response Status* **W**

ACCEPT.

Same as comment #15.

Cl **128**　　*SC* **128.7.1.4**　　　　*P* **107**　　*L* **54**　　　# 203
Lusted, Kent　　　　　　　　　　Intel

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

The minimum peak-to-peak transmitter amplitude is not specified in the specification. It is inferred to be >720mV in the "EEE capability" paragraph on page 108, linke 19. However, it is this reader's interpretation of that EEE paragraph that the >720 requirement only applies to PHYs that support the optional EEE.

SuggestedRemedy

Sufficiently define the minimum peak-to-peak amplitude for the transmitter.

Response　　　　　　　*Response Status* **W**

ACCEPT IN PRINCIPLE.

In Table 128-4 and Table 130-4 add a new row for
Differential peak-to-peak output voltage (min)
as 800 mV.

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 **203**　　Page 10 of 21
11/9/2016 9:57:15 PM

Cl **128**　　　*SC* **128.7.1.10**　　　*P* **111**　　　*L* **7**　　　# 204
Lusted, Kent　　　　　　　　　　　　Intel

Comment Type **ER**　　　*Comment Status* **A**
Figure 128-6 has a shadowing feature enabled that reduces readability.

SuggestedRemedy
Remove shadowing.

Response　　　　　　　*Response Status* **W**
ACCEPT.
[Editor's note: this figure is an imported graphic that must be corrected outside of Framemaker.]

Cl **128**　　　*SC* **128.7.1.10**　　　*P* **111**　　　*L* **26**　　　# 205
Lusted, Kent　　　　　　　　　　　　Intel

Comment Type **TR**　　　*Comment Status* **A**
For v1 and v2, the average voltage in the interval t1 to t2 includes the shoulder rise/fall times of the waveform. this artificially reduces the measured voltage from the true amplitude of the waveform at the midpoint.

SuggestedRemedy
consider defining a window in the flat portion of the waveform, away from the rise and falling edges, as the steady state voltage. see figure 72-12 for inspiration.

Response　　　　　　　*Response Status* **W**
ACCEPT IN PRINCIPLE.

See comment #192 and #193.
[Editor's note: this figure is an imported graphic that must be corrected outside of Framemaker.]

Cl **130**　　　*SC* **130.7.1.11**　　　*P* **145**　　　*L* **29**　　　# 206
Lusted, Kent　　　　　　　　　　　　Intel

Comment Type **ER**　　　*Comment Status* **A**
Figure 130-7 has a shadowing feature enabled that reduces readability.

SuggestedRemedy
Remove shadowing.

Response　　　　　　　*Response Status* **W**
ACCEPT.
[Editor's note: this figure is an imported graphic that must be corrected outside of Framemaker.]

Cl **130**　　　*SC* **130.7.1.11**　　　*P* **146**　　　*L* **8**　　　# 207
Lusted, Kent　　　　　　　　　　　　Intel

Comment Type **TR**　　　*Comment Status* **A**
value for Rpre is not defined in specification.
the min and max value of Rpre is not defined in the specification.

SuggestedRemedy
Set a value for Rpre.
Define the min and max value of Rpre

Add relevant PICS entry.

Response　　　　　　　*Response Status* **W**
ACCEPT IN PRINCIPLE.
See comment #317 for first part

second part:
add new entry FS19 in
130.10.4.2 PMD functional specifications
to cover the transmitter waveform.
Add row FS19 with the following column content:
Feature: Pre-cursor ratio
Subclause: 130.7.1.11
Value/Comment: as specified in Table 130-4
Status: M
Support: Yes [ ]

Cl **130**　　　*SC* **130.7.1.11**　　　*P* **145**　　　*L* **52**　　　# 208
Lusted, Kent　　　　　　　　　　　　Intel

Comment Type **TR**　　　*Comment Status* **A**
For v1 and v3, the average voltage in the interval t1 to t2-T includes the shoulder rise time of the waveform. this artificially reduces the measured voltage from the true amplitude of the waveform at the midpoint.

SuggestedRemedy
consider defining a window in the flat portion of the waveform, away from the rise and falling edges, as the steady state voltage. see figure 72-12 for inspiration.

Response　　　　　　　*Response Status* **W**
ACCEPT IN PRINCIPLE.

See comments #192 and #193

[Editor's note: this figure is an imported graphic that must be corrected outside of Framemaker.]

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 **208**　　　Page 11 of 21
11/9/2016 9:57:15 PM

Cl **130**　　　*SC* **130.7.1.7**　　　　　*P* **144**　　　*L* **30**　　　　# 209
Lusted, Kent　　　　　　　　　　　　　Intel

Comment Type **TR**　　*Comment Status* **A**
The rising and falling transition times requirement references v1 and v4. v4 is the pre-emphasis point. v3 is the negative waveform level.

SuggestedRemedy
change "v4" to "v3"

Response　　　　　　*Response Status* **W**
ACCEPT.

Cl **1**　　　*SC* **1.4**　　　　　*P* **26**　　　*L* **27**　　　　# 210
Lusted, Kent　　　　　　　　　　　　　Intel

Comment Type **ER**　　*Comment Status* **A**
there are definitions listed in the editorial note do not match that of the entries below.

SuggestedRemedy
list all entries in editing instructions or remove explicit reference to terms in editing instructions.

Response　　　　　　*Response Status* **W**
ACCEPT IN PRINCIPLE.

List all entries in editing instructions.

Cl **1**　　　*SC* **1.4**　　　　　*P* **26**　　　*L* **40**　　　　# 211
Lusted, Kent　　　　　　　　　　　　　Intel

Comment Type **TR**　　*Comment Status* **A**
the definition for 5GBASE-R incorrectly references 10GBASE-R.

SuggestedRemedy
Consider changing "10GBASE-R" to "5GBASE-R" in 1.4.74a4

Response　　　　　　*Response Status* **W**
ACCEPT.

Cl **1**　　　*SC* **1.4**　　　　　*P* **26**　　　*L* **50**　　　　# 212
Lusted, Kent　　　　　　　　　　　　　Intel

Comment Type **TR**　　*Comment Status* **A**
The P802.3bs project is modifying the definition of BASE-R also.

The P802.3by-20xx project is P802.3-2016.

SuggestedRemedy
Add to editor note the dependency on P802.3bs changes to the definition of BASE-R.

Update reference to 802.3by with the published year.

Response　　　　　　*Response Status* **W**
ACCEPT IN PRINCIPLE.

Change 201x to 2016 because 802.3.by is now published.

Add the following note:
This definition is being changed by 802.3bs in parallel.

Cl **45**　　　*SC* **45.2.3.7a**　　　　　*P* **35**　　　*L* **21**　　　　# 213
Lusted, Kent　　　　　　　　　　　　　Intel

Comment Type **ER**　　*Comment Status* **A**
table 45-124a entries for bits 3.9.2 and 3.9.3 are not underlined (per IEEE style guide) to indicate insertions per editing instructions

SuggestedRemedy
Underline as necessary

Response　　　　　　*Response Status* **W**
ACCEPT.

Same as comment #15.

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 **213**　　　Page 12 of 21
11/9/2016 9:57:15 PM

Cl **73**   *SC* **73.11.4.4**   *P* **51**   *L* **5**   # 214
Lusted, Kent   Intel

Comment Type   **TR**   *Comment Status* **D**
   PICS is missing change to Std 802.3-2015 Clause 73.11.4.4 PICS entry RF5 for
   2.5GBASE-KX parallel detection

SuggestedRemedy
   Change PICS entry for RF5 to include 2.5GBASE-KX

Proposed Response   *Response Status* **W**
   ACCEPT IN PRINCIPLE.

   PICS entry for RF5 to include 2.5GBASE-KX and associated editing instructions.

   [Editor's note: I imported new section 73.11.4.4 from Std 802.3-2015]

Cl **1**   *SC* **1.5**   *P* **27**   *L* **6**   # 243
Baden, Eric   Broadcom Limited

Comment Type   **ER**   *Comment Status* **A**
   2.5GSEI line is missing period (".") at the end of sentence.   Also 5GSEI

SuggestedRemedy
   Fix them

Response   *Response Status* **W**
   ACCEPT.

Cl **127**   *SC* **127.2.5.6**   *P* **69**   *L* **40**   # 246
Baden, Eric   Broadcom Limited

Comment Type   **TR**   *Comment Status* **A**
   Link status (remote fault) signalling indication that are native to XGMII but not GMII should
   be made optional, and stated as such.

SuggestedRemedy
   Change "A sequence ordered_set is used to convey various link status such as local fault
   or remote fault." to "... convey various optional link status..."

   And "The 24 bit data of the sequence ordered_set on the XGMII are mapped to S0, S1, S2,
   S3 (see 127.2.4.2), and /W0/, /W1/, /W2/, /W3/ are the 8B/10B mapped version." to
   …ordered_set on the XGMII, when implemented, are mapped to S0, …."

Response   *Response Status* **W**
   ACCEPT.

Cl **127**   *SC* **127.7.4**   *P* **96**   *L* **12**   # 247
Baden, Eric   Broadcom Limited

Comment Type   **TR**   *Comment Status* **D**
   If my comment on 127.2.5.6 on link status signalling to be made optional is accepted,
   PICS entry needs to be added

SuggestedRemedy
   Add a line for LNKS; Implementation of PCS Link Status Signalling; Subclause 127.2.5.6;
   O; Yes [ ] No []

Proposed Response   *Response Status* **W**

   [Editor's note: this comment (#247) is dependent on acceptance of #246.]

Cl **128**   *SC* **128.7.1.10**   *P* **111**   *L* **4**   # 249
Healey, Adam   Broadcom Ltd.

Comment Type   **TR**   *Comment Status* **A**
   A procedure for the measurement for v1 and v2 is provided but no requirements on the
   values of v1 and v2 are given.

SuggestedRemedy
   Include requirements for v1 and v2 or, if there are no requirements, remove the subclause.

Response   *Response Status* **C**
   ACCEPT IN PRINCIPLE.

   OBE, see comment #297, subclause 128.7.1.10 has been deleted.

Cl **128**   *SC* **128.8**   *P* **113**   *L* **10**   # 250
Healey, Adam   Broadcom Ltd.

Comment Type   **ER**   *Comment Status* **A**
   The interconnect requirements are defined in Annex 128C.

SuggestedRemedy
   Correct the reference.

Response   *Response Status* **C**
   ACCEPT.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **250**   Page 13 of 21
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   11/9/2016 9:57:15 PM
SORT ORDER: Comment ID

Cl **130**   *SC* **130.7.1.11**   *P* **145**   *L* **25**   # 252
Healey, Adam   Broadcom Ltd.

Comment Type   **TR**   *Comment Status* **A**
A procedure for the measurement of v1, v2, v3, and v4 (and Rpre) is provided but no requirements on the values of v1, v2, v3, and v4 (and Rpre) are given.

SuggestedRemedy
Include the requirements or, if there are no requirements, remove the subclause.

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

See comment #317.

This was approved 6 Yes, 0 No, 0 Abstain.

Cl **127A**   *SC* **127A**   *P* **157**   *L* **6**   # 253
Healey, Adam   Broadcom Ltd.

Comment Type   **TR**   *Comment Status* **A**
The only 2.5GBASE-X PMD is the one defined by Clause 128 and that clause explicitly defines the test pattern to be used for each parameter. Further, Clause 128 does not appear to cite and Annex 36A test patterns. Therefore, this annex seems to have no purpose.

SuggestedRemedy
Remove the Annex.

Response   *Response Status* **C**
ACCEPT.

Cl **128A**   *SC* **128A.1**   *P* **159**   *L* **13**   # 255
Healey, Adam   Broadcom Ltd.

Comment Type   **TR**   *Comment Status* **A**
Since this is an Annex to Clause 128, it seems reasonable to assume that transmitters and receivers that satisfy the Clause 128 requirements are suitable for this application. If this is the case, then it seems TP0D-H and TP0H-D should be equivalent to TP1 in Clause 128, and TP5D-H and TP5H-D should be equivalent to to TP4 in Clause 128. If so, then it seems that channel between TP0D-H and TP5H-D (or TP0H-D and TP5D-H) is simply a specific partitioning of the generic channel described in Annex 128C. If all of this is correct, then it seems that the text and/or test point definitions should be modified to make this clear. If it is not correct, then the relationship between this interface and clause it is associated with is unclear. Is this Annex defining a completely different PMD?

SuggestedRemedy
Clarify the relationship between a 2.5GBASE-KX PMD and the 2.5GSEI.

Response   *Response Status* **C**
ACCEPT.
[Editor's note: the commenter agreed to change the paragraph as follows, by adding this before the last sentence:

The compliance point definitions provide a unique partitioning of the channel defined in Annex 128C, such that the test points TP0D-H and TP0H-D defined in this Annex are equivalent to TP1 defined in Annex 128C, and TP5D-H and TP5H-D defined in this Annex are equivalent to TP4 defined in Annex 128C.
]

Cl **128A**   *SC* **128A.1**   *P* **160**   *L* **8**   # 256
Healey, Adam   Broadcom Ltd.

Comment Type   **TR**   *Comment Status* **A**
In Figure 128A-1, the test point adjacent to the PMD transmit function is TP0 but here it appears to be TP1. Which is correct?

SuggestedRemedy
Include the TX PCB before TP1 or change the test point to TP0.

Response   *Response Status* **C**
ACCEPT.

Fix figure 128A-2 to show the 2nd reference to TP1 as TP0 and elongate the path to make it look differrent.

[Editor's note: duplicate of #257]

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **256**   Page 14 of 21
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   11/9/2016 9:57:15 PM
SORT ORDER: Comment ID

Cl **128A**   *SC* **128A.1**   *P* **160**   *L* **27**   # 257

Healey, Adam   Broadcom Ltd.

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

Why is the loss from TP1D-H to the connector 0.9 dB in one part of the figure and 1.375 dB in another part of the figure. What has changed? Similarly for the TP1 to TP5 insertion loss.

SuggestedRemedy

Clarify the difference between the diagrams in Figure 128A-2.

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

Fix figure 128A-2 to show the 2nd reference to TP1 as TP0 and elongate the path to make it look differrent.

See file
http://www.ieee802.org/3/cb/public/sep16/calbone_3cb_02_0916.pdf

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Cl **128A**   *SC* **128A.3.1.4.1**   *P* **166**   *L* **33**   # 258

Healey, Adam   Broadcom Ltd.

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

PRBS13Q is a PAM4 test pattern and seems to be inappropriate for this interface. Furthermore, 94.3.12.5.2 pertains to the measurement of PAM4 signals. Note the similar issue with 128A.3.3.1.

SuggestedRemedy

Change the reference to 92.8.3.5 or a similar NRZ-based measurement procedure. Note that 92.8.3.5 specified the use of PRBS9 so no expection for the test pattern would likely be required in this case.

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

Change the wording to the text shown below.

The linear fit pulse response is characterized using the procedure described in 92.8.3.5.1 with the exception that the measurement is performed at TP4H-D rather than TP2 and Np =100.

Cl **130A**   *SC* **130A.1**   *P* **201**   *L* **13**   # 261

Healey, Adam   Broadcom Ltd.

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

Since this is an Annex to Clause 130, it seems reasonable to assume that transmitter and receivers that satisfy the Clause 130 requirements are suitable for this application. If this is the case, then it seems TP0D-H and TP0H-D should be equivalent to TP1 in Clause 128, and TP5D-H and TP5H-D should be equivalent to to TP4 in Clause 130. If so, then it seems that channel between TP0D-H and TP5H-D (or TP0H-D and TP5D-H) is simply a specific partitioning of the generic channel described in Annex 128C. If all of this is correct, then it seems that the text and/or test point definitions should be modified to make this clear. If it is not correct, then the relationship between this interface and clause it is associated with is unclear. Is this Annex defining a completely different PMD?

SuggestedRemedy

Clarify the relationship between a 5GBASE-KR PMD and the 5GSEI.

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

Same resolution as comment #255 but for Annex 130A.

Cl **130A**   *SC* **130A.1**   *P* **202**   *L* **7**   # 262

Healey, Adam   Broadcom Ltd.

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

In Figure 130A-1, the test point adjacent to the PMD transmit function is TP0 but here it appears to be TP1. Which is correct?

SuggestedRemedy

Include the TX PCB before TP0 or change the test point to TP1.

Response   *Response Status*   **C**

ACCEPT IN PRINCIPLE.

Fix figure 130A-1 to show the 2nd reference to TP1 as TP0 and elongate the path to make it look differrent.

See file calbone_3cb_01_0916.pdf.

[Editor's note: file located at http://www.ieee802.org/3/cb/public/sep16/index.html]

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 **262**

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11/9/2016 9:57:15 PM

Cl **130A**   *SC* **130A.1**   *P* **202**   *L* **14**   # 263

Healey, Adam   Broadcom Ltd.

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

Why is the loss from TP1D-H to the connector 1.2 dB in one part of the figure and 2 dB in another part of the figure. What has changed? Similarly for the TP1 to TP5 insertion loss.

SuggestedRemedy

Clarify the difference between the diagrams in Figure 130A-2.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Fix figure 130A-2 to show the 2nd reference to TP1 as TP0 and elongate the path to make it look differrent.

Refer to:
calbone_3cb_01_0916.pdf posted on Public page for Sept Interim.

[Editor's note: file located at http://www.ieee802.org/3/cb/public/sep16/index.html]

Cl **128A**   *SC* **128A.2**   *P* **163**   *L* **17**   # 264

Healey, Adam   Broadcom Ltd.

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

In the second part of the figure, it seems the test point at the PMD receiver function should be TP5H-D. the test point at the connection interface should be TP4H-D, the "Tx PCB" should be "Rx PCB", and the AC coupling capacitors shown between the TP4 and TP5.

SuggestedRemedy

Modify the figure per the comment.

Response   *Response Status* **C**

ACCEPT.
File: calbone_3cb_01_0916.pdf

Cl **130A**   *SC* **130A.2**   *P* **205**   *L* **20**   # 265

Healey, Adam   Broadcom Ltd.

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

In the second part of the figure, it seems the test point at the PMD receiver function should be TP5H-D. the test point at the connection interface should be TP4H-D, the "Tx PCB" should be "Rx PCB", and the AC coupling capacitors shown between the TP4 and TP5.

SuggestedRemedy

Modify the figure per the comment.

Response   *Response Status* **C**

ACCEPT.

See file http://www.ieee802.org/3/cb/public/sep16/calbone_3cb_01_0916.pdf

Cl **130A**   *SC* **130A.3.1**   *P* **206**   *L* **9**   # 266

Healey, Adam   Broadcom Ltd.

Comment Type **ER**   *Comment Status* **A**

The "Subclause reference" column of Table 130A-1 is blank. In the parameter column, the phrase "per lane (range)" in the signaling rate row is struck out for no apparent reason.

SuggestedRemedy

Fill in the missing column and correct the formatting error.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Same as comment #63.

Fill in blank columns with information from:
http://www.ieee802.org/3/cb/public/nov16/smith_3cb_02_1116_comment_30.pdf

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **266**   Page 16 of 21
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   11/9/2016 9:57:15 PM
SORT ORDER: Comment ID

Cl **130A**   *SC* **130A.3.1.4.1**   *P* **208**   *L* **48**   # 267

Healey, Adam   Broadcom Ltd.

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

PRBS13Q is a PAM4 test pattern and seems to be inappropriate for this interface. Furthermore, 94.3.12.5.2 pertains to the measurement of PAM4 signals. Note the similar issue with 130A.3.3.1.

SuggestedRemedy

Change the reference to 92.8.3.5 or a similar NRZ-based measurement procedure. Note that 92.8.3.5 specified the use of PRBS9 so not expection for the test pattern would likely be required in this case.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Replace the paragraph with the text below:
The linear fit pulse response is characterized using the procedure described in 92.8.3.5.1 with the exception that the measurement is performed at TP4H-D rather than TP2 and Np =8.

Cl **130**   *SC* **130.8**   *P* **148**   *L* **10**   # 271

Healey, Adam   Broadcom Ltd.

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

The interconnect characterstics are not defined in Annex 130B.

SuggestedRemedy

Change the reference to Annex 128C.

Response   *Response Status* **C**

ACCEPT.

Cl **128C**   *SC* **128C.4.3**   *P* **188**   *L* **2**   # 272

Healey, Adam   Broadcom Ltd.

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

Using Equation (128C-7), it appears the maximum insertion loss for 5GBASE-KR is allowed to be about 33.6 dB at 2.578125 GHz. This does not agree with a fitted attenuation limit of 13.4 dB at 2.578125 GHz and an insertion loss deviation limit of +/-2.8 dB at 2.578125 GHz. This implies the insertion loss should not exceed 16.2 dB at that frequency.

SuggestedRemedy

Revisit the insertion loss equation for 5GBASE-KR.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

Corrected equation 128C-7 was incorrect and was changed, and Figure 128C-3 was replotted.

See file
http://www.ieee802.org/3/cb/public/sep16/patra_3cb_01_0916_IL.pdf

See replot at
http://www.ieee802.org/3/cb/public/nov16/Fig%20128C-3%20-%20Insertion%20Loss.png

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Cl **128C**   *SC* **128C.4.3**   *P* **188**   *L* **13**   # 273

Healey, Adam   Broadcom Ltd.

Comment Type **TR**   *Comment Status* **D**

Equation (128C-7) states the range of the limit to be fmax, and in Table 128C-1, fmax is assigned a value of 7 GHz. However, Figure 128C-3 only plots the limit to about 2.25 GHz and it is unclear how the curve applies to 2.5GBASE-KX and 5GBASE-KR (compare to Figure 128C-2).

SuggestedRemedy

Replace the plot with one that illustrates the limit over the specified frequency range and annotate the plot so show how it applies to 2.5GBASE-KX and 5GBASE-KR respectively (including the "high confidence" regions").

Proposed Response   *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Creating new equation and plot for 5GBASE-KR.

Changed Figure 128C-3 for updated equation for 2.5GBASE-KX.

Implement the changes in file:
calbone_3cb_01_1109.pdf

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 **273**

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11/9/2016 9:57:15 PM

Cl **128C**   *SC* **128C.4.4**   *P* **188**   *L* **46**   # 274
Healey, Adam   Broadcom Ltd.

Comment Type   **TR**   *Comment Status* **A**
 Equations (128C-9) and (128C-10) are incorrect.

SuggestedRemedy
 Change "0.7^(-9)" to "0.7x10^(-9)" in both cases.

Response   *Response Status*   **C**
 ACCEPT.
 Exponent notation changed.

 [Editor's note: is there a missing 'f' at the end of equation 128C-9 ?
 Answer: yes, add the 'f' at the end of equation 128C-9.

 Check Equation 130C-9.]

Cl **128**   *SC* **128.7.1.10**   *P* **111**   *L* **2**   # 297
Donahue, Curtis   UNH-IOL

Comment Type   **TR**   *Comment Status* **A**
 128.7.1.10 Transmitter output waveform defines symbol periods and voltages for a square
 test pattern that is used for the "transmitter output waveform test". However, there aren't
 any electrical requirements involving these times and voltages. Does Clause 128 even
 need a transmitted output waveform test? It does not include equalization so is it
 necessary? CL70 1000BASE-KX also does not define an equalizer and is missing a
 subclause equivalent to 128.7.1.10.

SuggestedRemedy
 Either

 a) Remove 128.7.1.10 including associated text and diagrams.

 or

 b) Add electrical requirements involving the test pattern voltages, similar to those found in
 72.7.1.11.

Response   *Response Status*   **C**
 ACCEPT IN PRINCIPLE.

 Remove 128.7.1.10 including associated text and diagrams.

Cl **128B**   *SC* **128B.2.4**   *P* **181**   *L* **25**   # 301
Donahue, Curtis   UNH-IOL

Comment Type   **TR**   *Comment Status* **A**
 Since Clause 128 doesn't define equalization is this transmitter control necessary? It's only
 used to change equalizor values during the receiver interference tolerance test.

SuggestedRemedy
 Remove 128B.2.4

Response   *Response Status*   **C**
 ACCEPT.

Cl **128D**   *SC* **128D.2.3.2**   *P* **197**   *L* **19**   # 307
Donahue, Curtis   UNH-IOL

Comment Type   **TR**   *Comment Status* **A**
 This subclause is either missing parameters (mostly far-end) or has some additional
 unnecessary parameters defined. For example Equations 128D-6 and 218D-7 are nearly
 identical, the difference is the use of Ant vs Aft but both equations are labelled as Wnt.
 Since Aft is not defined my guess is that there shouldn't be any far-end parameters in this
 section.

SuggestedRemedy
 Either

 a) Remove Equation 128D-7 and any references to that equation.

 or

 b) Add in far-end parameters to these definitions and rename Wnt in Eq. 128D-7 to Wft.

Response   *Response Status*   **C**
 ACCEPT IN PRINCIPLE.

 Adopt suggestion a).

 (From calbone_3cb_01_0916.pdf):
 - change annex 128D according to document Calbone_3cb_04_0916.pdf)

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **307**   Page 18 of 21
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   11/9/2016 9:57:15 PM
SORT ORDER: Comment ID

Cl **130**   *SC* **130.7.1.7**   *P* **144**   *L* **31**   # 316
Donahue, Curtis   UNH-IOL

Comment Type **ER**   *Comment Status* **A**

The enabling/disabling of equalization in this paragraph is confusing. First it says "with no equalization and a run of at least eight consecutive ones." then says "equalization may be disabled completely during this testing." Should be clear and consistant.

SuggestedRemedy

Remove the last sentence of this paragraph. This will make it clear that equalization needs to be disabled to accurately measure the transition time, and it would be consistant with 10GBASE-KR as well.

Response   *Response Status* **C**

ACCEPT.

Cl **130**   *SC* **130.7.1.10**   *P* **145**   *L* **1**   # 317
Donahue, Curtis   UNH-IOL

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

130.7.1.10 Transmitter output waveform defines symbol periods and voltages for a square test pattern that is used for the "transmitter output waveform test". However, there aren't any electrical requirements involving these times and voltages.

SuggestedRemedy

Add electrical requirements involving the test pattern voltages, similar to those found in 72.7.1.11.

Response   *Response Status* **W**

ACCEPT IN PRINCIPLE.

In Table 130-4 add a new row above Common-mode voltage limits that says:
Pre-cursor ratio (Rpre) [column 1]
130.7.1.11 [column 2]
with a value of 1.25 +/- 0.05 [column 3]
[nothing in column 4]

See file
http://www.ieee802.org/3/cb/public/sep16/patra_3cb_01_0916_Tx_waveform.pdf

Also change text on page 145, line 25 to:
The transmitter output waveform test is based on the voltages v1
through v4, which shall be measured as shown in Figure 130–7 and described below. The Rpre requirements are shown in Table 130-4.

Cl **127**   *SC* **127.2.6.1.3**   *P* **74**   *L* **34**   # 338
Law, David   HPE

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

Figure 127–2 'Functional block diagram' shows the input to the 'WORD-TO-OCTETS' as tpd<3:0><7:0>, tp_en<3:0> and tp_er<3:0>, and the output as tpd<7:0>, tp_en, tp_er. Similarly Figure 127–4 'PCS Word Encode and Word-to-Octets state diagram' shows assignments such as tp_en <= tp_en<0>, tp_er <= tp_er<0> and tpd<7:0> <= tpd<0><7:0>.

It is confusing to use the same variable names as both the input and output of the 'WORD-TO-OCTETS' function with the only differentiation being that the input is an array, for example tp_en<3:0>, and the output is a bit, for example tp_en. This also looks odd within the stats diagram as you end up with assignments such as tp_en <= tp_en<0>. In particular this is because in other instances the name of the array is used to mean the entire array. As an example tx_code-group<9:0> is defined on page 75, line 7, yet in the state SPECIAL_GO (page 83, 10) there is the assignment tx_code-group <= tx_o_set without reference to the array width.

In addition the definition for tpd<x><7:0> states that 'x= 0, 1, 2, 3 for the four sets of 2.5GPII.'. That doesn't seem to match the use of tpd as an input to the 'WORD-TO-OCTETS' function in Figure 127–2, nor to the definition of the WENCODE function (page 78, line 6), where x has the value '3:0'.

I'm also not sure the definition for the input variables to the 'WORD-TO-OCTETS' function are correct. Take as an example tp_en<x> (page 74, line 38). The definition states '2.5GPII transmit data valid to the Word-to-Octets process. x= 0, 1, 2, 3 for the four sets of 2.5GPII.'

According to Figure 127–2 'Functional block diagram' the 2.5GPII is between the 'WORD-TO-OCTETS' block and the PMA. This isn't where this variable is used, instead it is used between the 'WORD ENCODE' block and the 'WORD-TO-OCTETS' block, and therefore this isn't '2.5GPII transmit data valid', it's the input to the Word-to-Octets process that 2.5GPII transmit data valid is derived from.

SuggestedRemedy

Suggest that since the connection between the 'WORD ENCODE' block and the 'WORD-TO-OCTETS' isn't defined as an interface, and is instead internal to the PCS Word Encode and Word-to-Octets state diagram, that:

[1] tp_en<3:0> be changed to be we_tp_en<3:0>
[2] tp_er<3:0> be changed to be we_tp_er<3:0>
[3] tpd<3:0><7:0> be changed to we_tpd<31:0>

[4] The assignments in state TX_XGMII be changed to:

{we_tp_en<3:0>,we_tp_er<3:0>,we_tpd<31:0>,wencode_state} <= WENCODE(TXC<3:0>,TXD<31:0>,wencode_state)

[5] The assignments in state TX_2.5GPII_0 be changed to:

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tp_en <= we_tp_en<0>
tp_er <= we_tp_er<0>
tpd<7:0> <= we_tpd<7:0>

[6] The assignments in state TX_2.5GPII_1 be changed to:

tp_en <= we_tp_en<1>
tp_er <= we_tp_er<1>
tpd<7:0> <= we_tpd<15:8>

[7] The assignments in state TX_2.5GPII_2 be changed to:

tp_en <= we_tp_en<2>
tp_er <= we_tp_er<2>
tpd<7:0> <= we_tpd<23:16>

[8] The assignments in state TX_2.5GPII_3 be changed to:

tp_en <= we_tp_en<3>
tp_er <= we_tp_er<3>
tpd<7:0> <= we_tpd<31:24>

[9] The definition for tpd<x><7:0> be changed to read:

we_tpd<31:0>
Transmit data output of the WORD ENCODE process.

[10] The definition of tp_en<x> be changed to read:

tp_en<3:0>
Transmit data valid output of the WORD ENCODE process.

[11] The definition of tp_er<x> be changed to read:

tp_er<3:0>
Transmit error output of the WORD ENCODE process.

[12] Figure 127–2 'Functional block diagram be updated as follows:

tpd<3:0><7:0> be changed to we_tpd<31:0>
tp_en<3:0> be changed to be we_tp_en<3:0>
tp_er<3:0> be changed to be we_tp_er<3:0>

[13] 127.2.4.3 'Word-to-Octets' is changed to read:

The Word-to-Octets process takes the output of the Word Encoder (we_tp_en<3:0>,
we_tp_er<3:0>, we_tpd<31:0>) and presents it one symbol at a time (tp_en, tp_er,
tpd<7:0>) to the PCS transmit process. we_tpd<7:0> is presented first and we_tpd<31:24>

is presented last.

The Word-to-Octets process shall be synchronized to the PCS transmit process such that
we_tpd<7:0> and we_tpd<23:16> are presented to the PCS transmit process which will
result in the corresponding ordered set to be output to the PMA when the variable tx_even
is TRUE and we_tpd<15:8> and we_tpd<31:24> when the variable tx_even is FALSE.

[14] A similar set of changes should be made to the receive path.

Response   *Response Status* **C**
ACCEPT IN PRINCIPLE.

Accept as is and also fix the receive path.

Suggest that since the connection between the 'WORD ENCODE' block and the 'WORD-
TO-OCTETS' isn't defined as an interface, and is instead internal to the Figure 127-4 PCS
Word Encode and Word-to-Octets state diagram, that:

[1] tp_en<3:0> be changed to be we_tp_en<3:0>
    [Editor's note: done]

[2] tp_er<3:0> be changed to be we_tp_er<3:0>
    [Editor's note: done]

[3] tpd<3:0><7:0> be changed to we_tpd<31:0>
    [Editor's note: done]

[4] The assignments in state TX_XGMII be changed to:

{we_tp_en<3:0>,we_tp_er<3:0>,we_tpd<31:0>,wencode_state} <=
WENCODE(TXC<3:0>,TXD<31:0>,wencode_state)
    [Editor's note: done]

[5] The assignments in state TX_2.5GPII_0 be changed to:

tp_en <= we_tp_en<0>
tp_er <= we_tp_er<0>
tpd<7:0> <= we_tpd<7:0>
    [Editor's note: done]

[6] The assignments in state TX_2.5GPII_1 be changed to:

tp_en <= we_tp_en<1>
tp_er <= we_tp_er<1>
tpd<7:0> <= we_tpd<15:8>
    [Editor's note: done]

[7] The assignments in state TX_2.5GPII_2 be changed to:

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tp_en <= we_tp_en<2>
tp_er <= we_tp_er<2>
tpd<7:0> <= we_tpd<23:16>
    [Editor's note: done]

[8] The assignments in state TX_2.5GPII_3 be changed to:

tp_en <= we_tp_en<3>
tp_er <= we_tp_er<3>
tpd<7:0> <= we_tpd<31:24>
    [Editor's note: done]

[9] The definition for tpd<x><7:0> be changed to read:

we_tpd<31:0>
Transmit data output of the WORD ENCODE process.

[10] The definition of tp_en<x> be changed to read:

tp_en<3:0>
Transmit data valid output of the WORD ENCODE process.

[11] The definition of tp_er<x> be changed to read:

tp_er<3:0>
Transmit error output of the WORD ENCODE process.

[12] Figure 127–2 'Functional block diagram be updated as follows:

tpd<3:0><7:0> be changed to we_tpd<31:0>
tp_en<3:0> be changed to be we_tp_en<3:0>
tp_er<3:0> be changed to be we_tp_er<3:0>

[13] 127.2.4.3 'Word-to-Octets' is changed to read:

The Word-to-Octets process takes the output of the Word Encoder (we_tp_en<3:0>,
we_tp_er<3:0>, we_tpd<31:0>) and presents it one symbol at a time (tp_en, tp_er,
tpd<7:0>) to the PCS transmit process. We_tpd<7:0> is presented first and
we_tpd<31:24> is presented last.

The Word-to-Octets process shall be synchronized to the PCS transmit process such that
we_tpd<7:0> and we_tpd<23:16> are presented to the PCS transmit process which will
result in the corresponding ordered set to be output to the PMA when the variable tx_even
is TRUE and we_tpd<15:8> and we_tpd<31:24> when the variable tx_even is FALSE.

[14] A similar set of changes should be made to the receive path.

Cl **127**	*SC* **127.2.4**	*P* **63**	*L*	#	356

Kim, Yong   Broadcom

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

XGMII is the adopted interface for 2.5G, and the baseline for the 2.5G Backplane signalling
is compatible with 1000BASE-KX (and possibly propriatary SGMII in broad use) running at
2.5X speed-up. It is highly desireable to make features that were not present at 1G, but
present at 2.5G due to adoption of XGMII (10G) runing at 1/4 speed, to be optional.

SuggestedRemedy

A bit broad reaching changes.

Requres ordered set transmit for link status to be optional.

127.2.5.6 Sequence /Q/ clause need to indicate optional implementation;

127.2.6.2.2 Transmit needs to say "if the optional link status signalling is enabled…"

And Annex 127B should be expanded to make this clear. Please refer to the presentation
WRT to this comment, to be submitted for Sept 2016 Interim.

Response   *Response Status* **C**

ACCEPT IN PRINCIPLE.

[Editor's note: This is a Technical but not Required comment.

Need help understanding the specific changes needed.]

See Kim_3cb_01_0916.pdf for detailed changes.

Vote to Accept in Principle
approve: 4
oppose: 1
abstain: 2
Approved.

[Editor's note: file located at: http://www.ieee802.org/3/cb/public/sep16/index.html]

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