

Please configure project comments

CI **FM** SC **FM** P **13** L **49** # **17**  
 Anslow, Pete Ciena

Comment Type **E** Comment Status **D**

In "adds Clause through Clause 130, Annex 127A, Annex 127B, Annex 128A, Annex 128B, Annex 128C, and Annex 130A."  
 The first "Clause" should be "Clause 127" and "Annex 127B, " should be deleted.

*SuggestedRemedy*

Change the first "Clause" to "Clause 127" and delete "Annex 127B, "

Proposed Response Response Status **W**

PROPOSED ACCEPT.

[Editor note: same as comment #4]

CI **31B** SC **31B.4.6** P **160** L **21** # **8**  
 Anslow, Pete Ciena

Comment Type **E** Comment Status **D**

In "Insert a new row for \*TIM4aa before the row for \*TIM4a ..." there should not be a "\*" before TIM4aa or TIM4a

*SuggestedRemedy*

Change "for \*TIM4aa before the row for \*TIM4a" to "for TIM4aa before the row for TIM4a"

Proposed Response Response Status **W**

PROPOSED ACCEPT.

CI **45** SC **45.2.1.89.6** P **36** L **15** # **18**  
 Anslow, Pete Ciena

Comment Type **E** Comment Status **D**

The text changes in 45.2.1.89.6 are not shown as changes with respect to the base standard.

*SuggestedRemedy*

Change the editing instruction to: "Change the title and text of 45.2.1.89.6 as follows:"  
 Change the text to show changes with respect to the text of the base standard which is:  
 "The PMD signal detect function is optional see 70.6.4. The 1000BASE-X PCS requires signal detect to be one before synchronization can occur. If the signal detect function is not implemented this bit is set to one."

Proposed Response Response Status **W**

PROPOSED ACCEPT.

[Editor note: his wording is much better. We struggle with this several times. - Dan]

CI **45** SC **45.2.3.14.3** P **40** L **6** # **19**  
 Anslow, Pete Ciena

Comment Type **E** Comment Status **D**

The editing instruction refers to only the first sentence of 45.2.3.14.3, but the complete text is shown.

The first sentence of 45.2.3.14.3 has been modified by IEEE Std 802.3bz-2016 "113.3.6.2.2" should be in Forest green

*SuggestedRemedy*

Remove the text after the first sentence.  
 Change the editing instruction to include IEEE Std 802.3bz-2016  
 Change:

"... and defined by the counter lfer\_count in 55.3.6.2 for 10GBASE-T and in 113.3.6.2.2 for 25GBASE-T and 40GBASE-T." to:  
 "... and defined by counter lfer\_count in 126.3.6.2 in 2.5GBASE-T and 5GBASE-T, 55.3.6.2 for 10GBASE-T, and in 113.3.6.2.2 for 25GBASE-T and 40GBASE-T."  
 Note, the base text shown in the published version of IEEE Std 802.3bz-2016 does not correctly reflect the standard as modified by IEEE Std 802.3bz-2016. The text above is the correct version.

Apply character tag External to "113.3.6.2.2"

Proposed Response Response Status **W**

PROPOSED ACCEPT.  
 Remove the text after the first sentence.

Change the editing instruction to include IEEE Std 802.3bz-2016

Change:

"... and defined by the counter lfer\_count in 55.3.6.2 for 10GBASE-T and in 113.3.6.2.2 for 25GBASE-T and 40GBASE-T." to:  
 "... and defined by counter lfer\_count in 126.3.6.2 in 2.5GBASE-T and 5GBASE-T, 55.3.6.2 for 10GBASE-T, and in 113.3.6.2.2 for 25GBASE-T and 40GBASE-T."

Note, the base text shown in the published version of IEEE Std 802.3bz-2016 does not correctly reflect the standard as modified by IEEE Std 802.3bz-2016. The text above is the correct version.

Apply character tag External to "113.3.6.2.2"

Please configure project comments

Cl 45 SC 45.2.3.14.4 P 40 L 22 # 20  
 Anslow, Pete Ciena

Comment Type E Comment Status D

The first sentence of 45.2.3.14.4 has been modified by IEEE Std 802.3bz-2016 "113.3.6.2" should be in Forest green

SuggestedRemedy

Change the editing instruction to include IEEE Std 802.3bz-2016  
 Change:  
 "... and defined by the counter errored\_block\_count in 55.3.6.2 for 10GBASE-T and in 113.3.6.2 for 25GBASE-T and 40GBASE-T." to:  
 "... and defined by counter errored\_block\_count in 126.3.6.2 in 2.5GBASE-T and 5GBASE-T, 55.3.6.2 for 10GBASE-T and in 113.3.6.2 for 25GBASE-T and 40GBASE-T."  
 Apply character tag External to "113.3.6.2"

Proposed Response Response Status W  
 PROPOSED ACCEPT.

[Editor note: this comment has not been done yet. - Dan]

Cl 69A SC 69A.2 P 161 L 30 # 9  
 Anslow, Pete Ciena

Comment Type E Comment Status D

There is no need to show an external reference as green in an editing instruction.

SuggestedRemedy

Change "Figure 69A-1." to black

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 69A SC 69A.2 P 161 L 30 # 10  
 Anslow, Pete Ciena

Comment Type E Comment Status D

As Figure 69A-1 is the last figure in Annex 69A, a figure inserted after it should be Figure 69A-2

SuggestedRemedy

Change "Figure 59A-1a" to "Figure 69A-2" in the editing instruction and the figure number.

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 69A SC 69A.2.1 P 162 L 1 # 11  
 Anslow, Pete Ciena

Comment Type E Comment Status D

In the editing instruction, change "the 69A.2.1" to "69A.2.1"

SuggestedRemedy

In the editing instruction, change "the 69A.2.1" to "69A.2.1"

Proposed Response Response Status W  
 PROPOSED ACCEPT.

[Editor note: remove the word "the" ahead of "69A.2.1". - Dan]

Cl 69A SC 69A.2.1 P 162 L 36 # 12  
 Anslow, Pete Ciena

Comment Type E Comment Status D

Space missing in editing instruction

SuggestedRemedy

Change "69A.2.1as" to "69A.2.1 as"

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Cl 69A SC 69A.2.1 P 162 L 40 # 13  
 Anslow, Pete Ciena

Comment Type E Comment Status D

"requirements or 130.7.1.1" should be "requirements of 130.7.1.1" and "130.7.1.1" should be a cross-reference

SuggestedRemedy

Change "requirements or 130.7.1.1" to "requirements of 130.7.1.1" and make "130.7.1.1" a cross-reference

Proposed Response Response Status W  
 PROPOSED ACCEPT.

Please configure project comments

CI 69A SC 69A.3 P 163 L 18 # 14  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D  
 "130.6.2" should be a cross-reference  
 SuggestedRemedy  
 make "130.6.2" a cross-reference  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 73 SC 73.1 P 51 L 27 # 21  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D  
 In the added text in Figure 73-1, "2.5 G/b" should be "2.5 Gb/s"  
 SuggestedRemedy  
 Change "2.5 G/b" to "2.5 Gb/s"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

CI 73 SC 73.2 P 51 L 39 # 22  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D  
 The heading shown as "73.2" should be "73.3"  
 SuggestedRemedy  
 Change the heading number to 73.3  
 Proposed Response Response Status W  
 PROPOSED ACCEPT IN PRINCIPLE.  
 Editor note: Is the editing instruction in the right place if the subheader is changed to 73.3?  
 Should the editing instruction be placed above the "73.2 Functional specifications"  
 header? - Dan]

CI 125 SC 125.2.2 P 61 L 53 # 4  
 Dudek, Mike Cavium  
 Comment Type E Comment Status D  
 Missing Clause #  
 SuggestedRemedy  
 Add "127" as the missing clause #  
 Also on page 62 line 5  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

[Editor note: Jim, make this change. I checked it against D2.1, it is not missing there. - Dan  
 Update: need change notation?]

CI 125 SC 125.2.3 P 62 L 5 # 23  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D  
 "in Clause and" should be "in Clause 127 and"  
 SuggestedRemedy  
 Change "in Clause and" to "in Clause 127 and"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.

[Editor note: same as comment #4. Shouldn't the change show as forest green? - Dan]

CI 125 SC 125.3 P 62 L 26 # 24  
 Anslow, Pete Ciena  
 Comment Type E Comment Status D  
 Spurious "/" at the end of the editing instruction.  
 The inserted rows in Table 125-3 should be shown in underline font.  
 As there are numbers above 10 000 in the Maximum (bit time) column, 1024 and 3540  
 should have a space as a thousands separator as per the style manual.  
 SuggestedRemedy  
 Delete the "/" at the end of the editing instruction.  
 Show the inserted rows in Table 125-3 in underline font.  
 Change "1024" to 1 024" and change "3540" to "3 540"  
 Proposed Response Response Status W  
 PROPOSED ACCEPT.  
 [editors note: which lines are inserted?]

Please configure project comments

CI 127 SC 127.2.6.1.4 P 81 L 19 # 1

Maguire, Valerie

Siemon

Comment Type E Comment Status D

It appears that the link to 36.2.4.4 at the end of line 19 is formatted incorrectly and may be broken. (My apologies if this comment is out of scope. If so, kindly advise and I will resubmit against the Sponsor ballot if the link is indeed a problem.)

SuggestedRemedy

Verify that the link to 36.2.4.4 at the end of line 19 is formatted and working correctly.

Proposed Response Response Status W

PROPOSED ACCEPT.

CI 127 SC 127.2.2 P 65 L 45 # 5

Dudek, Mike

Cavium

Comment Type T Comment Status X

I don't see a scrambler in the PCS transmit. Having unscrambled data input to 8B10B encoding has in other standards created EMI and adaptive equalizer convergence problems.

SuggestedRemedy

If a scrambler isn't included consider adding one.

Proposed Response Response Status W

[Editor: this will require extensive research by the protocol contributors. A major comment this late in the cycle.  
- Dan]

CI 127 SC 127.2.6.2.1 P 85 L 19 # 27

Law, David

HPE

Comment Type T Comment Status D

In respect to my comment #362 submitted against D2.0, I note that a TX\_XGMII\_HI state along with states TX\_2.5GP11\_4 through TX\_2.5GP11\_7 have been added. I also note that in the TX\_XGMII state the assignments 'xgmii\_txc<3:0> <= xgmii\_txc\_lo<3:0>' and 'xgmii\_txd<3:0> <= xgmii\_txd\_lo<3:0>' have been added. The definition of the xgmii\_txc<3:0> and xgmii\_txd<31:0> variables however still state that they are latched on the rising or falling edge of TX\_CLK and there is no definition of the xgmii\_txc\_lo and xgmii\_txd\_lo variables.

Assuming that xgmii\_txc\_lo and xgmii\_txd\_lo are TXC and TXC latched on the falling edge of TX\_CLK, that xgmii\_txc and xgmii\_txd are TXC and TXC latched on the rising edge of TX\_CLK, and that the TX\_XGMII state is entered on the rising edge of TX\_CLK, the assignments 'xgmii\_txc<3:0> <= xgmii\_txc\_lo<3:0>' and 'xgmii\_txd<3:0> <= xgmii\_txd\_lo<3:0>' would appear to overwrite the TXC and TXC values just latched on the rising edge. As an aside I would note that the XGMII data bus is 32 bits hence I think the assignment 'xgmii\_txd<3:0> <= xgmii\_txd\_lo<3:0>' should read 'xgmii\_txd<31:0> <= xgmii\_txd\_lo<31:0>'.

It would seem clearer to define xgmii\_txc\_lo and xgmii\_txd\_lo as TXC and TXC latched on the falling edge of TX\_CLK, and xgmii\_txc\_hi and xgmii\_txd\_hi as TXC and TXC latched on the rising edge of TX\_CLK, remove the use of xgmii\_txc and xgmii\_txd, and process xgmii\_txc\_lo and xgmii\_txd\_lo as well as xgmii\_txc\_hi and xgmii\_txd\_hi directly in the WENCODE function. As suggest that the state TX\_XGMII be renamed TX\_XGMII\_HI to complement the new TX\_XGMII\_LO state.

SuggestedRemedy

Suggest that:

- [1] The definition for xgmii\_txc<3:0> and xgmii\_txd<31:0> be deleted.
- [2] A new definition for xgmii\_txc\_lo<3:0> be added that reads 'The value of TXC<3:0> latched by the falling edge of TX\_CLK.'
- [3] A new definition for xgmii\_txc\_hi<3:0> be added that reads 'The value of TXC<3:0> latched by the rising edge of TX\_CLK.'
- [4] A new definition for xgmii\_txd\_lo<31:0> be added that reads 'The value of TXD<31:0> latched by the falling edge of TX\_CLK.'
- [5] A new definition for xgmii\_txd\_hi<31:0> be added that reads 'The value of TXD<31:0> latched by the rising edge of TX\_CLK.'
- [6] The assignments 'xgmii\_txc<3:0> <= xgmii\_txc\_lo<3:0>' and 'xgmii\_txd<3:0> <= xgmii\_txd\_lo<3:0>' in the TX\_XGMII state be deleted.
- [7] The variable assignment to the WENCODE function in the TX\_XGMII state be change to WENCODE(xgmii\_txc\_lo<3:0>,xgmii\_txd\_lo<31:0>,wencode\_state).
- [8] The variable assignment to the WENCODE function in the TX\_XGMII\_HI state be change to WENCODE(xgmii\_txc\_hi<3:0>,xgmii\_txd\_hi<31:0>,wencode\_state).

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[9] In the WENCODE function definition the text '... is the xgmii\_txc<3:0>, xgmii\_txd<31:0>, and ...' be changed to read '... is xgmii\_txc\_lo<3:0> or xgmii\_txc\_lo<3:0>, xgmii\_txd\_lo<31:0> or xgmii\_txd\_hi<31:0>, and ...'.

[10] Rename the state TX\_XGMII to be TX\_XGMII\_HI

*Proposed Response*                      *Response Status*    **W**  
 PROPOSED ACCEPT.

Prior comment that was "accepted in principal" that did NOT get completely implemented.

[Editor note: this came in late Jim, please implement. - Dan]

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*Cl* **128**      *SC* **128.7.1**                      *P* **110**      *L* **26**      # **25**  
 Anslow, Pete                                      Ciena

*Comment Type*    **E**                      *Comment Status*    **D**

1.2.6 in the base standard says that "trailing zeros having no significance"

*SuggestedRemedy*

Remove any trailing zeros from the draft.  
 In Table 128-4 change "0.20" to "0.2"  
 In Table 130-6 change "1.0" to "1"  
 In Table 128A-1 change "0.20" to "0.2"

*Proposed Response*                      *Response Status*    **W**  
 PROPOSED ACCEPT.

[Editor note: scan entire draft for other instances. - Dan]

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*Cl* **128**      *SC* **128.7.1.5**                      *P* **112**      *L* **44**      # **6**  
 Dudek, Mike                                      Cavium

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

Figure 128-4 does not match the specifications in equations 128-3 and 128-4. (The figure is the same as Figure 128-5)

*SuggestedRemedy*

Correct the figure.

*Proposed Response*                      *Response Status*    **W**  
 PROPOSED ACCEPT.

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*Cl* **128A**      *SC* **128A.1**                      *P* **167**      *L* **14**      # **15**  
 Anslow, Pete                                      Ciena

*Comment Type*    **E**                      *Comment Status*    **D**

"Annex 128C" should be a cross-reference (3 instances)

*SuggestedRemedy*

Make "Annex 128C" a cross-reference (3 instances)

*Proposed Response*                      *Response Status*    **W**  
 PROPOSED ACCEPT.

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*Cl* **128A**      *SC* **128A.3.1.7**                      *P* **172**      *L* **33**      # **7**  
 Dudek, Mike                                      Cavium

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

It seems unlikely that an SNDR value of only 5.6dB will provide a 1e-12 error rate. (SNDR is expected to be un-equalizable noise and a 5.6dB SNR will not provide 1e-12 error rate). The effect of jitter and reflections from a worst case Rx (versus the good test load) will further degrade the signal beyond this value.

*SuggestedRemedy*

Determine a reasonable value. Clause 92 uses 26dB which may be higher than necessary.

Make the change on page 175 line 8 as well, and change the SDNR for the drive interference in table 128A-8.

*Proposed Response*                      *Response Status*    **W**

[Editor: this will require extensive research by Anthony & Rich Mellitz. A real show stopper. - Dan]

Please configure project comments

Cl 128A SC 128A.3.2.2 P 176 L 15 # 3  
Dudek, Mike Cavium

Comment Type E Comment Status D

Tables 128A-3, 128A-8, 130A-3 and 130A-8 contain a parameter SDNR that is not defined. From context this should be SNDR

SuggestedRemedy

Change to SNDR in 4 places.

Proposed Response Response Status W

PROPOSED ACCEPT.

[Editor note: fix the typo: "SDNR" s/b "SNDR"; check all instances. - Dan.

Update: still need to fix:

Table 130A-3

Table 130A-8

]

Cl 130A SC 130A.3.1 P 210 L 33 # 2  
Dudek, Mike Cavium

Comment Type T Comment Status D

An SNDR ratio of 16dB appears marginal to provide a BER of 1e-12 when the additional degradations created by jitter, receiver non ideality and reflections between the host and the receiver are considered.

SuggestedRemedy

Consider whether a higher value should be used.

Proposed Response Response Status W

[Editor: this will require extensive research by Anthony & Rich Mellitz. - Dan]

Cl 128C SC 128C.3 P 202 L 2 # 16  
Anslow, Pete Ciena

Comment Type E Comment Status D

The PICS should reflect the exact title of the Annex.

SuggestedRemedy

On line 2, line 37, line 36, and line 48:

Change "Annex 128C, Test fixtures" to "Annex 128C, Test Fixtures for 2.5 Gb/s and 5 Gb/s Storage Enclosure Interfaces"

Proposed Response Response Status W

PROPOSED ACCEPT.

Cl 130 SC 130.7.2.1 P 151 L 14 # 26  
Anslow, Pete Ciena

Comment Type E Comment Status D

In Table 130-6 footnote a, "Equation 69A-5" should be Forest green

SuggestedRemedy

Apply character tag External to "Equation 69A-5"

Proposed Response Response Status W

PROPOSED ACCEPT.