Cl **1** *SC* **1** *P* **17** *L* **50** # 94

Luo, Yuanqiu Futurewei

Comment Type **ER** *Comment Status* **D**

BiDi introduction is in Cl.157. New definitions have been added. This editor note can be removed.

SuggestedRemedy

Remove Editor's Note on Page 17

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.6** *P* **24** *L* **6** # 95

Luo, Yuanqiu Futurewei

Comment Type **ER** *Comment Status* **D**

Code point 1100100 is not used by P802.3ct. 802.3ct D1.2 Page 26 uses code point 1001110 for 100GBASE-ZR PMA/PMD.

SuggestedRemedy

Remove Editor's Note on Page 26

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **45** *SC* **45.2.1.27a.2** *P* **29** *L* **14** # 96

Luo, Yuanqiu Futurewei

Comment Type **ER** *Comment Status* **D**

Extra empty line before the text

SuggestedRemedy

Remove the extra empty line

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **56** *SC* **56.1.1** *P* **34** *L* **3** # 97

Luo, Yuanqiu Futurewei

Comment Type **ER** *Comment Status* **D**

Changes have been reviewed and confirmed. Editor's Note can be removed.

SuggestedRemedy

Remove Editor's Note

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **157** *SC* **157.1** *P* **41** *L* **38** # 98

Luo, Yuanqiu Futurewei

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

FEC is not required for 10G BiDi. FEC is mandatory for 25G BiDi.

SuggestedRemedy

In Figure 157-1, remove FEC block from 10G BiDi PHY. Remove Note 1 from the 25G PHY FEC block. Remove Note 1 from the figure.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **158** *SC* **158.6, Table 158-6** *P* **52** *L* **1** # 110

Nering, Ray Cisco

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

Align 10GBASE-BR40-D/U transmit characteristics with industry defacto standard already on the market per Nering_3cp_1_2001.pdf presented in Geneva Jan 2020 Table 158-6

Description	
Averager Launch Power (Max)	-0.6 dBm
Average Launch Power (Min)	-6.6 dBm
Launch Power (Min) OMA minus TPD	-4.6 dBm
OMA (Min)	-3.6 dBm
Tx and Dispersion Penalty	3 dB
Average Launch Power of Off Tx	-30 dBm
Extinction ratio	3 dB

SuggestedRemedy

As described in Nering_3cp_1_2001.pdf presented in Geneva Jan 2020

Description	
Averager Launch Power (Max)	5 dBm
Average Launch Power (Min)	-2.7 dBm
Launch Power (Min) OMA minus TPD	-0.5 dBm
OMA (Min)	0.3 dBm
Tx and Dispersion Penalty	2.6 dB
Average Launch Power of Off Tx	-30 dBm
Extinction ratio	5.5 dB

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Group this with Comment #78

Cl **158** *SC* **6.1** *P* **52** *L* **13** # 78

Effenberger, Frank Futurewei Technologies

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

The Tx levels for BR10 are good. BR20 should be 8.8 dB higher (except for the max power). Then BR40 should be 7 dB lower than BR20 (+3-10). THen BR40+ should be 5 dB higher than BR40

SuggestedRemedy

Quantity BR10 BR20 BR40 BR40+
Av power max +0.5 +5.6 -0.4 +4.6
Av power min -8.2 +0.6 -6.4 -1.4
OMA - TDP min -6.2 +2.6 -4.4 +0.6
OMA min -5.2 +3.6 -3.4 +1.6

Note: BR10 and BR40+ are correct. BR20 and BR40 are a little off.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Note: In this comment clause # should be 158

Cl **158** *SC* **6.1** *P* **52** *L* **24** # 79

Effenberger, Frank Futurewei Technologies

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

The RIN line is repeated

SuggestedRemedy

Delete the first line, since it doesn't have the note.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **158** *SC* **158.6, Table 158–7** *P* **53** *L* **15** # 111

Nering, Ray Cisco

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

Align 10GBASE-BR40-D/U receive characteristics with industry defacto standard already on the market per Nering_3cp_1_2001.pdf presented in Geneva Jan 2020 in

Table 158-7

Description
Average Rx Power (Max) -5.6 dBm
Average Rx Power (Min) -24.4 dBm
Max Rx Power (for damage) 4 dBm
Rx Sensitivity (max) in OMA -22.6 dBm
Receiver Reflectance -26 dB
Stressed Rx Sensitivity (Max in OMA) -20.3 dBm

SuggestedRemedy

As described in Nering_3cp_1_2001.pdf presented in Geneva Jan 2020

Description
Average Rx Power (Max) -9 dBm
Average Rx Power (Min) -21.2 dBm
Max Rx Power (for damage) 4 dBm
Rx Sensitivity (max) in OMA -19 dBm
Receiver Reflectance -26 dB
Stressed Rx Sensitivity (Max in OMA) -16.8 dBm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Group this with Comment #78, making sure the same principles are applied

Cl **158** *SC* **6.2** *P* **53** *L* **18** # 82

Effenberger, Frank Futurewei Technologies

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

Av power max and damage need adjustment to track Tx changes.

SuggestedRemedy

BR10 BR20 BR40 BR40+
Av power max 0.5 5.6 -5.4 -5.4
(for damage) 4.0 6.0 -4.4 -4.4
Note: BR10 values are correct. All the others are adjusted slightly.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **158** *SC* **6.3** *P* **54** *L* **12** # 83

Effenberger, Frank Futurewei Technologies

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

The allocation for penalties doesn't match what is specified in the Tx table (3.2 versus 3.0). And then the power budget needs to be adjusted.

SuggestedRemedy

For BR20, 40, and 40+, make the power budget to be 18, 21, and 26.
Make the allocation for penalties be 3.0 for all three.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **158** *SC* **8** *P* **54** *L* **40** # 80

Effenberger, Frank Futurewei Technologies

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

THere is a stray (maximum) in the table

SuggestedRemedy

For the BR40 entry for dispersion minimum, delete the (maximum) in the table.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **158** *SC* **158.12** *P* **58** *L* **21** # 99

Luo, Yuanqiu Futurewei

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

10G BiDi PICS forms are empty

SuggestedRemedy

Fill the PICS forms in Cl. 158.12

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See March meeting contribution

Cl **159** *SC* **6** *P* **66** *L* **17** # 84

Effenberger, Frank Futurewei Technologies

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

Remove red text, as it refers to a table that we agreed to get rid of

SuggestedRemedy

Remove red text

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **159** *SC* **159.6** *P* **66** *L* **17** # 100

Luo, Yuanqiu Futurewei

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

Sentence "The 25GBASE-BR40 PMD interoperates with the 25GBASE-BR10 PMD provided that the channel
requirements defined in 159.11 are met." doesn't make sense, as 25GBASE-BR10 and BR40 use different wavelengths.

SuggestedRemedy

Remove this sentence

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **159** *SC* **159.6.1** *P* **66** *L* **51** # 89

Palkert, Tom Molex

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

Average launch power (max) for 25GBASE-BR40 in Table 159-6 should match 25GBASE-ER

SuggestedRemedy

Change from +3dBm to +6dBm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Group this with #90, #91, they are about reusing 25GBASE-ER

Cl **159** *SC* **159.6.3** *P* **68** *L* **14** # 90

Palkert, Tom Molex

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

Damage Threshold in Table 159-7 for 25GBASE-BR40 should match 25GBASE-ER

SuggestedRemedy

Change from -1dBm to -3dBm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Group this with #89, #91, they are about reusing 25GBASE-ER

Cl **159** *SC* **159.6.3** *P* **68** *L* **15** # 91

Palkert, Tom Molex

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

Average receive power (max) for 25GBASE-BR40 in Table 159-7 should match 25GBASE-ER

SuggestedRemedy

Change from -2dBm to -4dBm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Group this with #90, #89, they are about reusing 25GBASE-ER

Cl **159** *SC* **6.3** *P* **69** *L* **9** # 85

Effenberger, Frank Futurewei Technologies

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

THe allocation for penalties doesn't match the TDP specified.

SuggestedRemedy

Change all the allocation for penalties to be 2.7, and then adjust the power budgets to be 9.0, 17.7, 20.7, 25.7, respectively.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Check the proposed numbers with corresponding PMD tables

Cl **159** *SC* **159.11** *P* **71** *L* **49** # 101

Luo, Yuanqiu Futurewei

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

Interop between 25GGBASE-BRx doesn't make sense as BR10 and BR20/40/40+ are in different wavelengths

SuggestedRemedy

Remove subclause 159.11

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **159** *SC* **159.12** *P* **73** *L* **21** # 102

Luo, Yuanqiu Futurewei

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

25G BiDi PICS forms are empty

SuggestedRemedy

Fill the PICS forms in Cl.159.12

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See March meeting contribution

Cl **160** *SC* **6.1** *P* **81** *L* **22** # 81

Effenberger, Frank Futurewei Technologies

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

Editor's note is no longer true

SuggestedRemedy

Remove editor's note

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **160** *SC* **160.6.2** *P* **82** *L* **38** # 92

Palkert, Tom Molex

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

Damage Threshold for 50GBASE-BR40 in Table 160-7 should match 50GBASE-ER

SuggestedRemedy

Change from +2.6dBm to -2.4dBm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Group this with #93, they are about maintaining consistency with 50GBASE-ER

Cl **160** *SC* **160.6.2** *P* **82** *L* **40** # 112

Wang, Ruoxu Huawei Technologies

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

During the merging from Table 160-8/160-9 in D1.1 to Table 160-7 by our editor's hard work, the contraditions of the "Damage threshold" (eg.2.63dBm vs -2.37dBm) and "Average receive power (max)" (eg.1.63dBm vs-3.37dBm) in D1.1 are changed to same numbers in D1.2, the new specs are consistent with the original 50GBASE-BRx-D receive characteristics (eg. 2.6dBm), and abandoned the 50GBASE-BRx-U receive characteristics. However, the 50GBASE-BR40 is based on avalanche photodiode (APD) receiver,which is the same solution as 50GBASE-ER. As we all know, the APD is fragile at strong optical input power, the damage threshold and average receive power (max) should be carefully designed to protect the APD based receiver. This is why 802.3cn 50GBASE-ER/cp.D1.1 50GBASE-BRx-U receive characteristics using -2.4dBm damage threshold, and -3.4dBm Average receive power (max), which are consistent with the 25G APD practical capability. Therefore, the "Damage threshold" and "Average receive power (max)" should keep same with D1.1 50GBASE-BRx-U receive characteristics: -2.4 dBm Damage threshold for 50GBASE-BR40, and -3.4dBm Average receive power (max) for 50GBASE-BR40.

SuggestedRemedy

Table 160-7, line "Average receive power (max)" , row " 50GBASE-BR40 ", change from 1.6dBm to -3.4dBm;
Table 160-7, line "Damage threshold" , row " 50GBASE-BR40 ", change from 2.6dBm to -2.4dBm.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Group this with #93, they are about maintaining consistency with 50GBASE-ER

Cl **160** *SC* **160.6.2** *P* **82** *L* **40** # 93

Palkert, Tom Molex

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

Average receive power (max) for 50GBASE-BR40 in Table 160-7 should match 50GBASE-ER

SuggestedRemedy

Change from +1.6dBm to -3.4dBm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Group this with #113, they are about maintaining consistency with 50GBASE-ER

Cl **160** *SC* **6.2** *P* **83** *L* **20** # 86

Effenberger, Frank Futurewei Technologies

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

SECQ is missing for BR20.

SuggestedRemedy

Suggest adding BR20 into the same category as BR40 and BR40+.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **160** *SC* **160.6.2** *P* **83** *L* **20** # 104

Luo, Yuanqiu Futurewei

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

Note C of Table 160-7 has @@@ value. 50GBASE-BR10 SECQ value in Note C doesn't match the SECQ in Table 160-7.

SuggestedRemedy

Change Note C into "Receiver sensitivity (OMAouter) (max) is informative and is defined for a transmitter with a value of SECQ up to 3.2 dB for 50GBASE-BRx."

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **160** *SC* **6.3** *P* **83** *L* **38** # 87

Effenberger, Frank Futurewei Technologies

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

Notes b and c are no longer true.

SuggestedRemedy

Remove notes b and c, and then change note d to note b.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **160** *SC* **160.6.3** *P* **83** *L* **45** # 105

Luo, Yuanqiu Futurewei

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

Note b of Table 160-8 has @@@ value. In Note c, 1304.5 nm is not 50GBASE-BR40 wavelength

SuggestedRemedy

Merge Notes a, b, c of Table 160-8 into one note as "The channel insertion loss is calculated using the maximum distance specified in Table 160–5 and fiber attenuation of 0.5 dB/km plus an allocation for connection and splice loss given in 160.10.2.1."

If fiber attenuation for BR10 is different from BR20/40/40+, consider adding the new value after 0.5dB/km

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **160** *SC* **160.10.1** *P* **85** *L* **14** # 113

Wang, Ruoxu Huawei Technologies

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

Table 160–10—Optical fiber and cable characteristics is lack of some key specs, such as the channel loss (min/max) at different nominal wavelength and transmission range of 50GBASE-BR X. The table needs to be modified as Table 159-10.
The 50GBASE-BR40 is based on avalanche photodiode (APD) receiver. As we all know, the APD is fragile to strong optical power, the damage threshold and average receive power (max) should be carefully designed to protect the APD based receiver.
Thus the channel insertion loss (min) should be 10dB in 40km cases, to protect the 50GBASE-BR40 APD receiver. It also maintain consistency with 802.3cn 50GBASE-ER.

SuggestedRemedy

Table 160-10 should be modified as Table 159-10.
The channel insersion loss should be 10dB in 40km cases. And add a footnote: Channel insertion loss (min) may be implemented with an optical attenuator.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Group this with Comment #93, they are about maintaining consistency with 50GBASE-ER

Cl **160** *SC* **160.10.1** *P* **85** *L* **18** # 106

Luo, Yuanqiu Futurewei

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

Table 160-10 talks about 1310nm. This wavelength is not used in BiDi spec.

SuggestedRemedy

Update Table 160-10 with BiDi wavelengths 1270nm, 1330nm, 1314nm, 1289nm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **160** *SC* **10.2.1** *P* **85** *L* **38** # 88

Effenberger, Frank Futurewei Technologies

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

The sentence about BR20 is not really true: 15dB was jsut a made up number.

SuggestedRemedy

Delete the sentence that begins, "The maximum link distance for 50GBASE-BR20...". The other sentences are still valid, so they can stand.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **160** *SC* **160.10.2.1** *P* **85** *L* **39** # 107

Luo, Yuanqiu Futurewei

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

BR20 value is still @@@

SuggestedRemedy

Decide a value for BR20 and fill it in 160.10.2.1

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **160** *SC* **10.2** *P* **86** *L* **8** # 77

Effenberger, Frank Futurewei Technologies

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

Replace the red text for BR20 with the average value of BR10 and BR40.

SuggestedRemedy

Insert the following values for BR20 reflectance is:
-22
-29
-34
-37
-39
-40

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **160** *SC* **160.10.2.2** *P* **86** *L* **8** # 108

Luo, Yuanqiu Futurewei

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

BR20 values in Table 160-11 are all filled as "between BR10 and BR40"

SuggestedRemedy

Decide values for BR20 and fill them in Table 160-11

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Cl **160** *SC* **160.11** *P* **87** *L* **22** # 109

Luo, Yuanqiu Futurewei

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

PICS forms in 160.11 are all empty

SuggestedRemedy

Fill the PICS forms in Cl.160.11

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
See March meeting contribution