

: 802.3dk D2.2 Bidirectional 100Gb/s Optical Access PHYs 2nd Working Group recirculation ballot comment

CI **FM** SC **FM** P1 L28 # 11
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **X**
 D2.1
 SuggestedRemedy
 D2.2 (to be D2.3)
 Proposed Response Response Status **O**

CI **00** SC **0** P0 L0 # 10
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **X**
 pdf metadata is at default
 SuggestedRemedy
 Populate with correct data
 Proposed Response Response Status **O**

CI **30** SC **30.5.1.1.2** P18 L18 # 14
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **X**
 This section
 SuggestedRemedy
 Should be single spaced
 Proposed Response Response Status **O**

CI **45** SC **45.2.1.6** P19 L22 # 15
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **X**
 Entries should be in descending order
 SuggestedRemedy
 The three rows 1 0 0 1 x x x x, 1 0 0 0 1 x x x, 1 0 0 0 0 1 1 x should be below the new entries. Also, where are 1 0 1 0 0 0 x x ?
 Proposed Response Response Status **O**

CI **45** SC **45.2.1.6** P19 L23 # 9
 Zimmerman, George ADI,APLgp,Cisco,Marvell,OnSemi,Sony,SenTekse
 Comment Type **E** Comment Status **X**
 The new rows for 100GBASE-BR... are inserted in the wrong place (101xxxx end up between 10000101 and 1000011x). They should be immediately below the struck out reserved row 101xxxxx. It appears codes for 101000xx are also missing - are these reserved or are they allocated by df?
 SuggestedRemedy

Move rows for 1010101x through 10100100 above reserved row for 1001xxxx = reserved. Insert new reserved row 101000xx = reserved below row for 10100100 = 100GBASE-BR10-D PMA/PMD (editor to check that this code hasn't been allocated by another standard ahead of this one. If it is allocated by another standard in progress, suggest you inform the editor of that standard of these changes to this register - they will need to align).
 Proposed Response Response Status **O**

CI **45** SC **45.2.1.117.7a** P23 L48 # 16
 Dawe, Piers Nvidia
 Comment Type **T** Comment Status **X**
 100G RS-FEC-Int ability bit applies to 100GBASE-BRx only. A CR or KR doesn't have this bit but it does have the ability.
 SuggestedRemedy
 Need to say so
 Proposed Response Response Status **O**

CI **56** SC **56.1.3** P30 L28 # 17
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **X**
 Why is 161 here among 25G clauses?
 SuggestedRemedy
 Move to near 91
 Proposed Response Response Status **O**

Cl 56 SC 56.1.3 P30 L32 # 18
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 50GBASE-R PMA
 SuggestedRemedy
 50GBASE-R and 100GBASE-P PMA
 Proposed Response Response Status O

Cl 80 SC 80.1.3 P31 L17 # 19
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 VR1and
 SuggestedRemedy
 Insert space
 Proposed Response Response Status O

Cl 80 SC 80.1.4 P33 L29 # 20
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 Full stops
 SuggestedRemedy
 Remove
 Proposed Response Response Status O

Cl 80 SC 80.4 P35 L30 # 21
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 Parts of footnotes a and b don't apply to Table 80-7 but do apply to Table 80-7a. Also, footnote c applies to both tables.
 SuggestedRemedy
 For Table 80-7:
 a For 40GBASE-R, 1 bit time (BT) is equal to 25 ps. (See 1.4.215 for the definition of bit time.)
 b For 40GBASE-R, 1 pause_quantum is equal to 12.8 ns. (See 31B.2 for the definition of pause_quanta.)
 For Table 80-7a:
 a For 100GBASE-R, 1 bit time (BT) is equal to 10 ps. (See 1.4.215 for the definition of bit time.)
 b For 100GBASE-R, 1 pause_quantum is equal to 5.12 ns. (See 31B.2 for the definition of pause_quanta.)
 Add footnote c to Table 80-7a.
 Proposed Response Response Status O

Cl 80 SC 80.5 P38 L3 # 22
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 Sublayer delay constraints
 SuggestedRemedy
 Summary of Skew Variation constraints
 Proposed Response Response Status O

Cl 80 SC 80.5 P38 L7 # 23
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 26.5625GBd
 SuggestedRemedy
 Insert space
 Proposed Response Response Status O

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Cl 80 SC 80.5 P38 L40 # 24
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 Clause 161 through Clause 163, and related annexes
 SuggestedRemedy
 Clause 161 through Clause 163, Clause 168, and related annexes
 Proposed Response Response Status O

Cl 91 SC 91.7.4.2 P43 L7 # 27
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 KR5
 SuggestedRemedy
 Should be KP4 as in 3db, 3ck
 Proposed Response Response Status O

Cl 91 SC 91.7.3 P41 L24 # 25
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 Too many "or"
 SuggestedRemedy
 There should be just one per list:
 100GBASE-BR20, or
 100GBASE-BR40 PHY
 Proposed Response Response Status O

Cl 135 SC 135 P44 L1 # 28
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 135. Introduction to 50 Gb/s networksPhysical Medium Attachment (PMA) sublayer, type
 50GBASE-R and 100GBASE-P
 SuggestedRemedy
 Delete "Introduction to 50 Gb/s networks"
 Proposed Response Response Status O

Cl 91 SC 91.7.4.1 P42 L15 # 26
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 KR4
 SuggestedRemedy
 Should be KP4 as in 3db, 3ck
 Proposed Response Response Status O

Cl 135 SC 135.5.7.2 P44 L25 # 29
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 An PMA
 SuggestedRemedy
 A PMA
 Proposed Response Response Status O

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Cl 135 SC 135.5.7.2 P44 L44 # 4 [REDACTED]
 Maguire, Valerie Copperopolis (affl w/ CME Consulting and Cisco)
 Comment Type E Comment Status X
 This sentence is confusing to me. It seems there must be a way to make it clearer. The sentence should start with "A PMA" (not "An PMA").
 SuggestedRemedy
 Replace, ". An PMA shall provide 1/(1+D) mod 4 precoding capability on each output lane, except a PMA that is connected to the service interface of a 100GBASE-BRx PMD which may provide such a capability."
 with, "A PMA, except one connected to the service interface of a 100GBASE-BRx PMD and already providing such a capability, shall provide 1/(1+D) mod 4 precoding capability on each output lane."
 Proposed Response Response Status O

Cl 135 SC 135.7.3 P45 L4 # 30 [REDACTED]
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 Need to declare the new major option
 SuggestedRemedy
 Add the major option for 100GBASE-BRx
 Proposed Response Response Status O

Cl 157 SC 157.4.2 P50 L42 # 31 [REDACTED]
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 Skew constraints - this is for 100G only
 SuggestedRemedy
 Change subclause heading to: Skew constraints for 100GBASE-BRx
 Proposed Response Response Status O

Cl 157 SC 157.4.2 P50 L52 # 33 [REDACTED]
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 For 100GBASE-VR1 and 100GBASE-SR - not
 SuggestedRemedy
 Since the whole subclause is about 100GBASE-BRx - delete
 Proposed Response Response Status O

Cl 157 SC 157.4.2 P50 L52 # 32 [REDACTED]
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 This seems to repeat the material in 168.3.2.
 SuggestedRemedy
 Would it be better to handle it like the delay specs?
 Replace contents of subclause with: The Skew and Skew Variation constraints for 100GBASE-BRx PHY sublayers are specified in 80.5.
 Proposed Response Response Status O

Cl 157 SC 157.6 P51 L13 # 34 [REDACTED]
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 Clause 114, Clause 158 through Clause 160, Clause 168
 SuggestedRemedy
 Clause 114, Clause 152, Clause 158 through Clause 161, Clause 168
 Proposed Response Response Status O

Cl 161 SC 161.6.10a P52 L28 # 35
 Dawe, Piers Nvidia
 Comment Type T Comment Status X
 100G_RS_FEC_Int_ability applies to 100GBASE-BRx, but not CR or KR, which don't have this bit but do have the ability.
 SuggestedRemedy
 Insert sentence: The 100G_RS_FEC_Int_ability variable applies to 100GBASE-BRx. Add sentence at the end: For other PHY types, the ability is determined by the PHY type and there is no such variable.
 Proposed Response Response Status O

Cl 168 SC 168.5.9 P59 L35 # 36
 Dawe, Piers Nvidia
 Comment Type E Comment Status X
 the PMD_receive_fault function: underscores or not?
 SuggestedRemedy
 If, as appears to be the case, variable names use underscores and function names do not, change PMD_receive_fault function to PMD receive fault function, twice.
 Also, insert space in thePMD_receive_fault
 Proposed Response Response Status O

Cl 168 SC 168.6.1 P60 L21 # 37
 Dawe, Piers Nvidia
 Comment Type T Comment Status X
 According to D2.1 comment 63, there should be an editor's note calling for contributions on the tolerancing for 100GBASE-BR2 and whether it should use a minimum loss spec.
 SuggestedRemedy
 Consider the tolerancing for 100GBASE-BR2 and whether it should use a minimum loss spec; add editor's note if more study is needed.
 Proposed Response Response Status O

Cl 168 SC 168.6.1 P60 L22 # 5
 Jackson, Kenneth Sumitomo Electric
 Comment Type TR Comment Status X
 Modification to Table 168-6 100GBASE-BR10 Tx launch powers (avg, OMA, excursion) based on new MPI calculations.
 SuggestedRemedy
 0.2dB lower transmit launch powers (avg, OMA, excursion). See presentation regarding this comment.
 Proposed Response Response Status O

Cl 168 SC 168.6.1 P61 L20 # 6
 Jackson, Kenneth Sumitomo Electric
 Comment Type TR Comment Status X
 Modify Eq 168-1 100GBASE-BR10 to reflect lower Tx launch powers based on new MPI calculations
 SuggestedRemedy
 0.2dB lower transmit launch power. See presentation regarding this comment.
 Proposed Response Response Status O

Cl 168 SC 168.6.2 P61 L33 # 8
 Jackson, Kenneth Sumitomo Electric
 Comment Type TR Comment Status X
 Modify Table 168-7 to refelect lower transmit powers (assuming those proposed 0.2dB lower values are adopted)
 SuggestedRemedy
 Avg Rx power = 4.6dBm Receiver power (OMA(outer) (max) = 4.8dBm
 Avg Rx Power (min) = -8.4dBm
 Damage threshold =5.6dBm (to maintain consistent methodology)
 See presentation regarding this comment
 Proposed Response Response Status O

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CI 168 SC 168.6.3 P62 L25 # 7

Jackson, Kenneth Sumitomo Electric

Comment Type TR Comment Status X

Modify Table 168-8 100GBASE-BR10 Power Budget and Allocation for penalties.

SuggestedRemedy

Modify Table 168-8 100GBASE-BR10 Power Budget and Allocation for penalties from 10.6dB to 10.4dB & 4.3dB to 4.1dB, respectively. See presentation regarding this comment.

Proposed Response Response Status O

CI 168 SC 168.7.5 P64 L34 # 40

Dawe, Piers Nvidia

Comment Type T Comment Status X

This TDECQ doesn't use the FFE in 121.8.5.4 because that has 38 ps tap spacing for 50 Gb/s and we need 19 ps spacing for 100 Gb/s as in 140.7.5.1.

SuggestedRemedy

Change 121.8.5.4 to 140.7.5.4.

Proposed Response Response Status O

CI 168 SC 168.6.3 P62 L25 # 38

Dawe, Piers Nvidia

Comment Type T Comment Status X

Editor's note "call for further check of the penalty values" has disappeared, contrary to D2.0 comment 25

SuggestedRemedy

Review the penalty values; add editor's note if more study is needed.

Proposed Response Response Status O

CI 168 SC 168.7.5 P64 L36 # 41

Dawe, Piers Nvidia

Comment Type E Comment Status X

signal rate

SuggestedRemedy

signaling rate

Proposed Response Response Status O

CI 168 SC 168.7.1 P63 L5 # 39

Dawe, Piers Nvidia

Comment Type T Comment Status X

If the definition of RIN measurement is improved (D2.1 comment 25), the only use for square wave in the standard would be as an alternative to SSPRQ for measuring transmitter transition time. But for that, one needs to find 20% and 80% of OMAouter; OMAouter is measured with PRBS13Q or SSPRQ, not square wave, so it's not practical anyway. Transmitter transition time goes with TECQ, extinction ratio, overshoot and undershoot; they can all be obtained from the same measurement with SSPRQ. There is no need for the standard to mandate a second way. Square wave is a very untypical pattern which should not be recommended if there is a practical alternative.

SuggestedRemedy

Delete square wave from tables 168-9 and 168-10. Someone who wants to use it still can, because it still exists in 120.5.11.2.5, and the registers to advertise it and control it still exist in 45, but we should not encourage it in future.

Proposed Response Response Status O

CI 168 SC 168.7.5 P64 L40 # 42

Dawe, Piers Nvidia

Comment Type E Comment Status X

This long, hard to understand, run-on sentence has been fixed elsewhere e.g. 150.8.5, 150.8.7, 150.8.10 and 151.8.1

SuggestedRemedy

Change "GHz, and at frequencies above 1.3 x 53.125 GHz, the response" to "GHz. At frequencies above 1.3 x 53.125 GHz, its response" (2 changes)

Proposed Response Response Status O

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Cl 168 SC 168.7.5 P64 L45 # 43
Dawe, Piers Nvidia
Comment Type T Comment Status X
chayeb_3dj_01_2505 slide 8 shows that a very asymmetric signal can pass all the specs and still be troublesome to receive.
SuggestedRemedy
Add a spec for the maximum tap weight for the tap immediately after the largest tap: max 0.07. (Typically this tap would be -ve)
Proposed Response Response Status O

Cl 168 SC 168.7.5.1 P65 L18 # 44
Dawe, Piers Nvidia
Comment Type T Comment Status X
This says "The link may be as short as 2 m, and the minimum or maximum dispersion may be 0." Actually, the minimum for the test cannot be 0, and the maximum cannot be 0 for 100GBASE-BRx-D. Editorial changes for use of "may", and making the intent clearer.
SuggestedRemedy
Change to "A link may be as short as 2 m, therefore the maximum dispersion for 100GBASE-BRx-U is 0 for some transmitter wavelengths."
Proposed Response Response Status O

Cl 168 SC 168.7.6 P65 L41 # 46
Dawe, Piers Nvidia
Comment Type T Comment Status X
A signal that needed a main tap at 0.8 would be unhealthily over-emphasised and troublesome for the receiver. While the over/under-shoot spec may catch many such signals, it doesn't catch them all. 802.3dj has a limit of 0.9. We should apply the same limit. It is reasonable to do this for TECQ while we study the interplay between this and chromatic dispersion some more.
SuggestedRemedy
Change 0.8 to 0.9, for TECQ: after "except that the test fiber is not used", add "and the largest magnitude tap coefficient, is constrained to be at least 0.9."
Proposed Response Response Status O

Cl 168 SC 168.7.6 P65 L41 # 45
Dawe, Piers Nvidia
Comment Type E Comment Status X
Missing cross-reference
SuggestedRemedy
168.7.5
Proposed Response Response Status O

Cl 168 SC 168.7.11 P67 L11 # 47
Dawe, Piers Nvidia
Comment Type T Comment Status X
We should reconsider unsatisfied D2.0 comment 25: update the RIN definition to align to what is defined in 802.3dj. This is industry practice.
SuggestedRemedy
Proposed Response Response Status O

Cl 168 SC 168.7.13 P68 L50 # 48
Dawe, Piers Nvidia
Comment Type E Comment Status X
"SRS" is not used in Table 168-10, or 121.8.10. It should be defined or removed.
SuggestedRemedy
As it appears only twice, remove: change SRS to stressed receiver sensitivity here and on the next page
Proposed Response Response Status O

Cl 168 SC 168.7.13 P68 L51 # 49

Dawe, Piers Nvidia
 Comment Type T Comment Status X

D2.1 comment 49: Add text saying that the PMD's transmitter and any other circuitry that could cause crosstalk should be operational when stressed sensitivity (and regular sensitivity) is measured. The same goes for transmitter measurements such as TECQ and TDECQ. 121.8.5.1 says "with all other lanes in operation but this is interpreted as other lanes in the same Ethernet link, and these PMDs are serial. 167.8.1 says "For a receiver in a multilane device" (as opposed to multilane PHY or multilane PMD"

SuggestedRemedy
 Add suitable text

Proposed Response Response Status O

Cl 168 SC 168.7.13 P68 L52 # 50

Dawe, Piers Nvidia
 Comment Type T Comment Status X

No need for the indirection in "The SECQ of the stressed receiver conformance test signal is measured according to 168.7.5, except that the test fiber is not used." because SECQ and TECQ are the same (although I don't remember that this is stated).

SuggestedRemedy
 Change "according to 168.7.5, except that the test fiber is not used" to "according to the procedure for TECQ given in 168.7.6"

Proposed Response Response Status O

Cl 168 SC 168.10 P72 L8 # 51

Dawe, Piers Nvidia
 Comment Type T Comment Status X

This section is about the cabling, not the budget. As I understand it, when cabling is installed it is measured at 1310 nm (and maybe 1550 nm), and that's adequate for all O-band PMDs. Clauses 52 and 59 follow this method clearly.

SuggestedRemedy
 In the table, for the channel insertion loss rows, insert "1310". Move "Over the wavelength range 1303.6 nm to 1310.1 nm", to Table 168-8, 100GBASE-BRx illustrative link power budgets, where it is applicable. There is no need to adjust any numbers in this clause, because the operating wavelengths are so close to 1310 nm.

Proposed Response Response Status O

Cl 168 SC 168.10 P72 L24 # 52

Dawe, Piers Nvidia
 Comment Type E Comment Status X

The new sentence about dispersion doesn't relate to the insertion loss row.

SuggestedRemedy
 Move anchor b to the first dispersion row.

Proposed Response Response Status O

Cl 168 SC 168.11.4.1 P75 L15 # 53

Dawe, Piers Nvidia
 Comment Type E Comment Status X

SP3

SuggestedRemedy
 SP4?

Proposed Response Response Status O

Cl 168 SC 168.11.4.1 P75 L20 # 54

Dawe, Piers Nvidia
 Comment Type E Comment Status X

SP3

SuggestedRemedy
 SP5? If so, O not M

Proposed Response Response Status O

Cl **169** SC **169.8.3** P**69** L**37** # **1**

Maguire, Valerie Copperopolis (aff'l w/ CME Consulting and Cisco)

Comment Type **E** Comment Status **X**

Consider simplifying guidance.

SuggestedRemedy

Replace, "It is recommended that proper installation practices, as defined by applicable local codes and regulation, be followed in every instance in which such practices are applicable." with, "Proper installation practices, as defined by applicable local codes and regulation, should be followed."

Proposed Response Response Status **O**

Cl **169** SC **169.8.4** P**69** L**49** # **3**

Maguire, Valerie Copperopolis (aff'l w/ CME Consulting and Cisco)

Comment Type **E** Comment Status **X**

Consider simplifying guidance.

SuggestedRemedy

Replace, "It is recommended that manufacturers indicate in the literature associated with the PHY the operating environmental conditions to facilitate selection, installation, and maintenance." with, "It is recommended that manufacturers indicate conditions to facilitate selection, installation, and maintenance in the literature associated with the PHY."

Proposed Response Response Status **O**

Cl **169** SC **169.8.4** P**69** L**49** # **2**

Maguire, Valerie Copperopolis (aff'l w/ CME Consulting and Cisco)

Comment Type **E** Comment Status **X**

Consider simplifying guidance.

SuggestedRemedy

Replace, "It is recommended that manufacturers indicate, in the literature associated with the components of the optical link, the distance and operating environmental conditions over which the specifications of this clause are met." with, "It is recommended that manufacturers indicate distance and operating environmental conditions in the literature associated with the components of the optical link."

Proposed Response Response Status **O**

Cl **Content** SC **Contents** P**13** L**12** # **12**

Dawe, Piers Nvidia

Comment Type **E** Comment Status **X**

Layout

SuggestedRemedy

Tab position?

Proposed Response Response Status **O**

Cl **Content** SC **Contents** P**14** L**26** # **13**

Dawe, Piers Nvidia

Comment Type **E** Comment Status **X**

Layout

SuggestedRemedy

Tab position?

Proposed Response Response Status **O**