

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

CI **FM** SC **FM** P **13** L **18** # **43**
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **R** amendment list
 Should P802.3cx be listed now that it is in WG ballot?
 SuggestedRemedy
 Add an entry for 802.3cx
 Response Response Status **C**
 REJECT.
 In the current amendment sequence as indicated by the 802.3 working group chair, 802.3ck precedes 802.3cx as an amendment to the new revision. Therefore 802.3cx should not be listed in 802.3ck.
 No changes to the document.

CI **FM** SC **FM** P **14** L **3** # **44**
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **R** formatting
 Missing tabs for clauses in the Contents
 SuggestedRemedy
 Correct the template
 Response Response Status **C**
 REJECT.
 This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.
 The comment points out that in the table of contents the page number is not right justified.
 These formatting issues do not affect the technical correctness of the draft. This change is an improvement to the draft, so the commenter is encouraged to re-submit at Sponsor ballot.

CI **FM** SC **FM** P **16** L **5** # **45**
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **R** formatting
 Missing tabs for multi-line entries in the Contents
 SuggestedRemedy
 Correct the template?
 Response Response Status **C**
 REJECT.
 This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.
 The comment points out that in the table of contents the page number is not right justified.
 These formatting issues do not affect the technical correctness of the draft. This change is an improvement to the draft, so the commenter is encouraged to re-submit at Sponsor ballot.

CI **FM** SC **FM** P **21** L **12** # **46**
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **R** formatting
 Italic page number - I wonder why
 SuggestedRemedy
 Fix
 Response Response Status **C**
 REJECT.
 This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.
 The comment points out that the table of contents in one instance page number in italic font rather than normal font.
 These formatting issues do not affect the technical correctness of the draft. This change is an improvement to the draft, so the commenter is encouraged to re-submit at Sponsor ballot.

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

Cl **FM** SC **FM** P **24** L **32** # **11**
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **R** formatting
 Missing tabs for annexes A and 135A in the Contents
 SuggestedRemedy
 Insert tabs, somehow
 Response Response Status **C**
 REJECT.
 This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.
 The comment points out that in the table of contents the page number is not right justified.
 These formatting issues do not affect the technical correctness of the draft. This change is an improvement to the draft, so the commenter is encouraged to re-submit at Sponsor ballot.

Cl **FM** SC **FM** P **30** L **3** # **12**
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **R** amendment number
 Missing amendment number
 SuggestedRemedy
 Insert amendment number, or a placeholder
 Response Response Status **C**
 REJECT.
 This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.
 Since the timelines of various projects may wander around relative to each other in the next eight months, the order of amendments may change. Once the draft is approaching completion and the order of amendments is more stable during the SA ballot cycle we can reconsider adding the amendment number.

Cl **FM** SC **FM** P **30** L **48** # **13**
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **R** front matter
 This editor's note would be more useful if it listed the amendments that are actually noted as running in parallel and affecting this draft, not just the concept. Apparently, only P802.3db affects this draft, but others might.
 SuggestedRemedy
 Change "(e.g., IEEE P802.3cn and IEEE P802.3cu)" to "(IEEE P802.3db; no impact is noted from IEEE P802.3dd, P802.3de, IEEE P802.3cs, or IEEE P802.3cx)"
 Response Response Status **C**
 REJECT.
 This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

802.3cn and 802.3cu have now been merged into the latest revision of the base standard (802.3dc) and therefore the editorial instructions point to the new revision (and its amendments) rather than those drafts/projects current listed in this text.

However, this concern does not affect the technical correctness of the draft. This change is potentially an improvement, so the commenter is encouraged to re-submit at Sponsor ballot.

[Editor's note: Changed page number from 32 to 30.]

Cl **FM** SC **FM** P **30** L **48** # **14**
 Dawe, Piers Nvidia
 Comment Type **E** Comment Status **D** front matter
 This editor's note would be more useful if it listed the amendments that are actually noted as running in parallel and affecting this draft, not just the concept. Apparently, only P802.3db affects this draft, but others might.
 SuggestedRemedy
 Change "(e.g., IEEE P802.3cn and IEEE P802.3cu)" to "(IEEE P802.3db; no impact is noted from IEEE P802.3dd, P802.3de, IEEE P802.3cs, or IEEE P802.3cx)"
 Proposed Response Response Status **Z**
 REJECT.
 This comment was WITHDRAWN by the commenter.

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

Cl 45 SC 45.2.1.21 P 42 L 11 # 15

Dawe, Piers Nvidia
 Comment Type E Comment Status R 802.3db changes

P802.3db is making changes to this table, so the "Reserved" row is probably not correct

SuggestedRemedy

Show the row above and below the rows this project adds so the context can be reviewed. For preference, also include all rows added by preceding amendments so that clashes can be more easily spotted. Adjust the instructions at line 3 to mention the preceding amendment(s) that affect this table (802.3db?). Similarly for Table 45-27.

Response Response Status C

REJECT.

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

In the current amendment sequence as indicated by the 802.3 working group chair, 802.3db precedes 802.3ck as an amendment to the new revision.

However, there are a number of comments against 802.3db D2.0 relating to amendments in Clause 45. Until these comments are resolved and implemented as necessary in the 802.3db draft, the 802.3ck draft cannot be fully reconciled with 802.3db.

This concern can be addressed during the SA ballot cycle if necessary.

Cl 45 SC 45.2.1.169 P 61 L 52 # 7

Han, Ruibo China Mobile Communication Co., Ltd.
 Comment Type E Comment Status R prbs9q name

What is the full word that the abbreviation "PRBS9Q" represents?

SuggestedRemedy

Add the full word for "PRBS9Q"

Response Response Status C

REJECT.

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

PRBS is listed in section "1.5 Abbreviations" of the base standard as "pseudo random bit sequence".

There is no precedent for expanding PRBS abbreviations in Clause 45, e.g., PRBS31Q.

The PRBS9Q test pattern is defined in detail in 120.5.11.2.a.

The referenced paragraph points to subclause 45.2.1.171a.

Subclause 45.2.1.171a in turn points to subclause 120.5.11.2.a.

Cl 45 SC 45.2.1.171a P 62 L 1 # 8

Han, Ruibo China Mobile Communication Co., Ltd.
 Comment Type E Comment Status R editorial instruction

Insert 45.2.1.171a after 45.2.1.171

SuggestedRemedy

"Insert" might be "Replace"?

Response Response Status C

REJECT.

"Insert" is the appropriate editing instruction because a new subclause is being added.

Editing instructions are described in the front matter on page 30 line 31.

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

Cl **120G** SC **120G.3.1** P **258** L **13** # **5**

Mellitz, Richard

Samtec

Comment Type **T** Comment Status **D** AC CM voltage

The use of peak to peak is need to comprehend the actual CM histogram and comprehensive meaning for the rms measurement. Adjustment for crest factor would 'level the playing field' for histogram difference for the rms measurements.

SuggestedRemedy

Change
AC common-mode RMS voltage, v_cmi (max)

To
AC common-mode RMS voltage adjusted, v_cmia (max)
where
 $v_{cmia} = v_{cmi}/CFA$
 $CFA = V_{CMMP}/(V_{cmi} * \sqrt{2})$

Proposed Response Response Status **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

Cl **120G** SC **120G.3.2** P **261** L **7** # **6**

Mellitz, Richard

Samtec

Comment Type **T** Comment Status **D** AC CM voltage

The use of peak to peak is need to comprehend the actual CM histogram and comprehensive meaning for the rms measurement. Adjustment for crest factor would 'level the playing field' for histogram difference for the rms measurements.

SuggestedRemedy

Change
AC common-mode RMS voltage, v_cmi (max)

To
AC common-mode RMS voltage adjusted, v_cmia (max)
where
 $v_{cmia} = v_{cmi}/CFA$
 $CFA = V_{CMMP}/(V_{cmi} * \sqrt{2})$

Proposed Response Response Status **Z**

REJECT.

This comment was WITHDRAWN by the commenter.

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

Cl **120G** SC **120G.3.2** P **261** L **11** # **21**

Dawe, Piers

Nvidia

Comment Type **TR** Comment Status **R** MO EH

D2.2 comment 93: If the eye height limit is the same at near end as at far end, there is huge margin at near end and the implementer is encouraged to optimise for far end or beyond, only limited by the NE VEC spec, while we want modules to be set up consistently, for the full range from near to far. EH is naturally much larger at NE than FE for a well set up output and the spec should reflect that. Also, host designers know their own loss and lower-loss hosts can take advantage of a better signal that cost the module nothing. This applies to both the short and long modes.

SuggestedRemedy

Change the near end eye height so that it is 2.5 dB above long far end: if far can remain at 15 mV, near becomes 20 mV. Far end remains the one with less margin. This would align with OIF VSR.

Response Response Status **U**

REJECT.

This comment pertains to the module output eye height (min) for long mode, near end.

The task force has previously considered substantively similar comments. This comment is a restatement of comments Draft 2.1 #98 and Draft 2.2 #93. Both were rejected on the basis of insufficient evidence to make the proposed changes. The responses may be found in the following comment resolution reports:
https://www.ieee802.org/3/ck/comments/draft2p2/8023ck_D2p2_final_closedcomments_sortedByNumber.pdf
https://www.ieee802.org/3/ck/comments/draft2p1/8023ck_D2p1_final_closedcomments.pdf

Cl **120G** SC **120G.3.3.5.1** P **265** L **50** # **22**

Dawe, Piers

Nvidia

Comment Type **T** Comment Status **R** HI SI PG EQ

The optimum settings for the second precursor and postcursor are very weak or zero. It would be better to make stressed signals consistent across the industry and simplify the tuning challenge than to try to squeeze out the last drop of tuning.

SuggestedRemedy

Change to a 3-tap functional model with two precursors

Response Response Status **C**

REJECT.

Evidence has not been provided that the suggested remedy is an improvement to the draft.

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

CI 120G SC 120G.3.3.5.1 P 266 L 15 # 23

Dawe, Piers

Nvidia

Comment Type TR Comment Status R HI SI calibration

As pointed out in D2.2 comment 148, the host stressed input signal is emulating a module so must obey the same rules. VEC and eye height must be in spec for both near end and far end. So ensuring this is part of the calibration process.

SuggestedRemedy

Similar to D2.1 comment 126 published in July: change "short or long mode far-end test" to "short or long mode far-end calibration or long mode near-end calibration"

Response Response Status U

REJECT.

This comment pertains to the host input stressed input far-end test for long mode.

The task force has previously considered a substantively similar comment.

This comment is a restatement of comment Draft 2.2 #148, which was rejected on the basis of insufficient evidence and insufficient detail to make the proposed changes. The response may be found in the following comment resolution report: https://www.ieee802.org/3/ck/comments/draft2p2/8023ck_D2p2_final_closedcomments_sortedByNumber.pdf

There is insufficient evidence to make the proposed changes.

CI 120G SC 120G.3.3.5.2 P 267 L 15 # 24

Dawe, Piers

Nvidia

Comment Type T Comment Status R HI SI calibration

The crosstalk signal amplitude should be calibrated with PRBS13Q. CEI 16.3.10.3.1 is quite clear about this: "The crosstalk signal is calibrated at TP4 or TP1a using a QPRBS13-CEI pattern, then the pattern is changed to QPRBS31-CEI for the test". Here, the value of 750 mV in Table 120G-8 is the same as in Table 120G-1, Host output, which is defined for PRBS13Q (see 120G.5.1 and 120E.3.1.2). As these crosstalk signals are emulating the host, they must match. Also, it is convenient to set up both the peak-to-peak voltage and the transition time of a signal on the same pattern, and PRBS13Q allows a transition time measurement and a cleaner peak-to-peak voltage measurement.

SuggestedRemedy

Move a few words:

The crosstalk signal transition time is calibrated with a PRBS13Q pattern. The crosstalk pattern is changed to PRBS31Q (see 120.5.11.2.2), scrambled idle (see 82.2.11 and 119.2.4.9), or another valid 100GBASE-R, 200GBASE-R, or 400GBASE-R signal for crosstalk amplitude calibration and stressed signal calibration (see step g).

to:

The crosstalk signal transition time and amplitude are calibrated with a PRBS13Q pattern. The crosstalk pattern is changed to PRBS31Q (see 120.5.11.2.2), scrambled idle (see 82.2.11 and 119.2.4.9), or another valid 100GBASE-R, 200GBASE-R, or 400GBASE-R signal for stressed signal calibration (see step g).

Similarly in 120G.3.4.3.2 for module stressed input crosstalk signal calibration.

Response Response Status C

REJECT.

Unlike a host output, the pattern generator has no specific output equalizer setting or VEC/EH targets to meet. Measuring with either PRBS13Q, PRBS31Q will have the same result as measured for a properly configured host output.

Also, since the insertion loss of the mated test fixture is much smaller than the host channel plus HCB, the difference in measurement result between PRBS31Q and PRBS13Q should be small.

The PRBS13Q would be a better pattern use for crosstalk calibration. This should be addressed in SA ballot.

There is no consensus to make related changes at this time.

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

CI 120G SC 120G.3.3.5.2 P 267 L 20 # 25

Dawe, Piers

Nvidia

Comment Type TR Comment Status R HO SI calibration

As pointed out in D2.2 comment 148, the host stressed input signal is emulating a module so must obey the same rules. VEC and eye height must be in spec for both near end and far end. So ensuring this is part of the calibration process.

This says "parameters in Table 120G-5 for far-end host channel type and the requested mode": but in one case, the near end needs a parameter from the table

SuggestedRemedy

As in D2.1 comment 129 published in July: change to "parameters in Table 120G-5 for host channel type and the requested module output mode"

Response Response Status U

REJECT.

The task force has previously considered a substantively similar comment.

This comment is a restatement of comment Draft 2.2 #148, which was rejected on the basis of insufficient evidence to make the proposed changes and insufficient detail to implement the proposed changes. The response may be found in the following comment resolution report:

https://www.ieee802.org/3/ck/comments/draft2p2/8023ck_D2p2_final_closedcomments_sortedByNumber.pdf

CI 120G SC 120G.3.3.5.2 P 267 L 21 # 26

Dawe, Piers

Nvidia

Comment Type TR Comment Status R HI SI calibration

Ref. D2.2 comment 148. The module output eye height and VEC have to comply at both near end and far end, so a module can be tuned to either end or somewhere in the middle. The host stressed input signal is tuned to far end, only. This is inconsistent and a serious flaw in the spec.

SuggestedRemedy

Tighten the equaliser limits for module output so that modules are tuned consistently across the industry.

Response Response Status U

REJECT.

The task force has previously considered a substantively similar comment.

This comment is a restatement of Draft 2.2 comment #148, which was rejected on the basis of insufficient evidence to make the proposed changes and insufficient detail to implement the proposed changes. The response may be found in the following comment resolution reports:

https://www.ieee802.org/3/ck/comments/draft2p2/8023ck_D2p2_final_closedcomments_sortedByNumber.pdf

For this comment, the suggested remedy does not contain sufficient detail so that the task force can understand the specific changes that satisfy the comment.

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

CI **120G** SC **120G.3.3.5.2** P **267** L **25** # **27**

Dawe, Piers

Nvidia

Comment Type **TR** Comment Status **R** *HI SI calibration*

Ref. D2.2 comment 148. The signal needs to be checked with the near end channel so that its eye height is at least the target and its VEC is no more than VEC (max) in the table. If it fails, the signal must be adjusted to bring it into compliance. For short mode, near end VEC might be worse than far; however it may still be feasible to tune it to get 3 of 4 (near, far, VEC and EH) to the targets.

SuggestedRemedy

Road-test the procedure and revise the text per comment.

Response *Response Status* **U**

REJECT.

The task force has previously considered a substantively similar comment. This comment is a restatement of comment Draft 2.2 #148, which was rejected on the basis of insufficient evidence to make the proposed changes and insufficient detail to implement the proposed changes. The response may be found in the following comment resolution reports:
https://www.ieee802.org/3/ck/comments/draft2p2/8023ck_D2p2_final_closedcomments_sortedByNumber.pdf

For this comment, the suggested remedy does not contain sufficient detail so that the task force can understand the specific changes that satisfy the comment.

CI **120G** SC **120G.3.4.3.2** P **271** L **4** # **28**

Dawe, Piers

Nvidia

Comment Type **T** Comment Status **R** *MI SI calibration*

D2.2 comment 133: In step a, say that, this pattern generator "transition time" is defined for neutral emphasis at the pattern generator output (so it's really rise time not transition time). Similarly in 120G.3.4.3.2.
 This is now done for 120G.3.3.5.2 host stressed signal tolerance but not for 120G.3.4.3.2 module stressed signal tolerance.

SuggestedRemedy

Apply the same fix to 120G.3.4.3.2.

Response *Response Status* **C**

REJECT.

The response to comment D2.2 comment #133 was unclear about whether the change was to be applied only to 120G.3.3.5.2 alone or to 120G.3.4.3.2 as well as the suggested remedy requests. However, it seems appropriate that the same consideration should apply to the transition time for the module input stressed test.

There is no consensus to implement the suggested remedy at this time. However, this concern should be considered during SA ballot cycle.

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

CI 120G SC 120G.3.4.3.2 P 271 L 25 # 29

Dawe, Piers

Nvidia

Comment Type T Comment Status R MI SI calibration

This formula imposes a delay spec on the frequency-dependent attenuator, which is unnecessary because it and the pattern generator are supposed to have good return loss, and typically there will be coax cables of unspecified length between them (which may contribute a small part of the loss). The shape of the loss curve imposes the phase response we want.

SuggestedRemedy

Make it clear that extra or reduced delay is acceptable. One way would be to change "such that the scattering parameters approximate" to "such that the magnitude of the scattering parameters approximate".

Response Response Status C

REJECT.

The text states "the frequency-dependent attenuator is configured such that the scattering parameters approximate...", which give some leeway to the implementer to allow for differences in delay through the implementation.

However, it might be helpful to add wording that explicitly allows for variations in delay. These improvements should be addressed in SA Ballot cycle.

There is no consensus to make any changes at this time.

CI 120G SC 120G.3.4.3.2 P 271 L 33 # 31

Dawe, Piers

Nvidia

Comment Type TR Comment Status R MI SI calibration

"the reference receiver CTLE setting that minimizes VEC has gDC + gDC2 less than or equal to -10.5 dB" is not a CTLE limit, it's a requirement that the signal prefers a CTLE setting within a range. This is as it should be (a simple limit would allow an easy but inappropriate signal). But, if the reference receiver CTLE setting that minimizes VEC doesn't have gDC + gDC2 less than or equal to -10.5 dB, what is the reader supposed to do?

SuggestedRemedy

Please explain.

Response Response Status C

REJECT.

In the 120G.5.2 method, items b through j it states:

"Perform the following steps for each valid combination of gDC and gDC2 as specified in Table 120G-11"

The exception referenced in the comment puts a further constraint, beyond being valid, on gDC and gDC2, while the pattern generator output equalizer is being adjusted for the target VEC.

There is no consensus on the specific meaning of "minimizes VEC".

The PG output equalizer can be adjusted appropriately to achieve the minimum VEC for a given gdc+gdc2 constraint.

Further work in SA Ballot is encouraged to improve the wording for minimizing VEC and the related procedure.

There is no consensus to make any changes at this time.

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

Cl 120G SC 120G.3.4.3.2 P 271 L 33 # 30

Dawe, Piers Nvidia
 Comment Type T Comment Status R MI SI calibration

We have a gDC + gDC2 max limit for the high loss module stressed input case to ensure that the module can equalise a very slow signal. Presumably there should be max/min limits for gDC + gDC2 for the low loss case to set the contract for faster signals.

SuggestedRemedy
 Per comment

Response REJECT. Response Status C

The comment does not provide sufficient evidence to support making a change nor does the suggested remedy contain sufficient detail so that the task force can understand the specific changes that satisfy the comment.

Cl 120G SC 120G.3.4.3.2 P 272 L 25 # 32

Dawe, Piers Nvidia
 Comment Type TR Comment Status R MI SI calibration

The mated compliance boards should approximate Eq 162B-5, and the frequency-dependent attenuator should look like a clean PCB transmission line. The two in series will NOT look like another clean transmission line with no f^2 term because if that were attempted, the loss curve of the frequency-dependent attenuator would have to bend the wrong way. This is unrealistic and impractical.

SuggestedRemedy

Revise text and equation 120G-3 to make this clear. Show all three curves (Eq 162B-5 mated compliance boards, frequency-dependent attenuator and the combination) in Figure 120G-11.
 L changes from 464 to 296 mm;
 Eq 120G-3 becomes $0.981\sqrt{f} + 0.2463f$ for the frequency-dependent attenuator;
 The loss of the combination is $1.425\sqrt{f} + 0.3588f + 0.001884f^2$.

Response REJECT. Response Status C

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

The following presentation was reviewed by the task force:
https://www.ieee802.org/3/ck/public/21_11/dawe_3ck_01_1121.pdf

The comment and presentation suggests that the recommended insertion loss of the frequency-dependent generator plus the mated test fixture is not in line with the normative requirement that the insertion loss from pattern generator (PG) output to TP1a is 18.2 dB.

The following text provides a clear normative target insertion loss of 18.2 dB from PG output to TP1a:

"The resulting insertion loss from the output of the pattern generator to TP1a is 18.2 dB at 26.56 GHz, representing 16 dB channel loss with an additional allowance for host transmitter package loss."

In the following text, "scattering parameters" refers to the response from PG output to TP1a, not just the FDA:

"For the high-loss signal calibration, the frequency-dependent attenuator is configured such that the scattering parameters approximate those for a PCB transmission line calculated from Equation (93A-13) and Equation (93A-14) using $z_p = 464$ mm in length and the relevant parameter values given in Table 162-20."
 However, some clarification here might be helpful.

For Equation 120G-3, the description of ILdd incorrectly refers to this as being the FDA ILdd, but rather should be the total target ILdd (including the FDA and the MTF).

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

Similarly, the title in Figure 120G-11 incorrectly refers to the FDA insertion loss and should refer to the target insertion loss (including the FDA and the MTF).

The specification is correct as written, but there are some errors in the equation description and figure title that should be corrected during SA Ballot cycle.

There is no consensus to make any changes at this time.

CI 120G SC 120G.4.1 P 273 L 45 # 33

Dawe, Piers Nvidia
 Comment Type T Comment Status R channel IL

This sentence "For correct operation, the actual differential-mode to differential-mode insertion loss could be higher or lower than that given by Equation (120G-4) due to the channel ILD, return loss, and crosstalk" is a necessary part of the story. It tells the host implementer that correct operation is his responsibility, and he needs to put more thought into it than simply meeting a recommended loss curve, and tells the module implementer that he has to cope with compliant hosts whose channels don't meet this recommendation.

SuggestedRemedy

Reinstate a sentence that says this - preferably one that is better understood. e.g "However, channels outside this range are not excluded, and better insertion loss may be necessary to allow for factors such as channel ILD, return loss, and crosstalk."

Response Response Status C

REJECT.

[Editor's note: Changed line from 15 to 45.]

This referenced text was removed as a result of the adopted response to D2.2 comment #48. There was debate over whether this text should be deleted. In the end the majority of the task force, as determined by straw poll, preferred to remove the text. The adopted response including the straw poll may be found in the following document:
https://www.ieee802.org/3/ck/comments/draft2p2/8023ck_D2p2_final_closedcomments_sor tedByNumber.pdf

There is no consensus to implement the suggested remedy. It is suggested that further consensus on improved wording be worked on.

CI 120G SC 120G.5.2 P 275 L 34 # 34

Dawe, Piers Nvidia
 Comment Type T Comment Status R MO RR CTLE

Ref D2.2 comments 98 and 99. The max (least -ve) gDC + gDC2 is -2 for TP1a, -2 for TP4 near end, -3 for TP4 far end and -10.5 for module stressed input high loss. There is about 10 dB loss difference between short near end and long far end, but 1 dB difference in max gDC + gDC2 which seems far too little. It looks like TP4 far end is out of step. We should not be encouraging modules to try to do a job the host receiver does better.

SuggestedRemedy

Impose a max gDC + gDC2 limit of -5 for TP4 long far end, e.g. with gDC, gDC2 ranges in the same style as TP1a.

Response Response Status C

REJECT.

The task force has previously considered substantively similar comments.

This comment is a restatement of comment Draft 2.2 #98 (which was a restatement of D2.1 #103 and D2.0 #183) and D2.2 #99 which was a restatement of D2.1 #104 and D2.0 #178. All of these comments were rejected on the basis of either lack of consensus to implement the proposal, insufficient evidence to make the proposed changes, and/or insufficient detail to implement the proposed changes.

The responses may be found in the following comment resolution reports:

- https://www.ieee802.org/3/ck/comments/draft2p2/8023ck_D2p2_final_closedcomments_sor tedByNumber.pdf
- https://www.ieee802.org/3/ck/comments/draft2p1/8023ck_D2p1_final_closedcomments.pdf
- https://www.ieee802.org/3/ck/comments/draft2p0/8023ck_D2p0_final_closedcomments_sor tedByNumber.pdf

This comment does not provide sufficient evidence to support the proposed changes.

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

CI **120G** SC **120G.5.2** P **277** L **6** # **35**

Dawe, Piers

Nvidia

Comment Type **TR** Comment Status **R** EO method

Ref D2.2 comment 101: this draft has a (de-)weighted rectangular eye mask spec with mask height = max(EHmin, EA/VECmax) and effective mask width ~2x0.03 to 2x0.035 UI, although it is described as a histogram 2x0.05 UI wide. This is too narrow; compare 120E with ESMW of 0.2 or 0.22 UI. It's half as wide as TDECQ with histograms extending to +/- 0.07 UI. This de-weighted histogram might work if there were a guarantee that no host or module would ever produce a fast, highly jittered eye, but - we don't have that guarantee. That work needs to be done before making such a hole in the spec.

De-weighting the sides of the histogram with flat top and bottom, rather than chamfering the corners, means that infringing the corners by a mile is counted the same as infringing by an inch, which is bad.

Most of the weight of samples is in the middle of the eye which is pointless; we know the corners will fail first so we should focus on measuring them, not the middle.

The effective BER criterion of the (de-)weighted mask seems to be around 1e-4, not 1e-5 as before.

The distribution of repeated measurements is very skewed.

We need an eye mask that's more eye shaped, so that a higher proportion of the samples near the boundary are measured at full weight and contribute properly to the measurement. Eye mask measurement with a 10-sided mask has been pre-programmed into scopes for about 20 years, we should use established tools and methods where they work well.

SuggestedRemedy

Change from a 4-cornered weighted mask with corners at $t = ts \pm 0.05$, $V = y \pm H/2$ to a 10-cornered unweighted mask with corners at $t = ts \pm 1/16$, $ts \pm 0.05$, $ts \pm 3/32$, $V = y \pm H/2$, $k \pm H \cdot 0.4$, y is near VCmid, VCup or VClow (vertically floating, as in D2.2). H is max(EHmin, Eye Amplitude * $10^{-(VECmax/20)}$). Eye Amplitude is AVup, AVmid or AVlow, as today.

This simple scalable method gives VEC results 0.5 to 1 dB more optimistic than the unweighted rectangular mask. It can remain as the EH and VEC limits are revised in the light of experience.

Response Response Status **U**

REJECT.

The task force has previously considered substantively similar comments.

This comment is a restatement of Draft 2.2 Comment #101 (which was a restatement of D2.1 #106 and D2.0 #180), which were rejected on the basis of lack of consensus. A set of two straw polls demonstrated strong consensus to retain the measurement method in D2.2, which is unchanged in D2.3.

The responses may be found in the following comment resolution reports:

https://www.ieee802.org/3/ck/comments/draft2p2/8023ck_D2p2_final_closedcomments_sortedByNumber.pdf

https://www.ieee802.org/3/ck/comments/draft2p1/8023ck_D2p1_final_closedcomments.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: Clause, Subclause, page, line

https://www.ieee802.org/3/ck/comments/draft2p0/8023ck_D2p0_final_closedcomments_sortedByNumber.pdf

CI **120G** SC **120G.5.2** P **277** L **6** # **36**

Dawe, Piers

Nvidia

Comment Type **TR** Comment Status **R** EO method

D2.2 comment 95: the Gaussian weighting has the effect of destroying the histogram width, allowing bad fast eyes to pass, while giving the false impression that the histogram width still applies. With a weighting standard deviation of 0.02 UI, the eye height is measured at around +/-0.035 UI rather than the +/-0.05 UI in the previous draft - depending on eye shape. Compare 120E with ESMW of 0.2 or 0.22 UI, and TDECQ with histograms extending twice as wide, to +/-0.07 UI.

This weighting is equivalent to relaxing the VEC spec by 1.5 to 2 dB - but it depends on the eye shape, it weakens the spec most for the worst-shaped eyes, which is bad. It applies a worse BER criterion than the 1e-5 intended.

SuggestedRemedy

Remove the Gaussian weighting and set the eye height and VEC limits (which need revision anyway) appropriately. ghiasi_3ck_01_0721 which was not given the presentation time it deserved says that the minimum eye height in particular needs to be reduced for TP1 and TP4 far end.

Response Response Status **U**

REJECT.

The task force has previously considered substantively similar comments.

This comment is a restatement of comment Draft 2.2 #95, which was rejected on the basis of lack of consensus. A set of two straw polls demonstrated strong consensus to retain the measurement method in D2.2, which is unchanged in D2.3.

The responses may be found in the following comment resolution reports:

https://www.ieee802.org/3/ck/comments/draft2p2/8023ck_D2p2_final_closedcomments_sortedByNumber.pdf

CI **120G**SC **120G.5.2**

Page 11 of 17

2021-11-25 1:53:33 PM

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

Cl 120G SC 120G.5.3 P 277 L 39 # 37

Dawe, Piers Nvidia
 Comment Type T Comment Status R SSV

As D2.2 comment 69 says, "Setting Nv to 200 may overestimate the amplitude that the receiver will actually see since that amplitude will only be realized when Nv consecutive identical symbols are transmitted", which is extremely unlikely. Remember the SONET CID pattern has a run of "only" 60 UI or so.

SuggestedRemedy

Reduce Nv to a value that represents a reasonably rare event, not a blue moon.

Response Response Status C

REJECT.

The value of 200 is preferred since this is the value used for CR host output and the C2M host output will have similar characteristics.

The suggested remedy does not contain sufficient detail so that the task force can understand the specific changes that satisfy the comment.

Cl 161 SC 161.5.2.6.2 P 137 L 7 # 16

Dawe, Piers Nvidia
 Comment Type T Comment Status R tx_scrambled

Something called "tx_scrambled" appears without explanation. According to the text it is 257 bits long (but what is it?), according to Fig 161-3 it's 2 RS symbols or 20 bits, according to Fig 161-4 it's 35x257 or 40x257 bits, according to Fig 161-5 it's 257 bits (but this figure is only illustrative and doesn't define what the bits are).

SuggestedRemedy

Provide the missing information and make changes to address the inconsistencies. If it is the result of 161.5.2.5 64B/66B to 256B/257B transcoder, say so in 161.5.2.5. Make the appropriate changes to figures 3 and 4.

Response Response Status C

REJECT.

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

tx_scrambled is the output of the transcoder and its definition in the base document is referenced in 161.5.2.5. Both the text and the figures are correct as written.

The proposed change does not improve the accuracy of the text in consideration.

However, this comment points out a case where some improvement in clarity might be helpful, so the commenter is encouraged to resubmit at Sponsor ballot.

Cl 161 SC 161.5.3.4 P 141 L 11 # 9

Han, RuiBo China Mobile Communication Co., Ltd.
 Comment Type E Comment Status R missing subclause

as in 119.2.5.4

SuggestedRemedy

It seems that there is no such clause "119.2.5.4".

Response Response Status C

REJECT.

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

The 802.3ck draft is an amendment to the base standard. Subclause 119.2.5.4 may be found in the currently published base standard 802.3-2018 or in the new revision of the base standard 802.3dc Draft 2.1.

Cl 161 SC 161.5.3.6 P 141 L 23 # 10

Han, RuiBo China Mobile Communication Co., Ltd.
 Comment Type E Comment Status R missing subclause

as in 91.5.3.5

SuggestedRemedy

It seems that there is no such clause "91.5.3.5"

Response Response Status C

REJECT.

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

The 802.3ck draft is an amendment to the base standard. Subclause 91.5.3.5 may be found in the currently published base standard 802.3-2018 or in the new revision of the base standard 802.3dc Draft 2.1.

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

Cl 162 SC 162.9.3 P 166 L 24 # 4
 Mellitz, Richard Samtec
 Comment Type T Comment Status D AC CM voltage

The use of peak to peak is need to comprehend the actual CM histogram and comprehensive meaning for the rms measurement. Adjustment for crest factor would 'level the playing field' for histogram difference for the rms measurements.

SuggestedRemedy

Change
 AC common-mode RMS voltage, v_cmi (max)

To
 AC common-mode RMS voltage adjusted, v_cmia (max)
 where
 $v_cmia = v_cmi/CFA$
 $CFA = V_CMMP/(V_cmi*2*\sqrt{2})$

Proposed Response REJECT. Response Status Z

This comment was WITHDRAWN by the commenter.

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

Cl 162 SC 162.9.3.1.2 P 169 L 1 # 17
 Dawe, Piers Nvidia
 Comment Type T Comment Status R LF PPR

Table 162-10 says "Linear fit pulse peak ratio" and refers to this subclause whose title is "Steady-state voltage and linear fit pulse peak", and does not say what "pulse peak ratio" means. Nor does 162.9.3.1.1.

SuggestedRemedy

Change the title to "Steady-state voltage and linear fit pulse peak ratio". Define linear fit pulse peak ratio.

Response REJECT. Response Status C

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

The method for defining the linear fit pulse peak ratio is not defined. The title should be corrected to list "linear fit pulse peak ratio", rather than "linear fit pulse peak".

However, since the heading nor the linear fit pulse peak ratio was substantively modified in D2.3, this comment is out of scope.

No changes in regard to this comment at this time. However, this concern should be considered in the SA Ballot cycle.

Cl 162 SC 162.9.4.3.3 P 176 L 21 # 18
 Dawe, Piers Nvidia
 Comment Type E Comment Status R formatting

Q (the function)

SuggestedRemedy

should be upright, not italic

Response REJECT. Response Status C

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

Function Q should be normal font according to the style guide.

However, this is not critical to address at this time and can be addressed in SA Ballot.

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

Cl 162 SC 162.11.6 P 185 L 28 # 19

Dawe, Piers

Nvidia

Comment Type TR Comment Status R CA RLCC

As in previous comments: this common mode return loss spec RLcc becomes useless at the frequency when the MCB loss is 1.8/2 dB, which is only 8.5 GHz. We need a common mode return loss spec to stop large common-mode voltages building up through multiple low-loss reflections. This proposal is more relaxed at low frequencies than previous proposals

SuggestedRemedy

Use a frequency-dependent mask 1.6 dB $0.5 \leq f \leq 2$ GHz, $1.4 + 0.1 * f$ dB $2 < f \leq 30$ GHz. f is in GHz. Similarly for Tx, Table 162-11, 162.9.3.6.

Response Response Status U

REJECT.

The task force has previously considered substantively similar comments.

This comment is a restatement of comments Draft 2.1 #79 and Draft 2.2 #89.

Both were rejected on the basis of no consensus to make the proposed changes.

The responses may be found in the following comment resolution reports:

https://www.ieee802.org/3/ck/comments/draft2p2/8023ck_D2p2_final_closedcomments_sortedByNumber.pdf

https://www.ieee802.org/3/ck/comments/draft2p1/8023ck_D2p1_final_closedcomments.pdf

The comment does not provide sufficient evidence to support the proposed remedy.

Cl 162 SC 162.11.7.1.1 P 188 L 9 # 20

Dawe, Piers

Nvidia

Comment Type E Comment Status R formatting

t

SuggestedRemedy

tau

Response Response Status C

REJECT.

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

The symbol font type was lost in the last draft, likely due to an update in formatting to the table.

The font type should be changed back to symbol font so that "t" appears as "tau".

This would not a substantive change as it only fixing a character font error that occurred when implementing Draft 2.1 and could be deferred to SA ballot.

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

Cl 162A SC 162A P 284 L 9 # 38

Dawe, Piers

Nvidia

Comment Type E Comment Status R annex title

I wondered why 162.9.3 was referring to an annex whose title seemed to be nothing to do with the subject...

The title of this annex is "TP0 and TP5 test point parameters and channel characteristics ..." yet it contains recommended transmitter and receiver characteristics, which aren't mentioned in 162A.1 Overview, "This annex provides information on..." either. I don't recognise "test point parameters" as including transmitter IC recommendations.

SuggestedRemedy

Revise the title and overview. e.g. change:
TP0 and TP5 test point parameters and channel characteristics for 100GBASE-CR1, 200GBASE-CR2, and 400GBASE-CR4
to:

Transmitter, receiver and channel recommendations at test points TP0 and TP5 for 100GBASE-CR1, 200GBASE-CR2, and 400GBASE-CR4

Response Response Status C

REJECT.

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

Although the annex title could be improved to be more inclusive of the annex contents it is sufficient as written. The proposed change does not improve the accuracy of the draft.

Cl 162C SC 162C.1 P 303 L 14 # 39

Dawe, Piers

Nvidia

Comment Type E Comment Status R MDI pin table

The commonality between QSFP112 and QSFP-DD800 is obscured because the OSFP column is between them.

SuggestedRemedy

Move the OSFP information so that QSFP112 and QSFP-DD800 are in adjacent columns, as SFP112 and SFP-DD112 are

Response Response Status C

REJECT.

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

The comment requests a change to the table to more easily make a comparison between two different MDI types.

The proposed change does not improve the accuracy of the draft.

Cl 163 SC 163.9.2 P 203 L 43 # 2

Wu, Mau-Lin

MediaTek Inc.

Comment Type T Comment Status R AC CM voltage

The value of SCMR (min) as 16 dB is too large. One contribution, wu_3ck_01_1121, is submitted to provided detailed information.

SuggestedRemedy

Change 16 dB to 13 dB

Response Response Status C

REJECT.

The following presentation was reviewed by the task force:
https://www.ieee802.org/3/ck/public/21_11/wu_3ck_01_1121.pdf

Further analysis and/or measurement results are required.

There is no consensus to implement the proposed change.

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

CI 163 SC 163.9.2.7 P 207 L 8 # 3
 Mellitz, Richard Samtec
 Comment Type T Comment Status D AC CM voltage

SCMR seems to be specified as if V_CMPP was periodic sine wave. If it were based on Gaussian CM noise then 16 dB (SCMR) would correspond to a rms of 6.3285 mV for clause 163.9.3 and 5.5185 mV for annex 120F.3.1. If based on a CM sine wave, 16 dB would correspond to 16.6422 mV rms which seems reasonable and consistent with older drafts. Thus it seems the 16 dB was based on a sine wave. The use of peak to peak is need to comprehend the actual CM histogram. Adjustment for crest factor would 'level the playing field' for histogram difference.

This comment impacts clause 163.9.3 and Annex 120F.3.1 but does change the section's text.

SuggestedRemedy

Change line:
 The peak-to-peak AC common mode voltage is defined as the AC common-mode voltage (see 93.8.1.3) range measured at TPOv that includes all except 1e-4 of the measured distribution, from 0.00005 to 0.99995 of the cumulative distribution.

To:
 The peak-to-peak AC common mode voltage is defined as the AC common-mode voltage (see 93.8.1.3) range measured at TPOv that includes all except 1e-4 of the measured distribution, from 0.00005 to 0.99995 of the cumulative distribution and is adjusted by a crest factor. The crest factor adjustment (CFA) is computed from the rms of the AC common mode voltage, V_cmi, and the peak-to-peak AC common mode voltage.

Proposed Response Response Status Z
 REJECT.

This comment was WITHDRAWN by the commenter.

CI 163 SC 163.9.2.7 P 207 L 11 # 1
 Wu, Mau-Lin MediaTek Inc.
 Comment Type T Comment Status R AC CM voltage

The specification for SCMR (min) is defined in Table 163-5, instead of Table 163-11.

SuggestedRemedy

Change Table 163-11 to Table 163-5

Response Response Status C
 REJECT.

The comment points out an editorial error that occurred when implementing D2.2 comment #59. The transmitter SCMR is indeed specified in Table 163-5, not Table 163-11. Although the table reference is incorrect, the SCMR is provided correctly in the Table 163-5 "Transmitter Characteristics".

This change is an improvement to the draft so the commenter is encouraged to resubmit during SA ballot.

There is no consensus to make the proposed change at this time.

No changes to the draft.

CI 163A SC 163A P 316 L 1 # 40
 Dawe, Piers Nvidia
 Comment Type E Comment Status R editorial instruction
 annex Annex

SuggestedRemedy
 delete "annex"

Response Response Status C
 REJECT.

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

The word "annex" is necessary, but should be plural. See line 1, page 284. This is not a substantive change as it would involve correction of a minor grammar error in an editorial instruction.

This is not critical to address at this time and can be addressed in SA Ballot.

302.3ck D2.3 100/200/400 Gb/s Electrical Interfaces Task Force 3rd Working Group recirculation ballot co

Cl 163A SC 163A.3.1.2 P 318 L 41 # 41

Dawe, Piers Nvidia

Comment Type E Comment Status R ERL reference value

Response to D2.2 comment 134 says "Change the text to "The reference ERL value is determined using the method in 93A.5...", yet the text says "The reference ERL value is determined from the reference PTDR response using the method in 93A.5"

SuggestedRemedy

As the PDTR response is not an input to 93A.5 as used for a reference ERL, but an intermediate step in a calculation - delete "from the reference PTDR response"

Response Response Status C

REJECT.

The commenter correctly identifies an implementation of D2.2 Comment #134 that did not match the response.

However, the sentence is not incorrect as written, thus it is not necessary to change the sentence at this time.

Cl 163A SC 163A.3.1.3 P 319 L 24 # 42

Dawe, Piers Nvidia

Comment Type E Comment Status R equation order

Eq 163A-5 is part of step b, and Eq 163A-4 is part of step c, which must follow b.

SuggestedRemedy

Swap equations 163A-5 and 4

Response Response Status C

REJECT.

This comment does not apply to the substantive changes between IEEE P802.3ck D2.3 and D2.2 or the unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

The proposed change does not improve the clarity or accuracy of the text in consideration.