Cl **FM**　　*SC* **FM**　　　　　*P* **8**　　　*L* **14**　　　*#* 1

Dawe, Piers　　　　　　　　　　Nvidia

Comment Type **E**　　*Comment Status* **R**

Clauses

SuggestedRemedy

clauses

Response　　　　　　　*Response Status* **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

It would be an improvement to change "Clauses" to "clauses", however it is not critical to address at this time.

The commenter is encouraged to resubmit this comment during SA Ballot.

No consensus to make a change at this time.

Cl **00**　　*SC* **0**　　　　　*P* **14**　　　*L* **51**　　　*#* 2

Dawe, Piers　　　　　　　　　　Nvidia

Comment Type **E**　　*Comment Status* **R**

EEE

SuggestedRemedy

IEEE

Response　　　　　　　*Response Status* **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

It would be an improvement to change "EEE" to "IEEE" as proposed, however it is not critical to address at this time.

The commenter is encouraged to resubmit this comment during SA Ballot.

No consensus to make a change.

Cl **116**　　*SC* **116.2.4**　　　　*P* **37**　　　*L* **41**　　　*#* 3

Dawe, Piers　　　　　　　　　　Nvidia

Comment Type **T**　　*Comment Status* **R**

The PMA provides a medium-independent means for the PCS to support the use of a range of physical media - not for this ZR PMA

SuggestedRemedy

Change:
The PMA provides a medium-independent means for the PCS to support the use of a range of physical media.
For 200GBASE-R and 400GBASE-R, the PMAs...
to
For 200GBASE-R and 400GBASE-R, the PMA provides a medium-independent means for the PCS to support the use of a range of physical media. These PMAs...

Response　　　　　　　*Response Status* **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

No consensus to make a change.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general　　　　　*Cl* **116**　　　　Page 1 of 8
COMMENT STATUS: D/dispatched A/accepted R/rejected　　RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn　　*SC* **116.2.4**　　　12/13/2023 10:10:00 A
SORT ORDER: Clause, Subclause, page, line

Cl **156**   *SC* **156.7.1**   *P* **98**   *L* **27**   # 4

Dawe, Piers   Nvidia

Comment Type   **T**   *Comment Status*   **R**

Laser frequency noise *mask* - we limit the parameter by the mask (as in transmit spectrum above) - the description entry here should not say "mask".

SuggestedRemedy

Here, in Table 156-1 and the title of 156.9.5, change "Laser frequency noise mask" to "Laser frequency noise".
In 156.9.5, add a new first sentence: The laser frequency noise shall be below the laser frequency noise mask defined in this subclause.

Response   *Response Status*   **C**

REJECT.

This is a restatement of unsatisfied comment #2331.

See https://www.ieee802.org/3/cw/comments/D2p5/8023cw_D2p5_comments_final_unsatisfied _by_ID.pdf.

The CRG encouraged contributions related to laser frequency noise but none have been received. The CRG previously had no consensus to make a change. No new information has been provided.

No consensus to make a change.

Cl **156**   *SC* **156.7.1**   *P* **98**   *L* **38**   # 5

Dawe, Piers   Nvidia

Comment Type   **TR**   *Comment Status*   **R**

This says "I-Q amplitude imbalance (mean)" with a spec of 1 dB and no tolerance. That is impossible to meet.

SuggestedRemedy

Change "I-Q amplitude imbalance (mean)" to "Mean I-Q amplitude imbalance (max)" as in 400ZR and similar to "Mean I-Q offset per polarization" just above. In 156.9.13?, change "I-Q amplitude imbalance (mean)" to "Mean I-Q amplitude imbalance", twice.

Response   *Response Status*   **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

It might be an improvement to make the changes as proposed, however is not critical to address at this time.

The commentor is invited to resubmit this comment during SA Ballot.

No consensus to make a change.

Cl **156**   *SC* **156.8**   *P* **98**   *L* **35**   # 6

Dawe, Piers   Nvidia

Comment Type   **T**   *Comment Status*   **R**

Still one square bracket too many: see D2.5 comment 1 and 18, and maniloff_3cw_01_230925

SuggestedRemedy

Change double square brackets to single

Response   *Response Status*   **C**

REJECT.

While the formula is not identical to what is shown in https://www.ieee802.org/3/cw/public/23_0925/maniloff_3cw_01_230925.pdf, it is accurate and no changes are required.

If the commentor feels the formula can be improved they are invited to submit a comment during SA Ballot.

No consensus to make a change.

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

Cl **156**
SC **156.8**

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12/13/2023 10:10:01 A

Cl **156**　　*SC* **156.8**　　　　　　*P* **102**　　*L* **7**　　　　# 7

Dawe, Piers　　　　　　　　　　　Nvidia

Comment Type **E**　　*Comment Status* **R**

Inconsistent and unusual way of presenting units

SuggestedRemedy

Change header row to:
Frequency offset (GHz)　Isolation (dB)
Delete "GHz from body, delete third row

Response　　　　　　*Response Status* **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

No consensus to make a change.

Cl **156**　　*SC* **156.8**　　　　　　*P* **102**　　*L* **34**　　　　# 8

Dawe, Piers　　　　　　　　　　　Nvidia

Comment Type **ER**　　*Comment Status* **R**

Figure is a bitmap - compare Fig 156-7

SuggestedRemedy

Re-insert the figure the proper way, document the method in
https://ieee802.org/3/WG_tools/editorial/

Response　　　　　　*Response Status* **C**

REJECT.

The quality of the figure can be improved, it not critical to address at this time.

The commenter is encouraged to resubmit this comment during SA Ballot.

No consensus to make a change.

Cl **156**　　*SC* **156.8**　　　　　　*P* **102**　　*L* **40**　　　　# 9

Dawe, Piers　　　　　　　　　　　Nvidia

Comment Type **E**　　*Comment Status* **R**

There's a standard way to indicate which side of a line one should be, set up years ago.

SuggestedRemedy

In Figure 156-6, add "Meets equation constraints". In Figure 156-7, change "Compliant region" to "Meets equation constraints"

Response　　　　　　*Response Status* **C**

REJECT.

Figure 156-7 did not have any substantive changes between IEEE P802.3cw D2.5 and D2.6 or have any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

In Figure 156-6 , while it might be an improvement to add "Meets equation constraints" as proposed, however it is not critical to address at this time.

No consensus to make a change.

Cl **156**　　*SC* **156.9.1**　　　　　*P* **104**　　*L* **24**　　　　# 10

Dawe, Piers　　　　　　　　　　　Nvidia

Comment Type **TR**　　*Comment Status* **R**

The information in this table footnote should be in 156.9.26 and 156.9.30 (and possibly Transmit spectrum 156.9.4), not here under an index table.

SuggestedRemedy

Delete this footnote. Ensure the information is given in 156.9.26, 156.9.30.

Response　　　　　　*Response Status* **C**

REJECT.

This comment is a restatement of D2.5 comment #15 where the CRG decided to retain the footnote with improved wording.

See
https://www.ieee802.org/3/cw/comments/D2p5/8023cw_D2p5_comments_final_by_ID.pdf.

This comment does not provide substantive additional rationale for the proposed change.

No consensus to make a change

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

Cl **156**
SC **156.9.1**

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Cl **156**   *SC* **156.9.4**   *P* **104**   *L* **40**   # 11

Dawe, Piers   Nvidia

Comment Type **TR**   *Comment Status* **R**

This says "The normalized transmit spectrum shall be within the limits of this subclause if measured per IEC 61280-1-3. As far as I know, IEC 61280-1-3 does not use the word "normalized".

SuggestedRemedy

Rewrite the definition to align with the terminology in IEC 61280-1-3 or define what is meant by "normalized".

Response   *Response Status* **U**

REJECT.

This comment is a follow-on to D2.5 comment #14 where the CRG decided to add "normalized" in 2 places.

See https://www.ieee802.org/3/cw/comments/D2p5/8023cw_D2p5_comments_final_by_ID.pdf.

The proposed change does not contain sufficient detail so that the CRG can understand the specific changes required to satisfy the comment.

No consensus to make a change.

Cl **156**   *SC* **156.9.4**   *P* **105**   *L* **21**   # 12

Dawe, Piers   Nvidia

Comment Type **E**   *Comment Status* **R**

Upper Mask, Lower Mask, Compliant Region

SuggestedRemedy

Upper mask, Lower mask, Meets equation constraints

Response   *Response Status* **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

While it might be an improvement to change "Upper Mask" to "Upper mask" and "Lower Mask" to "Lower mask" as proposed, however it not critical to address at this time.

No consensus to make a change.

Cl **156**   *SC* **156.9.5**   *P* **105**   *L* **48**   # 13

Dawe, Piers   Nvidia

Comment Type **TR**   *Comment Status* **R**

"frequency noise" is still undefined - this has been a known issue for a long time. According to its units, it cannot be a power spectral density.

SuggestedRemedy

See previous comments.

Response   *Response Status* **U**

REJECT.

This issue has been disussed in previous comments including unsatisfied #249 and there was no consensus to make a change.

See https://www.ieee802.org/3/cw/comments/D2p5/8023cw_D2p5_comments_final_unsatisfied_by_ID.pdf.

The proposed change does not contain sufficient detail so that the CRG can understand the specific changes required to satisfy the comment.

No consensus to make a change.

Cl **156**   *SC* **156.9.6**   *P* **106**   *L* **54**   # 14

Dawe, Piers   Nvidia

Comment Type **T**   *Comment Status* **R**

limits

SuggestedRemedy

limit (max, it's unsigned)

Response   *Response Status* **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

It might be an improvement to change "limits" to "limit" as proposed, however is not critical to address at this time.

The commenter is invited to resubmit this comment during SA Ballot.

No consensus to make a change.

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

Cl **156**
SC **156.9.6**

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Cl **156**   *SC* **156.9.7**   *P* **107**   *L* **4**   # 15

Dawe, Piers   Nvidia

Comment Type   **T**   *Comment Status* **R**

limits

SuggestedRemedy

limit (max, it's unsigned)

Response   *Response Status*   **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

It might be an improvement to change "limits" to "limit" as proposed, however is not critical to address at this time.

The commenter is invited to resubmit this comment during SA Ballot.

No consensus to make a change.

Cl **156**   *SC* **156.9.9**   *P* **107**   *L* **19**   # 17

Dawe, Piers   Nvidia

Comment Type   **T**   *Comment Status* **R**

limits

SuggestedRemedy

limit (it's a single max)

Response   *Response Status*   **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

It might be an improvement to change "limits" to "limit" as proposed, however is not critical to address at this time.

The commenter is invited to resubmit this comment during SA Ballot.

No consensus to make a change.

Cl **156**   *SC* **156.9.8**   *P* **107**   *L* **9**   # 16

Dawe, Piers   Nvidia

Comment Type   **T**   *Comment Status* **R**

limits

SuggestedRemedy

limit (max, it's unsigned)

Response   *Response Status*   **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

It might be an improvement to change "limits" to "limit" as proposed, however is not critical to address at this time.

The commenter is invited to resubmit this comment during SA Ballot.

No consensus to make a change.

Cl **156**   *SC* **156.9.10**   *P* **107**   *L* **26**   # 18

Dawe, Piers   Nvidia

Comment Type   **T**   *Comment Status* **R**

limits

SuggestedRemedy

limit (it's a single max). Same in 156.9.11.

Response   *Response Status*   **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

It might be an improvement to change "limits" to "limit" as proposed, however is not critical to address at this time.

The commenter is invited to resubmit this comment during SA Ballot.

No consensus to make a change.

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Cl* **156**   Page 5 of 8
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   *SC* **156.9.10**   12/13/2023 10:10:01 A
SORT ORDER: Clause, Subclause, page, line

Cl **156**   *SC* **156.9.10**   *P* **107**   *L* **28**   # 19

Dawe, Piers   Nvidia

Comment Type   **E**   *Comment Status*   **R**

Base of log should be a subscript. Same in 156.9.11.

SuggestedRemedy

Response   *Response Status*   **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

It would be an improvement to change the base of log to a subscript, however it is not critical to address at this time.

The commenter is encouraged to resubmit a comment during SA Ballot.

No consensus to make a change at this time.

Cl **156**   *SC* **156.9.10**   *P* **107**   *L* **28**   # 20

Dawe, Piers   Nvidia

Comment Type   **TR**   *Comment Status*   **R**

Imean and Qmean are not defined. Same issue in 156.9.11. Note 156.10.2.5 I-Q offset compensation, so these could be obtained from the EVM method, as 400ZR says.

SuggestedRemedy

Define Imean and Qmean and Psignal, e.g. in the EVM section, and cross-reference from here.

Response   *Response Status*   **U**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

No consensus to make a change.

Cl **156**   *SC* **156.9.10**   *P* **107**   *L* **28**   # 21

Dawe, Piers   Nvidia

Comment Type   **T**   *Comment Status*   **R**

Measurement interval would be the distance in time between measurement windows. 400ZR says "averaging period"

SuggestedRemedy

Change "measurement interval" to "measurement window for averaging".

Response   *Response Status*   **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

No consensus to make a change.

Cl **156**   *SC* **156.9.12**   *P* **107**   *L* **39**   # 22

Dawe, Piers   Nvidia

Comment Type   **T**   *Comment Status*   **R**

limits

SuggestedRemedy

limit (it's a single max)

Response   *Response Status*   **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

It might be an improvement to change "limits" to "limit" as proposed, however is not critical to address at this time.

The commenter is invited to resubmit this comment during SA Ballot.

No consensus to make a change.

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

Cl **156**
SC **156.9.12**

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Cl **156**   *SC* **156.9.13**   *P* **107**   *L* **43**   # 25

Dawe, Piers   Nvidia

Comment Type   **TR**   *Comment Status*   **R**

"The I-Q phase error magnitude (max) is the *largest* phase difference of the in-phase component I and quadrature component Q of the signal" [not -90 degrees!]

SuggestedRemedy

Define "largest phase difference".

Response   *Response Status*   **U**

REJECT.

This issue was previously discussed in D2.5 unsatisfied comment #8 and the CRG decided the proposed change did not contain sufficient detail to understand the specific changes required to satisfy the comment and no changes were made to the draft.

See https://www.ieee802.org/3/cw/comments/D2p5/8023cw_D2p5_comments_final_unsatisfied _by_ID.pdf.

The proposed change does not contain sufficient detail so that the CRG can understand the specific changes required to satisfy the comment.

No consensus to make a change.

Cl **156**   *SC* **156.9.13**   *P* **107**   *L* **43**   # 30

Dawe, Piers   Nvidia

Comment Type   **TR**   *Comment Status*   **R**

"phase difference ... measured relative to *local oscillator*" - seems wrong.

SuggestedRemedy

Delete "measured relative to local oscillator"

Response   *Response Status*   **C**

REJECT.

This issue was previously discussed in D2.5 unsatisfied comment #9 and the CRG decided it was not critical to address at this time and the commenter was encouraged to resubmit a comment during SA Ballot.

See https://www.ieee802.org/3/cw/comments/D2p5/8023cw_D2p5_comments_final_unsatisfied _by_ID.pdf.

The commenter is encouraged again to resubmit a comment during SA Ballot.

No consensus to make a change at this time.

Cl **156**   *SC* **156.9.13**   *P* **107**   *L* **44**   # 23

Dawe, Piers   Nvidia

Comment Type   **T**   *Comment Status*   **R**

limits

SuggestedRemedy

limit (it's a single max)

Response   *Response Status*   **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

It might be an improvement to change "limits" to "limit" as proposed, however is not critical to address at this time.

The commenter is invited to resubmit this comment during SA Ballot.

No consensus to make a change.

Cl **156**   *SC* **156.9.14**   *P* **107**   *L* **49**   # 26

Dawe, Piers   Nvidia

Comment Type   **TR**   *Comment Status*   **R**

The I-Q quadrature skew is the *maximum* relative skew

SuggestedRemedy

Define "maximum skew"

Response   *Response Status*   **U**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

No consensus to make a change.

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

Cl **156**
SC **156.9.14**

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12/13/2023 10:10:01 A

Cl **156**   *SC* **156.9.14**   *P* **107**   *L* **49**   # 27

Dawe, Piers   Nvidia

Comment Type   **TR**   *Comment Status*   **R**

"The I-Q quadrature skew is the maximum *relative* skew": tautology.

SuggestedRemedy

Delete "relative", or change "relative skew" to "timing offset"

Response   *Response Status*   **U**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

No consensus to make a change.

Cl **156**   *SC* **156.9.14**   *P* **107**   *L* **50**   # 24

Dawe, Piers   Nvidia

Comment Type   **T**   *Comment Status*   **R**

limits

SuggestedRemedy

limit (it's a single max)

Response   *Response Status*   **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

It might be an improvement to change "limits" to "limit" as proposed, however is not critical to address at this time.

The commenter is invited to resubmit this comment during SA Ballot.

No consensus to make a change.

Cl **156**   *SC* **156.9.14**   *P* **107**   *L* **50**   # 28

Dawe, Piers   Nvidia

Comment Type   **T**   *Comment Status*   **R**

limits

SuggestedRemedy

limit (it's a single max)

Response   *Response Status*   **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

It might be an improvement to change "limits" to "limit" as proposed, however is not critical to address at this time.

The commenter is invited to resubmit this comment during SA Ballot.

No consensus to make a change.

Cl **156**   *SC* **156.10.2.1**   *P* **112**   *L* **3**   # 29

Dawe, Piers   Nvidia

Comment Type   **E**   *Comment Status*   **R**

4

SuggestedRemedy

four

Response   *Response Status*   **C**

REJECT.

This comment does not apply to substantive changes between IEEE P802.3cw D2.5 and D2.6 or any unsatisfied negative comments from previous drafts. Hence it is not within the scope of the recirculation ballot.

It would be an improvement to change "4" to "four", however it is not critical to address at this time.

The commenter is encouraged to resubmit a comment during SA Ballot.

No consensus to make a change at this time.

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

Cl **156**
SC **156.10.2.1**

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