Cl **176D** *SC* **176D.3.3** *P* **678** *L* **12** # 176

Hidaka, Yasuo — Credo Semiconductor, Inc.

Comment Type **TR** *Comment Status* **D** *Tx jitter*

J4u03 for Tx package Class A is specified as 0.118 UI that is same as annex 120F.3.1. Since the loss to the measurement point is higher than annex 120F, we need to relax the jitter spec value to take account of larger measurement errors due to higher insertion loss or improve the jitter measurement methodology, for example by UPOJ in calvin_3dj_01b_2407.

SuggestedRemedy

Relax J4u03 for Tx package Class A to 0.153 UI and for Tx package Class B to 0.156 UI, or extend and apply UPOJ method in calvin_3dj_01b_2407 to J4u03.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **176E** *SC* **176E..4.3** *P* **698** *L* **20** # 322

Calvin, John — Keysight Technologies

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

The advances to JNU operations to make them functional at the end of a 33dB channel have made these operations increasingly insensitive to noise/interference and in particular bounded uncorrelated noise BUN, which emerges from FEXT. The Sigma-n parameter from SNDR only exposes noise on longer run lengths of transitions and doesn't classify BUN either. The task force has done well to harmonize CR and C2M measurement methods, but we feel the elimination of a post reference equalized eye height operation is an oversight, and VEC (targeting 12dB) should be returned to Table 176E-1.

SuggestedRemedy

An updated contiribution from July's task force meeting: https://www.ieee802.org/3/dj/public/24_07/calvin_3dj_02a_2407.pdf should be re-visited with updated content and a poll presented to the task force to determine a concensus. If there is a consensus, to return VEC to TP1a, the suggested next step would be to add a VEC field to Table 176E-1 at around line 20 to re-establish this (only for C2M) with a target spec value of 12dB.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **176E** *SC* **176E.4.3** *P* **698** *L* **5** # 571

Dawe, Piers — Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket1p), VEC*

Several inappropriate backplane-style "micro-managing" many-quotas spec items have appeared that are wasteful and unnecessary diagnostics, and some are not feasible with the losses allowed in C2M with reasonable reflections. This is not the way to specify an observable signal. See other comments noting the impracticality of the 120D style jitter measurement method for this project. See dawe_3dj_01a_2406, calvin_3dj_02a_2407 and successor.

SuggestedRemedy

Remove vf (min), Rpeak, SNDR, SNR_ISI and output jitter. Add a VEC-like, TDECQ-like spec, which can be measured in a scope using the COM reference receiver parameters from Table 176E-12. The VEC limit is derived from the COM table too.
Remove RLM; I think it was for 120E we decided we didn't need a separate eye linearity spec.
Add an eye height spec based on the same measurement.
Note that because of instrument noise, VEC and EH (like SNDR) should not be measured on small signals, but on nominal-minimum signals before any training process has reduced them ("presets").
Apply to C2M throughout 176E.
Another comment proposes the same approach for 179, CR.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **176E** *SC* **176E.4.3** *P* **698** *L* **22** # 116

Ghiasi, Ali — Ghiasi Quantum/Marvell

Comment Type **TR** *Comment Status* **D** *(bucket1p), VEC*

Transmitter jitter specifications is ineffective and. Not sensitive for farend TP1a specifications as was demonstrted by Rysin_3dj_01_2407.pdf
It makes no sense to use transmit jitter at TP1a when TP1a is actually at receiver pin, and what receiver care about is VEO, VEC, and possibly EW.

SuggestedRemedy

Replace Ouput jitter and SNDR with, see ghiasi_01_2407
VEO=8 mV
VEC=10.7 dB
If you want jitter then we should consider adding EW.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **176E** *SC* **176E.4.3** *P* **698** *L* **22** # 179

Rysin, Alexander NVIDIA

Comment Type **TR** *Comment Status* **D** *(bucket1p), Tx jitter*

J3u and JRMS measurements at TP1a are highly affected by the effects of slew rate and noise and do not reflect actual uncorrelated jitter. These effects are exacerbated by the characteristics of practical channels between TP0d and TP1a - loss and reflections, and are highly dependent on the transmitted signal amplitude. Accounting only for the faster edges does not work for practical channels at 106.25 Gbd rate and the currently proposed numbers cannot be met (and sometimes cannot be measured) even with commercial test equipment PPG. The issue was demonstrated in rysin_3dj_01a_2407.

SuggestedRemedy

Other method of uncorrelated jitter measurement should be considered.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **176E** *SC* **176E.4.3** *P* **698** *L* **23** # 178

Hidaka, Yasuo Credo Semiconductor, Inc.

Comment Type **TR** *Comment Status* **D** *Tx jitter*

J4u03 at TP1a is specified as 0.135UI. Although this may be consistent with 0.118 UI at TP4, it does not take account of the higher insertion loss to the measurement point than annex 120F. To take account of larger measurement errors due to higher insertion loss, we need to relax the jitter spec value or improve the jitter measurement methodology, for example by UPOJ in calvin_3dj_01b_2407.

SuggestedRemedy

Relax J4u03 at TP1a to 0.178 UI, or extend and apply UPOJ method in calvin_3dj_01b_2407 to J4u03.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **176E** *SC* **176E.4.4** *P* **699** *L* **41** # 180

Rysin, Alexander NVIDIA

Comment Type **TR** *Comment Status* **D** *(bucket1p), Tx jitter*

J4u and JRMS measurements at TP4 are highly affected by the effects of slew rate and noise and do not reflect actual uncorrelated jitter. These effects are exacerbated by the characteristics of practical test fixtures - loss and reflections, and are highly dependent on the transmitted signal amplitude. Accounting only for the faster edges does not work for practical channels at 106.25 Gbd rate. The issue was demonstrated in rysin_3dj_01a_2407.

SuggestedRemedy

Other method of uncorrelated jitter measurement should be considered.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **176E** *SC* **176E.4.4** *P* **699** *L* **41** # 117

Ghiasi, Ali Ghiasi Quantum/Marvell

Comment Type **TR** *Comment Status* **D** *(bucket1p), VEC*

Transmitter jitter specifications is ineffective and. Not sensitive for farend TP1a specifications as was demonstrted by Rysin_3dj_01_2407.pdf
It makes no sense to use transmit jitter at TP1a when TP1a is actually at receiver pin, and what receiver care about is VEO, VEC, and possibly EW.

SuggestedRemedy

Replace Ouput jitter and SNDR with, see ghiasi_01_2407
VEO=8 mV
VEC=10.7 dB
If you want jitter then we should consider adding EW.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **176E** *SC* **176E.4.4** *P* **699** *L* **43** # 177

Hidaka, Yasuo — Credo Semiconductor, Inc.

Comment Type **TR** *Comment Status* **D** *Tx jitter*

J4u03 at TP4 is specified as 0.118 UI that is same as annex 120F.3.1.
Since the loss to the measurement point is higher than annex 120F, we need to relax the jitter spec value to take account of larger measurement errors due to higher insertion loss or improve the jitter measurement methodology, for example by UPOJ in calvin_3dj_01b_2407.

SuggestedRemedy

Relax J4u03 at TP4 to 0.153 UI, or extend and apply UPOJ method in calvin_3dj_01b_2407 to J4u03.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **176E** *SC* **176E.6** *P* **705** *L* **32** # 572

Dawe, Piers — Nvidia

Comment Type **TR** *Comment Status* **D** *cket1p), Output test diagrams*

The figures "Example host output test configuration" and "Example module output test configuration" have gone missing.

SuggestedRemedy

Reinstate them

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **176E** *SC* **176E.6.12.1** *P* **709** *L* **50** # 153

Dudek, Mike — Marvell

Comment Type **T** *Comment Status* **D** *(bucket1p)*

Incomplete sentence that needs to be completed to make the test complete

SuggestedRemedy

Add "meets the COM value in table 176E-9

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **178** *SC* **178.9.2** *P* **301** *L* **47** # 174

Hidaka, Yasuo — Credo Semiconductor, Inc.

Comment Type **TR** *Comment Status* **D** *Tx jitter*

J3u03 for Tx package Class A is specified as 0.106 UI that is same as clause 163.9.2.
Since the loss to the measurement point is higher than clause 163, we need to relax the jitter spec value to take account of larger measurement errors due to higher insertion loss or improve the jitter measurement methodology, for example by UPOJ in calvin_3dj_01b_2407.

SuggestedRemedy

Relax J3u03 for Tx package Class A to 0.138 UI and J3u03 for Tx package Class B to 0.140 UI, or extend and apply UPOJ method in calvin_3dj_01b_2407 to J3u03.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **178** *SC* **178.9.2** *P* **302** *L* **8** # 368

Ran, Adee — Cisco Systems, Inc.

Comment Type **T** *Comment Status* **D** *Tx jitter*

The editor's note addresses an assumption that measured jitter is affected by the loss to the measurement point. A contribution in July 2024, https://www.ieee802.org/3/dj/public/24_07/calvin_3dj_01b_2407.pdf, demonstrates this effect (see e.g. slide 9 showing the effect of "Slew rate"), so this should not be regarded as an "assumption" anymore.

Similar editor's notes appear in 179.9.4, 176D.3.3, and 176E.4.4.

While further work is still encouraged, the editor's notes should not question the effect.

SuggestedRemedy

In the listed editor's notes, replace "based on the assumption that that the measured jitter is affected by" with "to address the dependence of measured jitter on".

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.9.4** *P* **335** *L* **33** # 181

Rysin, Alexander NVIDIA

Comment Type **TR** *Comment Status* **D** *(bucket1p), Tx jitter*

J3u and JRMS measurements at TP2 are highly affected by the effects of slew rate and noise and do not reflect actual uncorrelated jitter. These effects are exacerbated by the characteristics of practical channels between TP0d and TP2 - loss and reflections, and are highly dependent on the transmitted signal amplitude. Accounting only for the faster edges does not work for practical channels at 106.25 Gbd rate and the currently proposed numbers cannot be met (and sometimes cannot be measured) even with commercial test equipment PPG. The issue was demonstrated in rysin_3dj_01a_2407.

SuggestedRemedy

Other method of uncorrelated jitter measurement should be considered.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.9.4** *P* **335** *L* **35** # 564

Dawe, Piers Nvidia

Comment Type **TR** *Comment Status* **D** *VEC, SNDR, jitter*

Our way of measuring jitter doesn't work well enough with the increased max host loss over 3ck: it is very sensitive to signal amplitude, loss to the point of observation, and allowed reflections, so it is very inaccurate. It is not clear that it can or should be fixed. Our way of defining SNDR doesn't work correctly over host loss either. This can be fixed, but "vertical and horizontal noise" act together to degrade BER: more of one goes with less of the other. Attempting to separate them out is diagnostics; it is not the standard's concern how a signal got to be the way it is, only whether it is good enough or not. See calvin_3dj_02a_2407 and successor.

SuggestedRemedy

Delete the SNDR and jitter specs. Add a VEC-like, TDECQ-like spec using this clause's COM reference receiver which can be implemented in a scope. Similarly for KR and C2C.
Delete SNR_ISI because it is a contributor to eye opening.
RLM is a contributor to eye opening defined right, too: see another comment.
Define VEC and Eye Height (based on the equalised scope measurement) for nominal maximum signals; don't ask the scope to resolve very small signals (same idea as SNDR being defined for the presents in Table 179-8 today, not for every possible cas).

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.9.4** *P* **335** *L* **35** # 175

Hidaka, Yasuo Credo Semiconductor, Inc.

Comment Type **TR** *Comment Status* **D** *(bucket1p), Tx jitter*

J3u03 for Host-Low is specified as 0.115 UI that is same as clause 162.9.4.
Since the loss to the measurement point is higher than clause 162, we need to relax the jitter spec value to take account of larger measurement errors due to higher insertion loss or improve the jitter measurement methodology, for example by UPOJ in calvin_3dj_01b_2407.

SuggestedRemedy

Relax J3u03 for host-low to 0.15 UI, J3u03 for host-nominal to 0.159 UI, and J3u03 for host-high to 0.166 UI, or extend and apply UPOJ method in calvin_3dj_01b_2407 to J3u03.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.9.4** *P* **335** *L* **35** # 383

Ran, Adee Cisco Systems, Inc.

Comment Type **T** *Comment Status* **D** *Tx jitter*

There is no reason to have different jitter parameters, J3u_03 for PMDs and for J4u_03 for AUIs. The peak-to-peak jitter is important at probabilities much lower than 1e-3 - the specs should really be at 1e-6 or lower. If J4u is measurable for AUI-C2M it is also measurable for a PMD.

SuggestedRemedy

Change J3u_03 to J4u_03 with appropriate change in maximum values, and update all equations accordingly. Here and in clause 178.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.9.4.3** *P* **335** *L* **20** # 578

Dawe, Piers Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket1p), VEC, RLM*

If we look at the signal at TP2 and its equalised eye rather than just hypothesising about it (see other comments), we probably don't need a separate RLM spec.

SuggestedRemedy

Delete the RLM spec and 179.9.4.2. See another comment for the holistic VEC-like, TDECQ-like spec that includes it.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.9.4.3** *P* **340** *L* **1** # 565

Dawe, Piers Nvidia

Comment Type **TR** *Comment Status* **D** *(bucket1p), VEC, SNR_ISI*

SNR_ISI is not needed as a separate spec: it is a component of eye opening. There is no need for a special Nb for this.

SuggestedRemedy

Delete the SNR_ISI section and the editor's note. See another comment for the holistic VEC-like, TDECQ-like spec that includes it.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.9.4.4** *P* **340** *L* **20** # 386

Ran, Adee Cisco Systems, Inc.

Comment Type **T** *Comment Status* **D** *AC common mode*

The common-mode measurement method is not specified in detail; It is unclear what the "measured distribution" represents. The distribution depend on the measurement method, e.g., whether or not whether the sampling is synchronous with the clock, the number of samples per UI and the sampling phase.

We should protect against having excessive noise anywhere within a UI.

SuggestedRemedy

Define the maximum as the value that has a probability of 5e-4 (or any chosen value) to be exceeded in a period of 1 UI. Define the minimum accordingly. The peak-to-peak is the difference between the maximum and the minimum.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.9.4.4** *P* **340** *L* **20** # 385

Ran, Adee Cisco Systems, Inc.

Comment Type **T** *Comment Status* **D** *AC common mode*

The specification of AC-common mode voltage is "all but 1e-4 of the measured distribution". This can allow extreme spikes of common mode noise to occur in a transmitter output as long as they are not too frequent. It is impossible to design a receiver that can handle unspecified levels of occasional common mode noise without creating errors.
Therefore we should assume that the current specification can cause errors in the receiver, currently at a probability of 1e-4, and these errors can be correlated and cause unexpected FEC failures.
We should not allow potential sources of errors that are not budgeted to have such high probability. If the specified probably is low enough it can be used for all interfaces.

SuggestedRemedy

Change the specification to be all but 1e-7 of the measured distribution, from 5e-6 to 1-5e-6 of the cumulative distribution.
Use the same definition for KR, C2C, and C2M.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.9.4.6** *P* **340** *L* **38** # 577

Dawe, Piers Nvidia

Comment Type **TR** *Comment Status* **D** *VEC, SNDR*

As explained in other comments (and see dawe_3dj_01a_2406), up to 3ck the SNDR spec acted together with the jitter spec and others to protect the link performance - but we don't have a satisfactory way of measuring jitter at today's speeds and losses with reasonable reflections, and separating the two things out "leaves margin on the table". See calvin_3dj_02a_2407 and successor.

SuggestedRemedy

Delete the SNDR section. Add a VEC-like, TDECQ-like spec using this clause's COM reference receiver which can be implemented in a scope. Similarly for KR and C2C.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.9.4.7** *P* **340** *L* **21** # 561

Dawe, Piers Nvidia

Comment Type **TR** *Comment Status* **D** *VEC, jitter*

Measuring jitter separately to other impairments relies on a better slew rate to noise ratio than we have at the observation point, and better than what is needed to make good links. calvin_3dj_01b_2407 shows that most of what is measured is not jitter. Also see calvin_3dj_02a_2407 and successor.

SuggestedRemedy

Delete the jitter section. Add a VEC-like, TDECQ-like spec using this clause's COM reference receiver which can be implemented in a scope. Similarly for KR and C2C.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.9.5.2** *P* **345** *L* **8** # 389

Ran, Adee Cisco Systems, Inc.

Comment Type **T** *Comment Status* **D** *Rx tests*

Compliance with receiver amplitude tolerance is defined in terms of a test with a specific amplitude which has an associated "shall". This test can either pass or fail. But the requirement in Table 179-10 is in terms of voltage.
This is how it's been for a long time - but it can be improved.

The test would better be defined as having a parameter, A_0, which is the PtP amplitude at preset 1.
The test result would be the maximum A_0 that the DUT can tolerate. Compliance will be defined as having the maximum no lower than 1200 mV - which matches Table 179-10 as part of the normative requirements.

This would be more like the way tests are performed in many practical cases (e.g. checking for margin over the specification).

The definition of amplitude tolerance in 176E.6.11 was written in a similar manner to this proposal.

If accepted, this change should be applied in KR and C2C as well.

SuggestedRemedy

Rewrite the definition of amplitude tolerance based on the definition in 176E.6.11.

Implement for CR, KR, and C2C, with editorial license.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.9.5.3.3** *P* **346** *L* **42** # 391

Ran, Adee Cisco Systems, Inc.

Comment Type **T** *Comment Status* **D** *Rx tests*

The calibration of the additional noise in steps f-h of the procedure in 179.9.5.3.3 is quite complicated.
It is related to the fact that compliance with receiver interference tolerance is defined in terms of a test with a specific COM target and a binary result (pass/fail).

It can be simplified if instead of trying to reach the exact COM value and passing, The test result will be defined as the minimum COM that the DUT requires in order to meet the required block error ratio; and COM is calibrated by additive noise.

Compliance can then be defined as having the test result (minimum COM) no higher than 3 dB.

This is simpler to describe and more like the way tests are performed in many cases (e.g. checking for margin over the specification).

If accepted, this change should be applied in KR, C2C, and C2M as well.

SuggestedRemedy

It is proposed to rewrite steps f-h and the test procedure to make the result of the test a numeric value, the minimum COM required by the DUT to meet the block error ratio.

Detailed implementation will be provided in a future presentation if there is support for this direction.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.9.5.4** *P* **349** *L* **42** # 392

Ran, Adee Cisco Systems, Inc.

Comment Type **T** *Comment Status* **D** *Rx tests*

Compliance with receiver jitter tolerance is defined in terms of a test with a specific jitter profile and a binary result (pass/fail). This is how it's been for a long time - but it can be improved.

The test would better be defined as having a parameter, SJ_0, which is the SJ PtP amplitude at 40 MHz, and all jitter test cases are defined based on this parameter with the same mask.

The test result would be the maximum SJ_0 that the DUT can tolerate. Compliance will be defined as having the maximum no lower than 0.05 UI - which can be put in Table 179-10 as part of the normative requirements.

This would be more like the way tests are performed in many practical cases (e.g. checking for margin over the specification).

If accepted, this change should be applied in KR, C2C, and C2M as well.

SuggestedRemedy

Rewrite the definition of jitter tolerance as a value rather than a procedure. Change the test procedure to use a parameter SJ_0 as described in the comment.

Change the value of "jitter tolerance" in Table 179-10 from "table 179-12" to the minimum SJ_0 required, 0.05 UI. Delete the test requirement ("shall") from the procedure.

Implement for CR, KR, C2C, and C2M, with editorial license.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.11** *P* **351** *L* **31** # 394

Ran, Adee Cisco Systems, Inc.

Comment Type **TR** *Comment Status* **D** *CA designations*

The four cable assembly designations are mentioned here and described as differing in only their maximum insertion loss, with reference to 179.11.2, but there is no indication of the four cable designations there.

Also, there is nothing in this draft about cable reach. In previous standards there was some indication of the reach provided by the cable.

It would be helpful for readers to have in this subclause a table that lists the maximum reach and Nyquist ILdd for each cable assembly type. This is more important than the existing dashed list of CR1/CR2/CR4/CR8; the cable types per width are described in detail in Annex 179C and Annex 179D.

SuggestedRemedy

Add a table with one row for every cable assembly designation, and columns for target reach in meters and insertion loss at 56.125 GHz.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179** *SC* **179.11.7** *P* **358** *L* **46** # 546

Li, Tobey MediaTek

Comment Type **TR** *Comment Status* **D** *Reference FFE, eta0*

Multiple COM parameters in Table 179-16 are TBD

SuggestedRemedy

In Table 179-16, use COM parameter values from lit_3dj_01a_2407 slide 10.
eta_0 = 1e-8
d_w = 6
N_fix = 15
N_g = 2
N_f = 4
N_max = 80

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179B** *SC* **179B.2** *P* **745** *L* **25** # 127

Ghiasi, Ali Ghiasi Quantum/Marvell

Comment Type **TR** *Comment Status* **D** *Test Fixture*

TP2 or TP3 test fixture also used for TP1a measurement and given that this clause applies to both CR and C2M need a common description

SuggestedRemedy

Suggest to call this section HCB, then you can just add a sentense that HCB is used for CR measurmeents at TP2 or TP3.

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179B** *SC* **179B.3** *P* **746** *L* **30** # 128

Ghiasi, Ali Ghiasi Quantum/Marvell

Comment Type **TR** *Comment Status* **D** *Test Fixture*

cable assembly text fixture also used for TP1/TP4 measurement and given that this clause applies to both CR and C2M need a common description

SuggestedRemedy

Suggest to call this section MCB, then you can just add a sentense that MCB is used for cable assembly measurements..

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time. Proposed responses, as prepared by the editorial team, may be found in the following file: https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179D** *SC* **179D.1.1** *P* **771** *L* **30** # 130

Ghiasi, Ali — Ghiasi Quantum/Marvell

Comment Type **T** *Comment Status* **D** *CA types*

Add missing combinations

SuggestedRemedy

QSFP-DD1600 (1)- SFP224 (8) PMD=8
QSFP-DD1600 (1)- SFP-DD224 (4) PMD=4
QSFP-DD1600 (1)- QSFP224 (2) PMD=2
OSFP (1)- SFP224 (8) PMD=8
OSFP (1)- SFP-DD224 (4) PMD=4
OPSFP (1)- QSFP224 (2) PMD=2

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time.
Proposed responses, as prepared by the editorial team, may be found in the following file:
https://www.ieee802.org/3/dj/comments/D1p1/8023dj_D1p1_comments_proposed_id.pdf]

Cl **179D** *SC* **179D.1.1** *P* **772** *L* **30** # 131

Ghiasi, Ali — Ghiasi Quantum/Marvell

Comment Type **TR** *Comment Status* **D** *CA types*

Add missing combinations

SuggestedRemedy

QSFP-DD1600 (1)- SFP-DD224 (4) PMD=4
QSFP-DD1600 (1)- QSFP224 (2) PMD=2

OSFP (1)- SFP-DD224 (4) PMD=4
OPSFP (1)- QSFP224 (2) PMD=2

Proposed Response *Response Status* **W**

[Editor's note: This comment was not addressed due to lack of comment resolution time.
Proposed responses, as prepared by the editorial team, may be found in the following file:
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