Cl **1** *SC* **1.3** *P* **31** *L* **14** # 233

Dawe, Piers Nvidia

Comment Type **E** *Comment Status* **D** *bucket7 CR MDI*

There is no mention of QSFP-DD800 in the document

SuggestedRemedy

Use it (explaining the relationship between QSFP-DD and QSFP-DD800) or remove it. Alternatively, say in the editor's note that the references for QSFP-DD and QSFP-DD800 will be updated as those documents evolve.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #232.

Cl **1** *SC* **1.3** *P* **31** *L* **16** # 234

Dawe, Piers Nvidia

Comment Type **ER** *Comment Status* **D** *bucket7 CR MDI*

In the standards world, there is no such thing as SFP112, and I am not aware that there will be a specification of that name. SFP specifications are published by the SFF Committee (now part of SNIA), and are mostly independent of operating speed.

SuggestedRemedy

Delete "SFP112", add the relevant SFF specification(s): some of SFF-8432 SFF-8071 SFF-8432 SFF-8433 SFF-8431 SFF-8419 SFF-8472 REF-TA-1011 SFF-8402 (take advice from the SFF committee for which).

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #232.

Cl **120G** *SC* **120G.3.2** *P* **224** *L* **30** # 211

Ghiasi, Ali Ghiasi Quantum/Inphi

Comment Type **TR** *Comment Status* **D** *bucket7 C2M*

The reference 4T equalizer given that TP4 near end and far end are measured with near ideal MCB vs host channels with via, need to consider impairment due to long barrel vias.

SuggestedRemedy

ghiasi_02_0620 investigates use of C0/C1 as in the CR methodology as one option, this method may result variation in the measurement due to interference but perhaps a better method is to increase eta_0 from 4.1E-8 to account for the board impairments. Eta_0 at TP4 near end is increased by 5x to account short channel impairments and eta_0 at TP4 far end increased by 2x from 4.1E-8. The contribution show that increasing eta_0 is a viable option. The 3rd option is just keep eta_0 at 4.1 E-8 without C0/C1 but instead reduce VEC and increase VEO. 1st option - increase eta_0, 2nd option - tighten the limit on VEO/VEC with eta_0=4.1E-8, 3rd option - add C0/C1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #212.

Cl **120g** *SC* **120g.3.3.2** *P* **227** *L* **49** # 196

Ghiasi, Ali Ghiasi Quantum/Inphi

Comment Type **TR** *Comment Status* **D** *bucket7 C2M*

Host stress far end eye height is TBD

SuggestedRemedy

Far end EH=20 mV, see ghiasi_3ck_02_0620

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #115.

Cl **120G** *SC* **120G.3.3.2** *P* **227** *L* **50** # 116

Hidaka, Yasuo
Credo Semiconductor

Comment Type **T** *Comment Status* **D** *bucket7 C2M*

VEC of host stressed input test is not specified.

SuggestedRemedy

To table 120G-5, add a row of "Far-end vertical eye closure (max)" with a value of 7.5dB and a row of "Far-end vertical eye closure (min)" with a value of 7.0dB.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #197.

Cl **120G** *SC* **120G.3.3.2.1** *P* **229** *L* **15** # 228

Ran, Adee
Intel

Comment Type **T** *Comment Status* **D** *bucket7 C2M*

"The far-end eye height and vertical eye closure are measured according to the method in 120G.5.2"

The method in 120G.5.2 describes a "reference receiver" using COM method (references to 93A) and parameters in a table. it is perhaps suitable for analyzing a directly measured signal (near-end), but does not mention anything about far-end.

In comparison, the reference receiver for 50G C2M is defined in 120E.3.2.1.1, and for the far-end measurement it includes a loss channel:

"The signal measured at TP4 is first convolved with a loss channel (~6.4 dB loss at Nyquist) that represents the worst case channel loss. The loss channel is the host trace defined in 92.10.7.1.1 with Zp = 151 mm."

In order to define far-end measurements, some loss channel has to be included.

Using a convolution may not capture possible effects of reflections from that channel towards the HCB/MCB. It would be preferable to include a physical loss channel in the measurement (as done e.g. in the CR receiver test, see 110.8.4.2.2). However, changing the methodology from 120E may require more consensus, so the suggested remedy is to continue using a computational channel.

The host channel model in clause 162 is updated from the one in clause 92 (referenced by 120E) to include more capacitances and different loss parameters. The length should be set to create a 16 dB loss at 26.56 GHz. Calculation yields 407 mm.

SuggestedRemedy

Add a paragraph after the existing one in 120G.5.2 with the following text:

For the far-end measurements, the signal measured at TP4 is first convolved with a loss channel that represents the maximum host board loss, and then processed by the reference receiver. The loss channel is the host trace defined in 162.11.7.1 with Zp = 407 mm.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #130.

Cl **120G** *SC* **120G.4.2** *P* **235** *L* **17** # 240

Dawe, Piers — Nvidia

Comment Type **TR** *Comment Status* **D** *bucket7 C2M*

Here are the combinations of gDC and gDC2 which I thought we had agreed on a conference call after a good discussion - but it turns out we adopted the TP1a limits only.

SuggestedRemedy

TP4 near end:
gDC2 | gDC
0: | -2 to -4
-1: | -2 to -5
-2: | -4 to -5
-3: | (none)
TP4 far end:
gDC2 | gDC
0: | -2 to -4
-1: | -2 to -7
-2: | -4 to -10
-3: | -8 to -10

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the responses to comments #201 and #202.

Cl **120G** *SC* **120G.5.2** *P* **235** *L* **17** # 119

Hidaka, Yasuo — Credo Semiconductor

Comment Type **TR** *Comment Status* **D** *bucket7 C2M*

Range of gDC for TP4 near-end is TBD.
See hidaka_3ck_01_0720, slide 8.

SuggestedRemedy

Specify gDC range for TP4 near-end as min -5.0, max -3.0, step 1.0.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #201.

Cl **120G** *SC* **120G.5.2** *P* **235** *L* **21** # 120

Hidaka, Yasuo — Credo Semiconductor

Comment Type **TR** *Comment Status* **D** *bucket7 C2M*

Range of gDC2 for TP4 near-end is TBD.
See hidaka_3ck_01_0720, slide 8.

SuggestedRemedy

Specify gDC2 range for TP4 near-end as min -2.0, max 0.0, step 0.5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #201.

Cl **120G** *SC* **120G.5.2** *P* **235** *L* **25** # 121

Hidaka, Yasuo — Credo Semiconductor

Comment Type **TR** *Comment Status* **D** *bucket7 C2M*

Range of gDC for TP4 far-end is TBD.
See hidaka_3ck_01_0720, slide 8.

SuggestedRemedy

Specify gDC range for TP4 far-end as min -9.0, max -3.0, step 1.0.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #202.

Cl **120G** *SC* **120G.5.2** *P* **235** *L* **29** # 122

Hidaka, Yasuo — Credo Semiconductor

Comment Type **TR** *Comment Status* **D** *bucket7 C2M*

Range of gDC2 for TP4 far-end is TBD.
See hidaka_3ck_01_0720, slide 8.

SuggestedRemedy

Specify gDC2 range for TP4 far-end as min -3.0, max -1.5, step 0.5.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #202.

Cl **162** *SC* **162.9.3** *P* **148** *L* **28** # 137

Ran, Adee Intel

Comment Type **T** *Comment Status* **D** *bucket7 CR*

(cross-clause comment)
Tx common mode to differential mode return loss is currently TBD.

The current reference is to 92.8.3.3 equation 92-2, where the equation for the minimum loss creates a piecewise linear function, with 22 dB at DC, 12 dB at the Nyquist frequency (12.89 GHz), and ~10.5 dB at 19 GHz. This limits the conversion to/from common mode quite well.

There is another C-D RL specification in this draft, in 120F.3.2.2 (Rx specifications), which is based on frequency scaling of the similar specification in clause 93 (equation 93-5 - per the adopted baseline). Equation 93-5 creates a tighter spec than equation 92-2 (except in a small band around 7 GHz) even though mode conversion should be easier to control in KR/C2C channels.

Clause 163 Rx specification refers to 93.8.1.4 - which is a Tx specification and does not include C-D RL at all (obvious error).

It is not clear why C2C, CR, and KR should have different specifications for C-D RL. If there is, it should be explained (informative NOTE would probably help).

The suggested remedy based on frequency scaling of equation 92-2 (which is equivalent to equation 120G–1, but uses f_N as a parameter to simplify the text).

Alternatively, 120F.3.2.2 can be used for all three Rx specifications.

This specification should be in a new subclause that other specifications can refer to. It should also provide some justification to the specification.

SuggestedRemedy

Add a subclause 162.9.3.1.5 with content:
162.9.3.5 PMD Common-mode to differential return loss
Common-mode signal can be generated in the channel by conversion of a differential signal. Common-mode signal propagating from the channel into the transmitter or the receiver can be converted back to a differential signal and result in differential noise propagating toward the receiver. To limit this effect, a minimum common-mode to common-mode return loss is required.

The common-mode to differential mode output return loss of the transmitter shall meet Equation (162–new).

CDRL(f) ≥
22-10*f/f_N, 0.01 ≤ f ≤ f_N
15-3*f/f_N, f_N< f < 40
Where
f_N=26.5625 is the Nyquist frequency in GHz
f is the frequency in GHz
CDRL(f) is the common-mode to differential return loss in dB at frequency f

Refer to the new subclause in Rx specifications: Table 162–12, Table 163–7 , and Table 120F-3.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

There is no consensus to change the RLCD specification at this time.

See the response to comment #138.

Cl **162** *SC* **162.11.7.2** *P* **163** *L* **32** # 251

Dawe, Piers Nvidia

Comment Type **ER** *Comment Status* **D** *bucket7 CR MDI*

In the standards world, there is no such thing as SFP112, and I am not aware that there will be a specification of that name. SFP specifications are published by the SFF Committee (now part of SNIA), and are mostly independent of operating speed.

SuggestedRemedy

Change to "SFP28" which is what 802.3cd uses but the indication of a slower signalling rate in the name may cause confusion, or "SFP+" which is more generic.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #232.

Cl **162** *SC* **162.11.7.2** *P* **163** *L* **32** # 252

Dawe, Piers Nvidia

Comment Type **ER** *Comment Status* **D** *bucket7 CR MDI*

SFP112-DD is not its correct name

SuggestedRemedy

Change to SFP-DD (as in subclause 1.3) throughout the document.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #232.

Cl **162** *SC* **162.11.7.2** *P* **163** *L* **32** # 253

Dawe, Piers — Nvidia

Comment Type **ER** *Comment Status* **D** *bucket7 CR MDI*

In the standards world, there is no such thing as QSFP112, and no expectation that there will be a specification of that name. QSFP specifications are published by the SFF Committee (now part of SNIA), and are mostly independent of operating speed.

SuggestedRemedy

Change to "QSFP28" which is what 802.3cd uses but the indication of a slower signalling rate in the name may cause confusion, or "QSFP+" which is more generic and in line with the latest SFF-8679.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #232.

Cl **162** *SC* **162.11.7.2** *P* **163** *L* **32** # 254

Dawe, Piers — Nvidia

Comment Type **ER** *Comment Status* **D** *bucket7 CR MDI*

QSFP112-DD is not its correct name

SuggestedRemedy

Change to QSFP-DD and/or QSFP-DD800 (as in subclause 1.3) throughout the document. Twice in Table 162-18, three times in 162.12, several times in 162C and 162D.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #232.

Cl **162B** *SC* **162B.1** *P* **247** *L* **11** # 180

DiMinico, Christopher — MC Communications

Comment Type **TR** *Comment Status* **D** *bucket7 CR*

Proposals for 162B.1 Mated Test Fixtures specification TBDs

SuggestedRemedy

Specifications for TBDs;
- 162B.1.3.1 Mated test fixtures differential insertion loss FOMILD
- 162B.1.3.2 Mated test fixtures differential return loss
- 162B.1.3.3 Mated test fixtures common-mode conversion insertion loss
- 162B.1.3.6 Mated test fixtures integrated crosstalk noise

See diminico_3ck_01_0720.pdf

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The following presentation was reviewed at a previous ad hoc meeting:
http://www.ieee802.org/3/ck/public/adhoc/jun10_20/haser_3ck_adhoc_01c_062420.pdf

There was no consensus to address the value for MTF FOM_ILD at this time.

For MTF RLDD, CM conversion loss, and ICN resolve using the responses to comments #92, #86, #88.

Cl **162B** *SC* **162B.1.3.1** *P* **249** *L* **41** # 82

Haser, Alex — Molex

Comment Type **TR** *Comment Status* **D** *bucket7*

Frequency range is not practical for measured data

SuggestedRemedy

Change to 0.05 GHz ≤ f ≤ 40 GHz (see haser_3ck_adhoc_01b_061020) & update Figure 162B-3

Proposed Response *Response Status* **W**

PROPOSED REJECT.

The following presentation was reviewed at a previous ad hoc meeting:
http://www.ieee802.org/3/ck/public/adhoc/jun10_20/haser_3ck_adhoc_01c_062420.pdf

Resolve using the response to comment #91.

Cl **162B** *SC* **162B.1.3.6** *P* **254** *L* **13** # 93

Haser, Alex Molex

Comment Type **T** *Comment Status* **D** *bucket7 CR ICN*

Fill in TBD for T_ft

SuggestedRemedy

Set T_ft to 6.16 ps (see haser_3ck_adhoc_01b_061020)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The following presentation was reviewed at a previous ad hoc meeting:
http://www.ieee802.org/3/ck/public/adhoc/jun10_20/haser_3ck_adhoc_01c_062420.pdf

Resolve using the response to comment #92.

Cl **162B** *SC* **162B.1.3.6** *P* **254** *L* **20** # 94

Haser, Alex Molex

Comment Type **T** *Comment Status* **D** *bucket7 CR ICN*

Fill in TBD for MDFEXT ICN limit

SuggestedRemedy

Use same limit as 802.3cd; 4.2 mV (see haser_3ck_adhoc_01b_061020)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The following presentation was reviewed at a previous ad hoc meeting:
http://www.ieee802.org/3/ck/public/adhoc/jun10_20/haser_3ck_adhoc_01c_062420.pdf

Resolve using the response to comment #92.

Cl **162B** *SC* **162B.1.3.6** *P* **254** *L* **21** # 95

Haser, Alex Molex

Comment Type **T** *Comment Status* **D** *bucket7 CR ICN*

Fill in TBD for MDNEXT ICN limit

SuggestedRemedy

Use same limit as 802.3cd; 1.5 mV (see haser_3ck_adhoc_01b_061020)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The following presentation was reviewed at a previous ad hoc meeting:
http://www.ieee802.org/3/ck/public/adhoc/jun10_20/haser_3ck_adhoc_01c_062420.pdf

Resolve using the response to comment #92.

Cl **162B** *SC* **162B.1.3.6** *P* **254** *L* **23** # 96

Haser, Alex Molex

Comment Type **T** *Comment Status* **D** *bucket7 CR ICN*

Fill in TBD for Total ICN limit

SuggestedRemedy

Use same limit as 802.3cd; 4.4 mV (see haser_3ck_adhoc_01b_061020)

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

The following presentation was reviewed at a previous ad hoc meeting:
http://www.ieee802.org/3/ck/public/adhoc/jun10_20/haser_3ck_adhoc_01c_062420.pdf

Resolve using the response to comment #92.