Cl **120F** *SC* **120F.3.1** *P* **205** *L* **13** # 29

Wu, Mau-Lin Mediatek

Comment Type **T** *Comment Status* **D** *bucket3*

The 'AC common-mode RMS voltage (max.)' is 30 mV, which is the same as that in 802.3cd. By combining this spec with P/N skew mismatch of backplane channel, it will induce crosstalk to differential signal at receiver. From 50G to 100G, it's difficult to improve the P/N skew mismatch to half. Based on that, we shall modify AC common-mode RMS voltage. We shall align this spec to that in C2M (120G).

SuggestedRemedy

Change 30 mV to 17.5 mV.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

!!! 2020/7/15 new response !!!

Resolve using the response to comment #28.

Cl **120G** *SC* **120G.3.2** *P* **224** *L* **46** # 191

Ghiasi, Ali Ghiasi Quantum/Inphi

Comment Type **TR** *Comment Status* **D** *bucket3*

Near end EH are TBD.

SuggestedRemedy

Near end EH=40 mV, see ghiasi_3ck_02_0620

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

[Editor's note: changed subclause/page/line from 120F.4.2/211/46]

Resolve using the response to comment #177.

Cl **120G** *SC* **120G.3.2** *P* **224** *L* **48** # 192

Ghiasi, Ali Ghiasi Quantum/Inphi

Comment Type **TR** *Comment Status* **D** *bucket3*

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.

[Editor's note: change subclause/line/page from 120F.4.2/211/48.]

Resolve using the response to comment #177.

Cl **120G** *SC* **120G.3.2** *P* **224** *L* **37** # 194

Ghiasi, Ali Ghiasi Quantum/Inphi

Comment Type **TR** *Comment Status* **D** *bucket3*

Far VEC is TBD.

SuggestedRemedy

Far end VEC=7.5 dB, see ghiasi_3ck_02_0620

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

[Editor's note: SC/page/line changed from 120F.4.2/211/48.]

!!! 2020/7/15 new response !!!

Resolve using the response to comment #177.

Cl **120G** *SC* **120G.3.2** *P* **224** *L* **37** # 193

Ghiasi, Ali — Ghiasi Quantum/Inphi

Comment Type **TR** *Comment Status* **D** *bucket3*

Near VEC is TBD.

SuggestedRemedy

Near end VEC=7.5 dB, see ghiasi_3ck_02_0620

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

[Editor's note: changed subclause/page/line from 120F.4.2/211/48.]

!!! 2020/7/15 new response !!!

Resolve using the response to comment #177.

Cl **120G** *SC* **120G.3.2** *P* **224** *L* **43** # 11060

Ran, Adee — Intel

Comment Type **T** *Comment Status* **D** *bucket3*

[Comment resubmitted from Draft 1.1. 120G.3.2, P224, L37]

Signal swing and Tx equalization are important in PAM4 since the receiver has a limited linear range. A large swing at the host input may prevent linear operation and detection of PAM4. Attenuation has been used in past Rx designs, but it is becoming harder to implement with the large bandwidth requirements for 100G.

The current module output specifications have limited information about output swing and ISI (only implicitly through far-end eye height and far-end precursor ISI ratio, which are defined with a single channel), and do not mention any control of the Tx setting. With the large range of C2M host channels, it is unlikely that a fixed Tx setting will be usable for all hosts.

Actual modules even in 50G have some control of equalization and swing. There are indications that this control is required for actual operation.

If we ignore this capability in the specifications, some hosts may not be able to operate with the settings used for module output compliance; this means the module compliance specs are useless and measuring them is a waste of time.

The standard should at least mention the module's Tx control capabilities (with reference to external documents) and preferably define requirements for them, with management variables and control registers. It will be beneficial if the Tx specifications include these capabilities.

SuggestedRemedy

A presentation is planned with further details.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

!!! 2020/7/20 Update response. !!!

The following presentation was reviewed by the task force at a previous task force meeting:
http://www.ieee802.org/3/ck/public/adhoc/may27_20/ran_3ck_adhoc_01_052720.pdf

The closed response to comment #175 adopts two module output (transmitter) settings, which addresses the configuration of the module output.

According to the closed response to comment #176, there is no consensus at this time to change the module output differential peak to peak voltage specification.

Cl **120G** *SC* **120G.3.2** *P* **224** *L* **44** # 238

Dawe, Piers — Nvidia

Comment Type **TR** *Comment Status* **D** *bucket3*

Unlike CR and KR, the host receiver can't choose what the module output should be like. The module output is supposed to be set to a compromise that's good enough for all hosts. But it may turn out that that's not feasible. Yet we want to avoid fussy tuning schemes that burden the simple module output and the management entity that may be controlling multiple modules.

SuggestedRemedy

First choice: continue with present plan.
Second choice: let the host receiver sort out its channel (if crosstalk or reflections are bad, use a better equalizer).
Third choice: host tells module to use one of just two sets of specs; for low loss host channels and for high loss host channels. Module must be capable of both. Host selects one, by a means we don't specify, based on knowledge of its own preference and channel loss. Eye parameters defined at TP4 and after loss 2 for the low loss setting, after loss 1 and loss 3 for the high loss setting. Generous overlap between the two loss ranges so the host can choose by very simple means. Consider reduced pk-pk V max for the low loss setting.
Don't try to micro-manage the module.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

!!! 2020/7/15 new response !!!

Resolve using the response to comment #175.

Cl **120G** *SC* **120G.3.2** *P* **224** *L* **45** # 135

Hidaka, Yasuo — Credo Semiconductor

Comment Type **TR** *Comment Status* **D** *bucket3*

Near-end eye height, differential (min) is TBD.
See hidaka_3ck_01_0720, slide 7.

SuggestedRemedy

Change TBD to 50.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #177.

Cl **120G** *SC* **120G.3.2** *P* **224** *L* **48** # 108

Hidaka, Yasuo — Credo Semiconductor

Comment Type **TR** *Comment Status* **D** *bucket3*

Near-end VEC (max) should be specified.
See hidaka_3ck_01_0720, slide 6.

SuggestedRemedy

To table 120G-3, add a row of "Near-end vertical eye closure (max)" with a value of 7.5 dB and a reference to 120G.3.2.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #177.

Cl **120G** *SC* **120G.3.2** *P* **224** *L* **49** # 107

Hidaka, Yasuo — Credo Semiconductor

Comment Type **TR** *Comment Status* **D** *bucket3*

Far-end eye heigh, differential (min) is TBD.
See hidaka_3ck_01_0720, slide 7.

SuggestedRemedy

Change TBD to 24.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #177.

Cl **120G** *SC* **120G.3.2** *P* **224** *L* **51** # 109

Hidaka, Yasuo — Credo Semiconductor

Comment Type **TR** *Comment Status* **D** *bucket3*

Far-end VEC (max) should be specified.
See hidaka_3ck_01_0720, slide 6.

SuggestedRemedy

To table 120G-3, add a row of "Far-end vertical eye closure (max)" with a value of 7.0 dB and a reference to 120G.3.2.1.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.

Resolve using the response to comment #177.

Cl **163** *SC* **163.9.1** *P* **177** *L* **38** # 205

Ghiasi, Ali — Ghiasi Quantum/Inphi

Comment Type **TR** *Comment Status* **D** *bucket3*

30 mV AC common mode has significant amount of penalty given that RLCD ~RLDC or 12 dB depending on the loss of the channel the penalty can be 1-3 mV RMS

SuggestedRemedy

Consider reducing 30 mV RMS to 17.5 mV RMS

Proposed Response *Response Status* **W**

PROPOSED REJECT.

[Editor's note: changed page from 148.]

Resolve using the response to comment #28.

Cl **163** *SC* **163.9.1** *P* **177** *L* **38** # 54

Mellitz, Richard — Samtec

Comment Type **TR** *Comment Status* **D** *bucket3*

30 mv of AC common-mode RMS voltage is too severe. Little work has been to justify this.

SuggestedRemedy

Set AC common-mode RMS voltage to TBD. Add a line to the table called AC common-mode deterministic voltage which essentially represents skew.

Proposed Response *Response Status* **W**

PROPOSED REJECT.

Resolve using the response to comment #28.