

Cl 160 SC 160.6.1 P125 L30 # 37

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

Following up on D2.2 comment 14: PAM4 receivers need protection from signals with combinations of overshoot and low quality that are acceptable to the ideal reference receiver for TDECQ with its infinite resolution and perfect linearity, but real receivers designed to realistic cost and power objectives struggle with.

PAM4 receiver ICs are likely to have been designed and qualified to 200GBASE-DR4, 200GBASE-FR4, 200GBASE-LR4, 200GBASE-ER4, 50GBASE-FR, 50GBASE-LR and/or 50GBASE-ER and 100GBASE-DR which all protect the receiver from bad over-emphasised signals with a limit on  $K = 10\log_{10}(C_{eq})$ . Also 50GBASE-SR, 100GBASE-SR2, 200GBASE-SR4, 400GBASE-SR8 and 400GBASE-SR4.2. Recent 100 Gb/s/lane PAM4 receivers (100GBASE-DR, 100GBASE-FR1, and 100GBASE-LR1, 400GBASE-FR4 and 400GBASE-LR4-6) are protected by over/under-shoot and transmitter power excursion limits.

In my previous comment I meant to recommend all three limits because each one can catch undesirable signals that the others miss, and that TDECQ misses too.

There are no separate measurements for these; they are by-products of waveform captures for TDECQ and TECQ.

*SuggestedRemedy*

Reinstate the limit on  $K = 10\log_{10}(C_{eq})$  for all three PMDs.

Then at least there will be consistent protection across the 50Gb/s/lane family.

Add over/under-shoot limits as in the latest P802.3cu draft, for all three PMDs.

Add transmitter power excursion limits to the PMD(s) that need that protection (it depends on the receive max power).

Response **U**

REJECT.

This repeats D2.2 Comment#14. No rationale is given to change previous resolution.