Cl **151**	*SC* **151.7.1**	*P* **63**	*L* **29**	#	20059

Dawe, Piers   Mellanox

Comment Type **TR**   *Comment Status* **R**   *Tx 10logCeq*

The limit for TDECQ - 10log10(Ceq) (also known as K) has been deleted from this table, but it is still needed to protect the receiver from the bad signals that are not caught by the TDECQ limit or the overshoot limit. All other optical PAM4 transmitter specs have such a limit, which was introduced a long time ago, in July 2018 (P802.3cd/D3.4), and its continued presence is needed to protect equalizers, receivers and receiver designs that were/are designed relying on it. Particularly 400GBASE-LR4-6 where the TDECQ limit is higher than for any existing SMF PMD.

To summarize the situation, we need different limits to exclude different kinds of bad signal: K protects receiver back end, TDECQ protects receiver front end and optical budget, overshoot spec against over-emphasised signals not caught by the other specs, and so on. We need them all, but K and TDECQ come off the same measurement, so not an extra cost.

SuggestedRemedy

Restore the limits for TDECQ - 10log10(Ceq) as before (3.4 dB for 400GBASE-FR4 and 3.5 dB for 400GBASE-LR4-6, same as the TDECQ limits).

Response   *Response Status* **U**

REJECT.

See comment #87

Cl **140**	*SC* **140.6.1**	*P* **41**	*L* **32**	#	20069

Dawe, Piers   Mellanox

Comment Type **TR**   *Comment Status* **R**   *Tx 10logCeq*

The limit for TDECQ - 10log10(Ceq) (also known as K) is missing from two columns here, but it is still needed to protect the receiver from the bad signals that are not caught by the TDECQ limit or the overshoot limit. All other optical PAM4 transmitter specs have such a limit, which was introduced a long time ago, in July 2018 (P802.3cd/D3.4), and its continued presence is needed to protect equalizers, receivers and receiver designs that were/are designed relying on it.

To summarize the situation, we need different limits to exclude different kinds of bad signal: K protects receiver back end, TDECQ protects receiver front end and optical budget, overshoot spec against over-emphasised signals not caught by the other specs, and so on. We need them all, but K and TDECQ come off the same measurement, so not an extra cost.

SuggestedRemedy

Restore the limit for TDECQ - 10log10(Ceq) for 100GBASE-FR1 100GBASE-LR1, as before (3.4 dB, same as the TDECQ limit).

Response   *Response Status* **U**

REJECT.

See comment #87

Cl **140**	*SC* **140.7.5c**	*P* **46**	*L* **38**	#	21029

Dawe, Piers   Mellanox

Comment Type **TR**   *Comment Status* **R**   *peak-to-peak power*

The positive and negative peaks of an optical signal can be very different. An obvious example is a directly modulated laser, but other transmitters are not symmetric also. A receiver O to E circuit is not necessarily symmetrical either - the optical input is naturally "single ended". Therefore, the positive and negative peaks must be limited separately.

SuggestedRemedy

Change "Transmitter peak-to-peak power" which is Pmax - Pmin to "Transmitter power excursion", defined as max(Pmax-Paverage, Paverage-Pmin). Take 3 dB off the limits in Table 140-6.
Make similar changes in Clause 151.

Response   *Response Status* **U**

REJECT.

The measurement methodology and associated limits in D2.1 are based on measured data presented in rodes_3cu_01_032420 and associated presentations.

Changing the test methodology and limits would require supporting data. There is no consensus to make the proposed 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: Comment ID

Comment ID **21029**   Page 1 of 2
7/6/2020 3:42:33 PM

Cl **140**   *SC* **140.6.1**   *P* **41**   *L* **51**   # 21030

Dawe, Piers   Mellanox

Comment Type   **TR**   *Comment Status*   **R**   *10logCeq*

Although the relative and absolute overshoot limits catch some bad transmitters that the K limit would catch, they don't catch all of them. P802.3ct and P802.3cw have the equivalent of a K limit, so it's not unnecessary. The motivation for removing it was poor accuracy of the TDECQ method.

SuggestedRemedy

Reinstate the K limit for 100GBASE-FR1, 100GBASE-LR1, 400GBASE-FR4 and 400GBASE-LR4-6. For these PMDs, apply it at TP2 as well as at TP3, same as TECQ. Improve the accuracy of the TDECQ method.

Response   *Response Status*   **U**

REJECT.

This is a similar comment to #59, #62, #68, #69, and #87 against D2.0. These five comments were rejected by the task force due to an earlier decision to remove 10logCeq and replace it with overshoot limits.

The response to #87 is included here for reference.

Based on the results of Straw Poll #1 taken at the 3/17 interim conference call , the Task Force consensus was to maintain the decision made at the 802.3cu TF meeting in Geneva to remove "TDECQ-10Log10(Ceq) and to clean up the draft to correctly reflect this decision (including among other changes to remove "SECQ-10Log10(Ceq)" from the receiver specifications).

Straw Poll #1:
With regards to the inclusion of TDECQ-10log(Ceq) parameter, I support:
a) Full removal from both Tx and Rx tables: 27
b) Reinstate for both Tx and Rx tables: 9
(17 Abstain)

TYPE: TR/technical required ER/editorial required GR/general required T/technical E/editorial G/general   *Comment ID* **21030**   Page 2 of 2
COMMENT STATUS: D/dispatched A/accepted R/rejected   RESPONSE STATUS: O/open W/written C/closed U/unsatisfied Z/withdrawn   7/6/2020 3:42:35 PM
SORT ORDER: Comment ID