Cl **200** *SC* **200.5.4** *P* **29** *L* **6** # 21

traverso, matt cisco

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

The average optical power at TP3 for SIGNAL_DETECT is too low (currently <= -30 dBm) in Table 200-4. This limits the capability of multi-interface 25GBASE-LR or 25GBASE-ER transmitters which can utilize a shared light source split across multiple transmitters.

SuggestedRemedy

Suggest to change threshold to -25 dBm in Table 200-4

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
Should match "Average launch power of OFF transmitter (max)" of Comment #20, which proposes -25dBm.

Cl **200** *SC* **200.6.1** *P* **30** *L* **30** # 34

Lee, Hanhyub ETRI

Comment Type **E** *Comment Status* **D**

Similar sentences are repeated.

SuggestedRemedy

The 25GBASE-LR and the 25GBASE-ER transmitter shall meet the specifications defined in Table 200–6 per the definitions in 200.7.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **200** *SC* **200.6.1** *P* **30** *L* **45** # 22

traverso, matt cisco

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

In Table 200-6, the "Average launch power (min)" is currently -7 dBm for 25GBASE-LR. The parameter governing minimum transmitter strength is of course the OMA (min). In order for the average power to be -7 dBm while still complying to the OMA (min) of -4 dBm would necessitate a 30 dB Extinction Ratio transmitter. This is unrealistic.

SuggestedRemedy

I suggest updating the informative value for 25GBASE-LR "Average launch power (min)" to be -6.6 dBm which corresponds to a >13.25 dB ER.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The same point was discussed during comment resolution for D1.0. The original baseline for Tx Pavg was -6.5 dBm for the same reason given in the comment (i.e. assume finite ER to avoid unrealistically low Pavg for a given OMA). However, the preference was to stay consistent with prior convention, where infinite ER was assumed (i.e. Clause 88). This position was viewed as acceptable, since the normative specification is OMA.

Cl **200** *SC* **200.6.1** *P* **30** *L* **45** # 23

traverso, matt cisco

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

In Table 200-6, the "Average launch power (min)" is currently -1.6 dBm for 25GBASE-ER. The parameter governing minimum transmitter strength is of course the OMA (min). In order for the average power to be -1.6 dBm while still complying to the OMA (min) of -4 dBm would necessitate a 30 dB Extinction Ratio transmitter. This is unrealistic.

SuggestedRemedy

I suggest updating the informative value for 25GBASE-ER "Average launch power (min)" to be -1.2 dBm which corresponds to a >13.25 dB ER.

Proposed Response *Response Status* **W**

PROPOSED REJECT.
The same point was discussed during comment resolution for D1.0 i.e. assume finite ER to avoid unrealistically low Pavg for a given OMA. However, the preference was to stay consistent with prior convention, where infinite ER was assumed (for example, see Clause 88). This position was viewed as acceptable, since the normative specification is OMA.

Cl **200** *SC* **200.6.1** *P* **30** *L* **46** # 36

Lewis, David Lumentum

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

We need to align the 25GBASE-ER transmit characteristics in Table 200-6 with the industry choice of link budget expressed in ITU-T G.959.1. The ITU-T Minimum mean channel output power is 0.6 dBm. With a minimum extinction ratio of 7 dB, this equates to a minimum OMA of 1.85 dBm. In the ITU-T methodology this launch power allows for the worst case transmitter quality so is equivalent to the IEEE parameter OMA (min) for maximum TDP. Since TDP (max) = 2.7 dB for 25GBASE-ER, we should set Launch power in OMA minus TDP at (1.85 - 2.7) = -0.85 dBm or lower.

SuggestedRemedy

Change Average launch power (min) from -1.6 to -3 dBm.
Change Optical Modulation Amplitude (OMA), (min) from 1.4 to 0 dBm.
Change Launch Power in OMA minus TDP (min) from 0.4 to -1 dBm.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **200** *SC* **200.6.1** *P* **30** *L* **47** # 25

Huang, Xi Huawei Technologies

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

we suggest to change average launch power(min) for 25GBASE-ER from -1.6 to -0.2 dBm. Please see the proposal for explanations

SuggestedRemedy

-0.2

Proposed Response *Response Status* **W**

Cl **200** *SC* **200.6.1** *P* **30** *L* **50** # 26

Huang, Xi Huawei Technologies

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

we suggest to change Optical Modulation Amplitude(OMA) (min) for 25GBASE-ER from -1.4 to 2.8 dBm. Please see the proposal for explanations

SuggestedRemedy

2.8

Proposed Response *Response Status* **W**

Cl **200** *SC* **200.6.1** *P* **30** *L* **52** # 27

Huang, Xi Huawei Technologies

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

we suggest to change Optical Modulation Amplitude minus TDP (min) for 25GBASE-ER from -0.4 to 1.8 dBm. Please see the proposal for explanations

SuggestedRemedy

1.8

Proposed Response *Response Status* **W**

Cl **200** *SC* **200.6.1** *P* **31** *L* **7** # 20

traverso, matt cisco

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

The "Average launch power of OFF transmitter (max)" of -30 dBm in Table 200-6 is too low. This limits the capability of multi-interface 25GBASE-LR or 25GBASE-ER transmitters which can utilize a shared light source split across multiple transmitters.

SuggestedRemedy

Suggest to change "Average launch power of OFF transmitter (max)" to -25 dBm in Table 200-6

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
If the original baseline assumption of DML transmitter and APD receiver is maintained, then the proposal is accepted in principle

Comment #37 proposes "Average receive power (min)" to be -21dBm. A 4dBm difference with the "Average launch power of OFF transmitter (max)" is marginal, though may be sufficient.

Cl **200** *SC* **200.6.2** *P* **32** *L* **6** # 35

Lee, Hanhyub ETRI

Comment Type **E** *Comment Status* **D**

Similar sentences are repeated.

SuggestedRemedy

The 25GBASE-LR and the 25GBASE-ER receiver shall meet the specifications defined in Table 200–7 per the definitions in 200.7.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **200** *SC* **200.6.2** *P* **32** *L* **19** # 39

Lewis, David Lumentum

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

In Table 200-7, Damage threshold (min) is TBD for 25GBASE-ER. Previous PMDs have adopted the method of setting damage threshold (min) at 1 dB higher than the maximum average power at the receiver. Since we have a minimum channel insertion loss of 11 dB for 25GBASE-ER, Average receive power (max) is set at -5 dBm, so the damage threshold should be set at -4 dBm or higher.

SuggestedRemedy

Change Damage threshold (min) from TBD to -4 dBm.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
If the original baseline assumption of DML transmitter and APD receiver is maintained, then the proposal is accepted in principle.

Comment #24 proposes using a common attenuator value of 10dB for the minimum channel insertion loss. If this is accepted, the average receiver power (max) changes from -5dBm to -4dBm. The damage threshold (min) is then -3dBm.

Cl **200** *SC* **200.6.2** *P* **32** *L* **19** # 24

traverso, matt cisco

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

There is a TBD for the 25GBASE-ER receiver "Damage Threshold (min)" in Table 200-7.

SuggestedRemedy

Given there is a likelihood to use an APD for the 25GBASE-ER application, I suggest making the "Channel insertion loss (min)" a value of 10dB to be inline with common attenuator values. This would then require that the "Damage Threshold (min)" be shifted to -4 dBm in Table 200-7. Also, suggest to update in Table 200-8 and Table 200-12, the "Channel insertion loss (min)" to a value of 10 dB for 25GBASE-ER.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
If the original baseline assumption of DML transmitter and APD receiver is maintained, then the proposal is accepted in principle.

Comment #39 proposes using the convention of having the damage threshold +1dBm higher than the maximum average receive power. If this is accepted, the value will be -3dBm.

Cl **200** *SC* **200.6.2** *P* **32** *L* **23** # 28

Huang, Xi Huawei Technologies

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

we suggest to change Average receive power (min) for 25GBASE-ER from -19.6 to -18.2dBm. Please see the proposal for explanations

SuggestedRemedy

-18.2

Proposed Response *Response Status* **W**

Cl **200** *SC* **200.6.2** *P* **32** *L* **23** # 37

Lewis, David Lumentum

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

We need to align the 25GBASE-ER receive characteristics in Table 200-7 with the industry choice of link budget expressed in ITU-T G.959.1. The ITU-T spec has equivalent sensitivity of of -18.9 dBm (average power) with min ER= 7 dB, which equates to OMA sensitivity of -17.65 dBm. However in the ITU-T methodology this is measured back-to-back with a worst case compliant transmitter. For 25GBASE-ER the informative value of Receiver sensitivity (OMA), (max) is measured back-to-back with a high quality reference transmitter and so should be lower than the ITU-T equivalent sensitivity.

SuggestedRemedy

Change
Average receive power (min) from -19.6 to -21 dBm
Receiver sensitivity (OMA), (max) from -17.6 to -19 dBm

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
If the original baseline assumption of DML transmitter and APD receiver is maintained, then these are reasonable changes to account for the assumptions implicit in the ITU-T specifications.

Cl **200** *SC* **200.6.2** *P* **32** *L* **28** # 29

Huang, Xi Huawei Technologies

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

we suggest to change Receiver sensitivity (OMA), max for 25GBASE-ER from -17.6 to -16.2dBm. Please see the proposal for explanations

SuggestedRemedy

-16.2

Proposed Response *Response Status* **W**

Cl **200** *SC* **200.6.2** *P* **32** *L* **30** # 38

Lewis, David Lumentum

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

The Stressed receiver sensitivity (OMA), (max) and the Conditions of stressed receiver test are currently TBD for 25GBASE-ER. This comment proposes a set of values based on modeling of a worst case transmitter with TDP of 2.7 dB and with a worst case 40 km channel at a center wavelength of 1295 nm.

SuggestedRemedy

Change
Stressed receiver sensitivity (OMA), (max) from TBD to -16.5 dBm
Vertical eye closure penalty from TBD to 1.9 dB
Stressed eye J2 Jitter from TBD to 0.27 UI
Stressed eye J4 Jitter from TBD to 0.39 UI
SRS eye mask definition from TBD to {0.24,0.5,0.5,0.24,0.24,0.4}

Proposed Response *Response Status* **W**

PROPOSED ACCEPT IN PRINCIPLE.
If the original baseline assumption of DML + APD is maintained, these are reasonable values for the TBDs indicated.

Cl **200** *SC* **200.6.2** *P* **32** *L* **33** # 40

Lewis, David Lumentum

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

In Table 200-7, the value for Vertical eye closure penalty for 25GBASE-LR is -1.9 dB. The convention for previous PMDs has been to express VECP as a positive number.

SuggestedRemedy

Change Vertical eye closure penalty for 25GBASE-LR from -1.9 to 1.9 dB.

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **TOC** *SC* **TOC** *P* **12** *L* **36** # 30

Lee, Hanhyub ETRI

Comment Type **E** *Comment Status* **D**

Typo of RIN20OMA

SuggestedRemedy

Correct '20' as subscript of RIN

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **TOC** *SC* **TOC** *P* **12** *L* **39** # 31

Lee, Hanhyub ETRI

Comment Type **E** *Comment Status* **D**

A spacing must be between a clause number and a clause title

SuggestedRemedy

200.7.10 Stressed receiver sensitivity

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **TOC** *SC* **TOC** *P* **12** *L* **45** # 32

Lee, Hanhyub ETRI

Comment Type **E** *Comment Status* **D**

A spacing must be between a clause number and a clause title

SuggestedRemedy

200.11.1 Introduction
200.11.2 Identification

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.

Cl **TOC** *SC* **TOC** *P* **12** *L* **49** # 33

Lee, Hanhyub ETRI

Comment Type **E** *Comment Status* **D**

A spacing must be between a clause number and a clause title

SuggestedRemedy

200.11.3 Major capabilities/options
200.11. 4 PICS proforma tables for Physical Medium Dependent (PMD) sublayer and medium, types 25GBASE-LR and 25GBASE-ER

Proposed Response *Response Status* **W**

PROPOSED ACCEPT.