

Supporting Information for Comments Related to TDECQ (max)

comments 3 – 7, 14, 15, 17, 19, 20 – 22, 25, 27, 28, 35, 41, 62, 63, 66 – 70

Ramana Murty

Broadcom Inc.

Sep 8, 2026

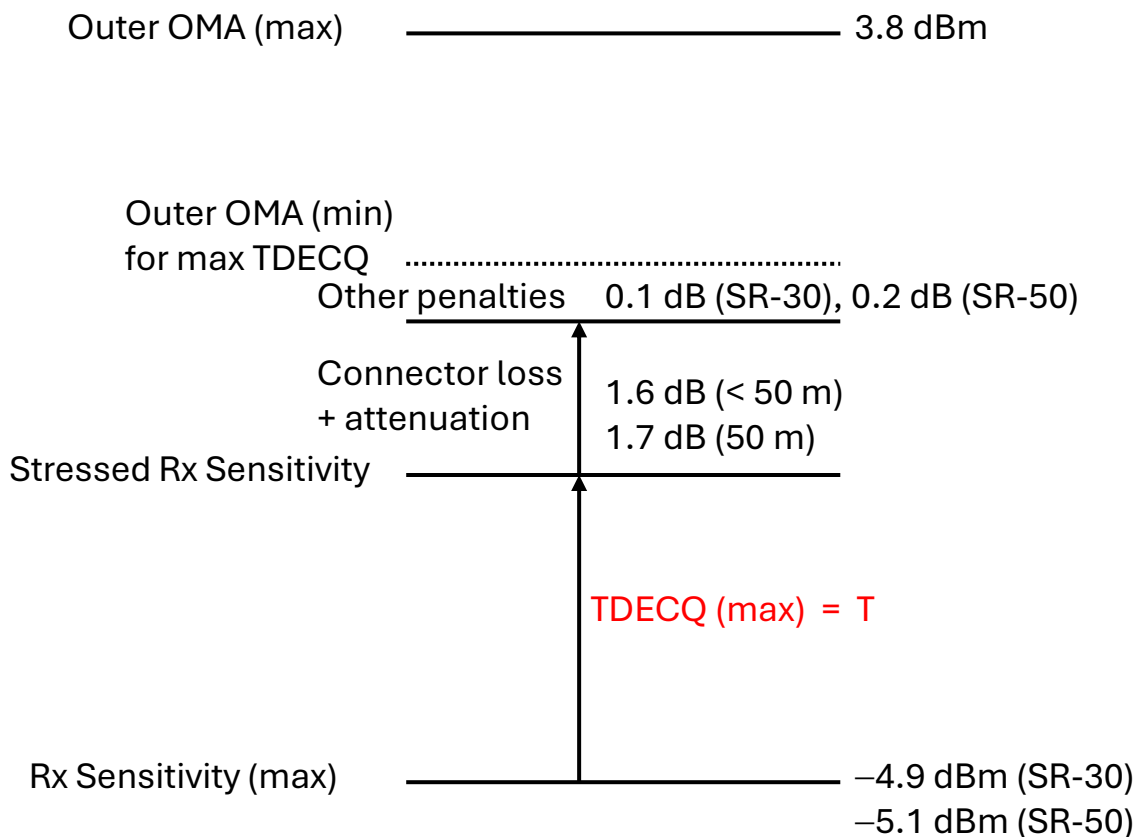
Background

The values for stress receiver sensitivity, power budget, allocation for penalties and TECQ are related or influenced by the limit TDECQ (max).

The relationship is presented in the following slides with the following considerations:

- Channel insertion loss is calculated with a fiber attenuation of 3 dB/km and 1.5 dB connector loss, and rounded off to the nearest 0.1 dB
- Modal and mode partition noise penalty is 0.1 dB for the SR-30 links, and 0.2 dB for the SR-50 and MR links
- TECQ (max) is the same as TDECQ (max)

Power Budget (850 nm)



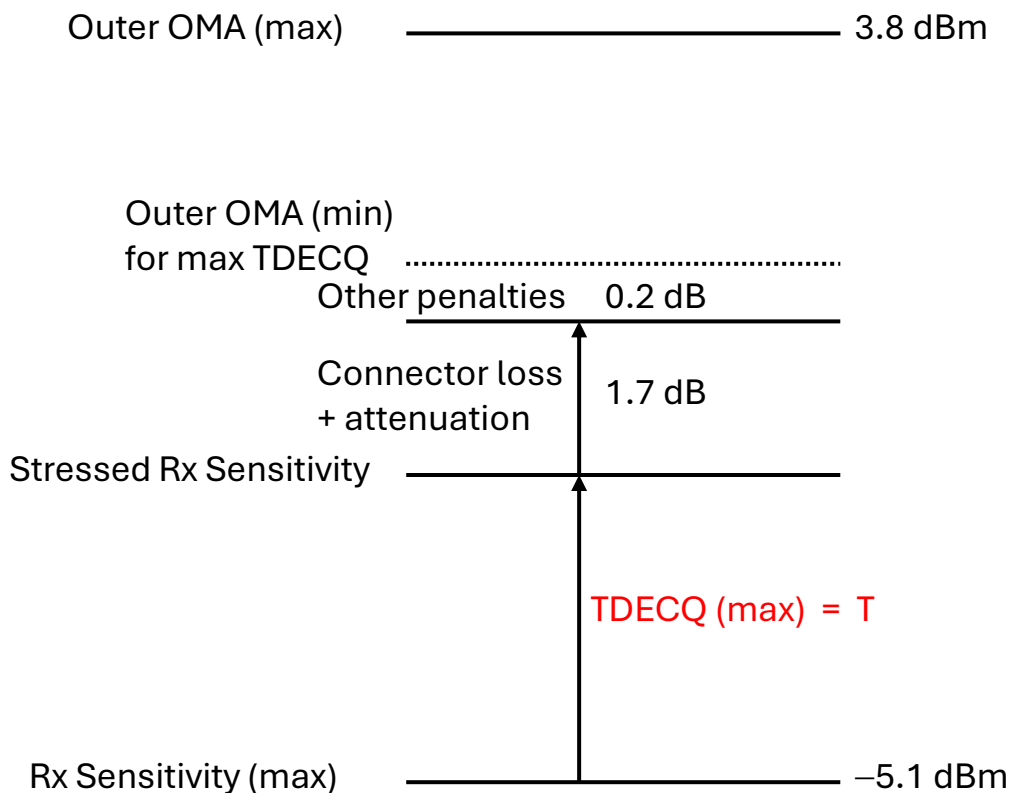
PMD	MMF			
SRx-50	OM3	0.5 to 15 m	OM4	0.5 to 30 m
	OM5	0.5 to 30 m	OMz	0.5 to 30 m

Parameter	OM3	OM4	OM5	OMz	Unit
Power budget (for max TDECQ)	$T + 1.7$				dB
Channel insertion loss	1.6				dB
Allocation for penalties (for max TDECQ)	$T + 0.1$				dB
Additional insertion loss allowed	0				dB

PMD	MMF			
SRx-50	OM3	0.5 to 20 m	OM4	0.5 to 40 m
	OM5	0.5 to 45 m	OMz	0.5 to 50 m

Parameter	OM3	OM4	OM5	OMz	Unit
Power budget (for max TDECQ)	$T + 1.9$				dB
Channel insertion loss	1.6			1.7	dB
Allocation for penalties (for max TDECQ)	$T + 0.2$				dB
Additional insertion loss allowed	0.1			0	dB

Power Budget (1060 nm)



PMD	MMF
MRx	L1060_800 0.5 to 10 m
	L1060_2200 0.5 to 30 m
	L1060_4000 0.5 to 50 m

Parameter	MMF	Unit
Power budget (for max TDECQ)	$T + 1.9$	dB
Channel insertion loss*	1.7	dB
Allocation for penalties (for max TDECQ)	$T + 0.2$	dB
Additional insertion loss allowed	0	dB

* Fiber attenuation is 0.2 dB for all reaches following [lewis_3ds_01a_2605](#).

Clause 193

Table 193-5 Transmit characteristics

Outer Optical Modulation Amplitude (OMA _{outer}), each lane (min) for max (TECQ, TDECQ) ≤ 1.8 dB TBD T for 1.8 < max (TECQ, TDECQ) ≤ TBD	193.9.6	-1.4 -3.2 + max (TECQ, TDECQ)		dBm dBm
Transmitter and dispersion eye closure for PAM4 (TDECQ), each lane (max)	193.9.7	TBD T	TBD T	dB
Transmitter eye closure for PAM4 (TECQ), each lane (max)	193.9.8	TBD T		dB

Table 193-6 Receive characteristics

Receiver sensitivity (OMA _{outer}), each lane ^c (max) for TECQ ≤ 1.8 dB TBD T for 1.8 dB < TECQ ≤ TBD	193.9.14	-3.1 -4.9 + TECQ	-3.3 -5.1 + TECQ	dBm dBm
Stressed receiver sensitivity (OMA _{outer}), each lane ^c (max)	193.9.15	TBD -4.9 + T	TBD -5.1 + T	dBm
Conditions of stressed receiver sensitivity test: ^d				
Stressed eye closure for PAM4 (SECQ), lane under test	—	TBD T		dB

Clause 194

Table 194-5 Transmit characteristics

Outer Optical Modulation Amplitude (OMA _{outer}), each lane (min) for max (TECQ, TDECQ) ≤ 1.8 dB T for 1.8 < max (TECQ, TDECQ) ≤ TBD	194.9.6	-1.4 $-3.2 + \max(\text{TECQ}, \text{TDECQ})$	 dBm dBm
Transmitter and dispersion eye closure for PAM4 (TDECQ), each lane (max)	194.9.7	TBD T	dB
Transmitter eye closure for PAM4 (TECQ), each lane (max)	194.9.8	TBD T	dB

Table 194-6 Receive characteristics

Receiver sensitivity (OMA _{outer}), each lane ^c (max) for TECQ ≤ 1.8 dB T for 1.8 dB < TECQ ≤ TBD	194.9.14	-3.3 $-5.1 + \text{TECQ}$	 dBm dBm
Stressed receiver sensitivity (OMA _{outer}), each lane ^c (max)	194.9.15	TBD -5.1 + T	dBm
Conditions of stressed receiver sensitivity test: ^d			
Stressed eye closure for PAM4 (SECQ), lane under test	—	TBD T	dB