

40Gbps QSFP+ 10km Transceiver CLQSFP40GLR4

Product Features:

- 4 channels full-duplex transceiver module
- Up to 11.2Gbps data links per channel
- Maximum link length of 10Km
- 4 CWDM lanes MUX/DEMUX design
- Built-in digital diagnostic functions
- Hot-pluggable QSFP+ form factor
- Single 3.3V power supply
- Operating temperature: 0°C to 70°C
- RoHS 6 compliant(lead free)
- Digital Diagnostic Monitor(DDM)
- Power Consumption < 3.5W



Functional Characteristics (Optical)

The following tables list the performance specifications for the various functional blocks of the integrated optical transceiver module.

Table 1 – Transmitter Optical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Wavelength Assignment	L0	1264.5	1271	1277.5	nm	
	L1	1284.5	1291	1297.5	nm	
	L2	1304.5	1311	1317.5	nm	
	L3	1324.5	1331	1337.5	nm	
Side-mode Suppression Ratio	SMSR	30	-	-	dB	
Total Average Launch Power	P _T	-	-	8.3	dBm	
Average Launch Power, each Lane		-7	-	5	dBm	
Optical Modulation Amplitude, each Lane	OMA	-4	-	+5	dBm	
Difference in Launch Power between any two Lanes (OMA)		-	-	4	dB	
Launch Power in OMA minus Transmitter and Dispersion Penalty (TDP), each Lane		-4.8	-		dBm	
TDP, each Lane	TDP			2.3	dB	
Extinction Ratio	ER	4	-	-	dB	
Relative Intensity Noise	R _{in}	-	-	-128	dB/Hz	12dB reflection
Optical Return Loss Tolerance		-	-	20	dB	
Transmitter Reflectance	R _T			-12	dB	
Transmitter Eye Mask Definition {X1, X2, X3, Y1, Y2, Y3}		{0.25,0.4,0.45,0.25,0.28,0.4}			ps	
Average Launch Power OFF Transmitter, each Lane	P _{off}			-30	dBm	



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Table 2 – Receiver Optical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit	Notes
Center Wavelength	λ_c	1260	1310	1360	nm	
Damage Threshold	TH _d	3.3			dBm	1
Average Power at Receiver Input, each Lane		-13.7		2.3	dBm	
Receiver Reflectance	R _R	-	-	-26	dB	
Receiver Power (OMA), each Lane		-	-	3.5	dBm	
Stressed Receiver Sensitivity in OMA, each Lane		-	-	-11.5	dBm	
Receiver Sensitivity, each Lane	S _R	-	-	-13	dBm	
Difference in Receive Power between any two Lanes (OMA)				7.5	dB	
Receive Electrical 3 dB upper Cutoff Frequency, each Lane				12.3	GHz	
Signal Loss Assert Threshold	LOSA	-20			dBm	
Signal Loss Dessert Threshold	LOSD			-15	dBm	
LOS Hysteresis	LOSH	0.5		6	dBm	
Conditions of Stress Receiver Sensitivity Test ²						
Vertical Eye Closure Penalty, each Lane			1.6		dB	
Stressed Eye Jitter, each Lane			0.3		UI	

Notes1: The receiver shall be able to tolerate, without damage, continuous exposure to a modulated optical input signal having this power level on one lane. The receiver does not have to operate correctly at this input power.

Notes2: Vertical eye closure penalty and stressed eye jitter are test conditions for measuring stressed receiver sensitivity. They are not characteristics of the receiver.

Ordering Information

Table 3 - Ordering Information

Part No.	Data Rate	DDM	Laser Source	Fiber Type	Dist.	Temp.	Optical Interface
CLQSFP40GLR4	40Gbps	Yes	1310nm	SMF	10km	0~70℃	LC

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