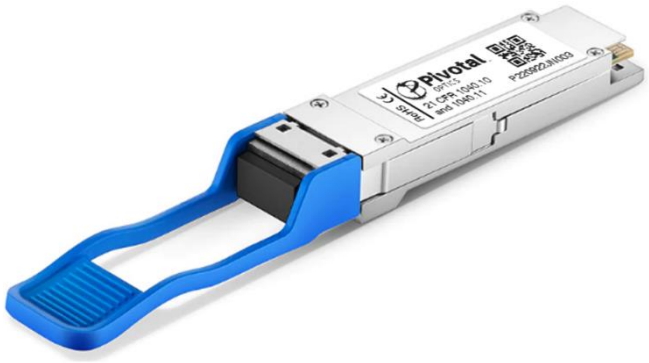
QSFP-40G-LR4

40GBase QSFP+ LR4 1271-1331nm 10kmTransceiver

Product Features

- Support up to 11.3Gbps per channel
- QSFP+ MSA compliant
- Compliant with QDR/DDR InfiniBand data rates
- Maximum link length of 10km over SMF
- Hot pluggable electrical interface
- +3.3V power supply
- RoHS-6 Compliant
- LC Duplex connector
- Maximum power consumptions: 3.5 W
- Case operating temperature:
  - Commercial: 0 ~ 70°C



Product Applications

- 40GBASE-LR Ethernet

I. Maximum Ratings

Exceeding the limits below may damage the transceiver module permanently.

Parameter	Symbol	Min.	Typ.	Max	Units	Notes
Storage Temperature	Ts	-40		85	ºC	
Relative Humidity	RH	5		95	%	
Power Supply Voltage	VCC	-0.3		4	V	
Signal Input Voltage		Vcc-0.3		Vcc+0.3	V	

II. Operating Specifications

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Operating Case Temperature	Top	0		70	°C	Commercial
Power Supply Voltage	VCC	3.13	3.3	3.47	V	
Power Supply Current	ICC			760	mA	
Data Rate	BR		10.3125		Gbps	each channel
Transmission Distance	TD			10	km	
Coupled Fiber	Single Mode Fiber				9/125um SMF	

III. Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Center Wavelength	λC	1264.5	1271	1277.5	nm	
		1284.5	1291	1297.5		
		1304.5	1311	1317.5		
		1324.5	1331	1337.5		
Total Output. Power	POUT			8.3	dBm	
Average Launch Power Per lane		-7		2.3	dBm	
Spectral Width (-20dB)	σ			1	nm	
SMSR		30			dB	
Optical Extinction Ratio	ER	3.5			dB	
Average launch Power off per lane	Poff			-30	dBm	
RIN	RIN			-128	dB/Hz	
Total Output. Power	POUT			8.3	dBm	
Transmitter Eye Mask definition {X1, X2, X3, Y1, Y2, Y3}		0.25,0.4,0.45,0.25,0.28,0.4				
Receiver						
Center Wavelength	λC	1264.5	1271	1277.5	nm	
		1284.5	1291	1297.5		
		1304.5	1311	1317.5		
		1324.5	1331	1337.5		
Rx Sensitivity per lane (OMA)	RSENS			-11.5	dBm	1
Input Saturation Power (Overload)	Psat	2.3			dBm	
Receiver Reflectance	Rr			-26	dB	

Notes:

1. Measured with a PRBS 2^{31}-1 test pattern, @10.325Gb/s, BER<10^{-12}

IV. Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Supply Voltage	Vcc	3.135	3.3	3.465	V	
Supply Current	Icc			1000	mA	
Transmitter						
Input differential impedance	Rin		100		Ω	1
Differential data input swing	Vin,pp	180		1000	mV	
Transmit Disable Voltage	VD	Vcc–1.3		Vcc	V	
Transmit Enable Voltage	VEN	Vee		Vee+ 0.8	V	2
Transmit Disable Assert Time				10	us	
Receiver						
Differential data output swing	Vout,pp	300		850	mV	3
Data output rise time	tr	28			ps	4
Data output fall time	tf	28			ps	4
LOS Fault	VLOS fault	Vcc–1.3		VccHOST	V	5
LOS Normal	VLOS norm	Vee		Vee+0.8	V	5

Notes:

1. Connected directly to TX data input pins. AC coupled thereafter.
2. Or open circuit.
3. Into 100 ohms differential termination.
4. 20 – 80 %.
5. Loss Of Signal is LVTTL. Logic 0 indicates normal operation; logic 1 indicates no signal detected.

Warranty

All transceivers feature a limited lifetime warranty.

Disclaimer

External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.