

## XQSCN3-10LY

40G QSFP+ LR4 10 km SMF  
Optical Transceiver



### Applications

- Datacenter interconnections
- 40Gbase Ethernet links
- 40G Telecom connections QDR/DDR Infiniband links

### Description

This module is compliant with QSFP+ SFF-8436 MSA for mechanical, low speed electrical and 2-wire serial management interface for control and real-time monitoring. It supports 40 Gbps data rates links from 2 m to 10 km over a standard SMF. It incorporates QSFP+ footprint (Quad Small Form-factor Pluggable) with 2 unidirectional LC SMF optical connector receptacles and 38 pin hot pluggable edge connector electrical interface based on QSFP+ MSA. The transmitter consists of a retimed quad input, 4 un-cooled CWDM DFB lasers operating on the ITU G.694.2 wavelength grid at 1271, 1291, 1311 and 1331nm and multiplexed into a single SMF output. The receiver consists of a CWDM de-multiplexer, a quad photodiode receiver with a limiting electrical interface and output amplitude control. It provides Bias and Transmit Power Monitoring (TPM) for each of the 4 transmitter channels, RSSI Monitoring for each of the 4 receiver channels, monitoring of the voltage supplies and case temperature, Module Present and Interrupt signals Input control pins for Module Select, Module Reset and Low Power Modes It supports operation for a case temperature of 0°C to +70°C. It includes customized coding option for module security implementation.

### Features

- Transmission data rate up to 11.2 Gbps per channel
- QSFP+ MSA compliant
- Compliant to IEEE 802.3ba specification for 40GBASE-LR4 links
- 4 CWDM un-cooled DFB lasers, using ITU G.694.2 wavelength grid at 1270, 1290, 1310 and 1330 nm
- High Sensitivity PIN-TIA with optical DEMUX
- Up to 10 km reach over standard single mode fiber
- Compliant with QDR/DDR Infiniband data rates
- Hot pluggable electrical interface
- Low power consumption
- Single 3.3 V power supply
- RoHS 6 compatible (lead free)
- Operating case temperature 0 °C to +70 °C (Standard)

### Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temperature	T <sub>S</sub>	-40	85	°C
Operating Case Temperature	T <sub>OP</sub>	0	70	°C
Relative Humidity (non-condensation)	RH	10	90	%
Damage Threshold per Lane	P <sub>IN</sub>	3.3		dBm
Supply Voltage	V <sub>CC</sub>	0	4	V

### Recommended Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Operating Case Temperature	T <sub>OP</sub>	0	25	70	°C
Supply Voltage	V <sub>CC</sub>	3.14	3.3	3.46	V
Power consumption	P <sub>DISS</sub>			3.5	W
Power consumption – LP mode	P <sub>DISS-LP</sub>			1.5	W

### Optical Specifications

Transmitter Parameter	Lane	Min	Typical	Max	Units
Signaling rate, each lane	10.3125 ± 100 ppm				Gb/s
Lane Wavelength Range	Lane 0	1264.5	1271	1277.5	nm
	Lane 1	1284.5	1291	1297.5	nm
	Lane 2	1304.5	1311	1317.5	nm
	Lane 3	1324.5	1331	1337.5	nm
Average Optical Power per lane		-7		2.3	dBm
Total Average Launch Power				8.3	dBm
Optical Modulation Amplitude (OMA), each lane		-4		3.5	dBm
Transmitter and Dispersion Penalty (TDP) each lane				2.6	dB
Average Launch Power per Lane @ TX Off State				-30	dBm
Extinction Ratio		3.5			dB
Relative Intensity Noise (OMA)				-128	dB/Hz
Side-Mode Suppression Ration (SMSR)		30			dB
Optical Return Loss Tolerance				20	dB
Transmitter Reflectance				-12	dB
Transmitter Output Power Monitoring Accuracy		-3		3	dB
Transmitter Eye Mask Definition {X1, X2, X3, Y1, Y2, Y3}	{0.25, 0.4, 0.45, 0.25, 0.28, 0.4}				

Receiver Parameter	Lane	Min	Typical	Max	Units
Signaling rate, each lane	10.3125 ± 100ppm				Gb/s
Lane Wavelength Range	Lane 0	1264.5	1271	1277.5	nm
	Lane 1	1284.5	1291	1297.5	nm
	Lane 2	1304.5	1311	1317.5	nm
	Lane 3	1324.5	1331	1337.5	nm
Damage Threshold		3.3			dBm
Average Receive Power, each lane		-13.7		2.3	dBm
Receiver Power, each lane (OMA)				3.5	dBm
Receiver Reflectance				-26.0	dB
Receiver Sensitivity (OMA) per lane 10.3125Gb/s @PRBS 2 <sup>31</sup> -1 and BER=1-12				-11.5	dBm
RSSI Accuracy		-3.0		3.0	dB

### Ordering information<sup>1</sup>

Part number	Product Description
XQSCN3-10LY	QSFP+ LR4 SMF 40G Transceiver, 10 km, LC, 0-70°C, DDM

#### Notes

<sup>1</sup> For accurate order specification please contact XenOpt reseller before placing an order. The content of this document is subject to change without notice. XenOpt does not guarantee errorless or outdated information.

Please specify any compatibility requirements at time of ordering. Standard MSA compatible pluggable components may not work or some function of these components may not be available in devices that require customized compatible devices. Pluggable components compatible with one type of communications equipment may not work in other type of communications equipment.

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