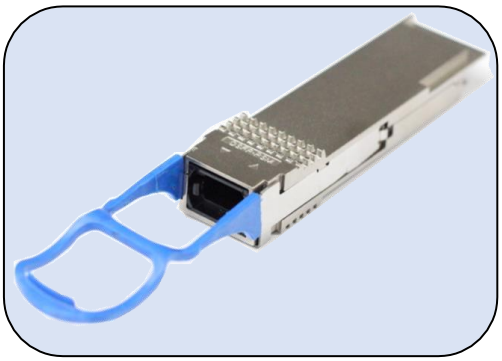
XQS313-10PY

4 x 10GBASE-LR/W QSFP+ Parallel Single Mode (PSM) Module 10 km



Features

- Full duplex 4 channel 1310nm parallel module
- SFF-8436 QSFP+ compliant
- Hot pluggable electrical interface
- Differential AC-coupled high speed data interface
- 4 channels 1310 nm DFB laser
- 4 channels PIN photo detector array
- Maximum link length of 10 km on G652
- Single male MPO (APC 8-degree) connector receptacle
- Maximum power consumption 2.5 W
- Housing isolated from connector ground
- Operating case temperature: 0°C to 70°C
- 3.3 V power supply voltage
- RoHS compliant

Applications

- Infiniband Connectivity SDR/DDR/QDR
- 10GBASE-LR/W 10G Ethernet
- 2/4/8 Gbps Fiber Channel
- Data Centers and Storage Arrays

Description

QSFP PSM LR4 is an assembly of 4 full-duplex lanes, where each lane is capable of transmitting data at rates up to 10.3125Gb/s, providing an aggregated rate of 40Gb/s.

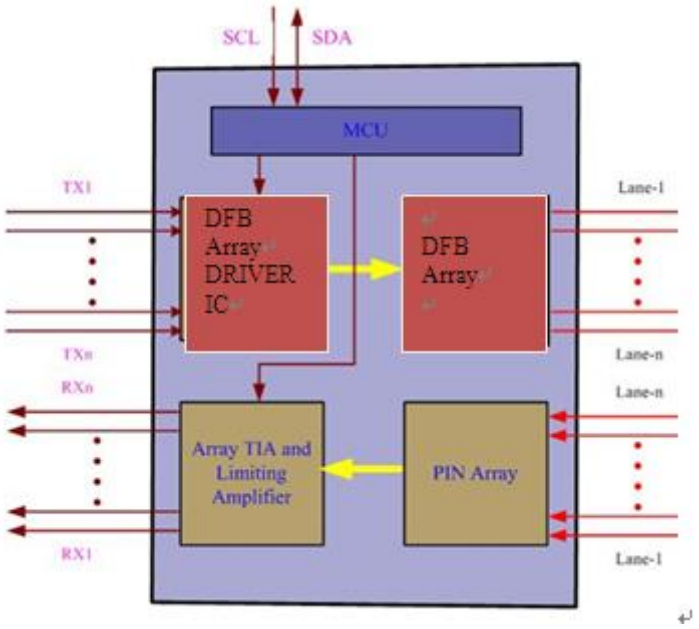


Figure 1. Module Block Diagram

Absolute Maximum Ratings

Parameters	Symbol	Min.	Max.	Unit
Supply Voltage	V_{CC}	-0.3	3.6	V
Input Voltage	V_{in}	-0.3	V_{CC} +0.3	V
Storage Temperature	T_{st}	-20	85	°C
Operating Case Temperature	T_{op}	0	70	°C
Humidity (non-condensing)	R_h	5	85	%

Recommended operating conditions

Parameter	Symbol	Min.	Typical	Max	Unit
Supply Voltage	V_{CC}	3.13	3.3	3.47	V
Operating Case Temperature	T_{ca}	0		70	°C
Data Rate Per Lane	f_d			10.3125	Gbps
Humidity	R_h	5		85	%
Power Dissipation	P_m			3.5	W
Link Distance with G652	R_b	D		10	km

Electrical specifications

Parameter	Symbol	Min	Typical	Max	Unit
Differential input impedance	Zin	90	100	110	ohm
Differential Output impedance	Zout	90	100	110	ohm
Differential input voltage amplitude	ΔVin	350		1200	mVp-p
Differential output voltage amplitude	ΔVout	425		1600	mVp-p
Skew	Sw			300	ps
Bit Error Rate	BR			E-12	
Input Logic Level High	VIH	2.0		VCC	V
Input Logic Level Low	VIL	0		0.8	V
Output Logic Level High	VOH	VCC-0.5		VCC	V
Output Logic Level Low	VOL	0		0.4	V

Note

1. BER=10^-12; PRBS 2^31-1@10.3125Gbps.
2. Differential input voltage amplitude is compliant with theIEEE802.3 Annex 86A and SFF8436, and it is measured at TP1.
3. Differential output voltage amplitude is compliant with theIEEE802.3 Annex 86A and SFF8436, and it is measured at TP4.

Optical Characteristics

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Centre Wavelength	λc	1290	1310	1330	nm	-
SMSR	σ	30	-		dB	-
Transmit OMA per Lane	TxOMA	-5.2		3.0	dBm	
Average launch power, each lane	Pout	-8.2	-	0.5	dBm	-
Difference in launch power between any two lanes (OMA)	Ptx, diff			6.5	dB	-
Extinction Ratio	ER	3.5	-	-	dB	-
Transmitter and dispersion penalty (TDP), each lane	TDP			2.6	dB	-
Average launch power of OFF transmitter, each lane	Poff			-30	dBm	-
Optical Return Loss Tolerance (max)	RL_T			12	dB	
Transmitter Reflectance	R_T			-12	dB	
Eye Mask coordinates: X1, X2, X3, Y1, Y2, Y3	SPECIFICATION VALUES 0.25, 0.4, 0.45, 0.25, 0.28, 0.4					Hit Ratio = 5x10-5
Receiver						
Centre Wavelength	λc	1290	1310	1330	nm	-
Stressed receiver sensitivity in OMA, each lane	SEN			-10.3	dBm	1
Receiver sensitivity in OMA, each lane (PRBS 2^31-1 and BER=10^-12)				-12.6	dBm	2
Maximum Average power at receiver input, each lane				0.5	dBm	-
Difference in Receive Power between any Two Lanes (OMA)	Prx, diff			7.5	dB	
Receiver Reflectance	R_R			-26	dB	-
LOS Assert	LOSA	-30			dBm	-
LOS De-Assert	LOSD			-14	dBm	-
LOS Hysteresis	LOSH	0.5			dB	-

Notes

1. Measured with conformance test signal at TP3 for BER = 10e-12
2. 10GBASE-LR spec.

Ordering information[1]

PN	Description
XQS313-10PY	QSFP+ PSM LR4, 4 x 10GBASE-LR/W, 10 km, MPO connector, 0°C ~ +70°C, DDM

Notes:
[1] Specification may change without notice. For accurate specification please contact XenOpt reseller before placing an order. The content of this document is subject to change without notice. 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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