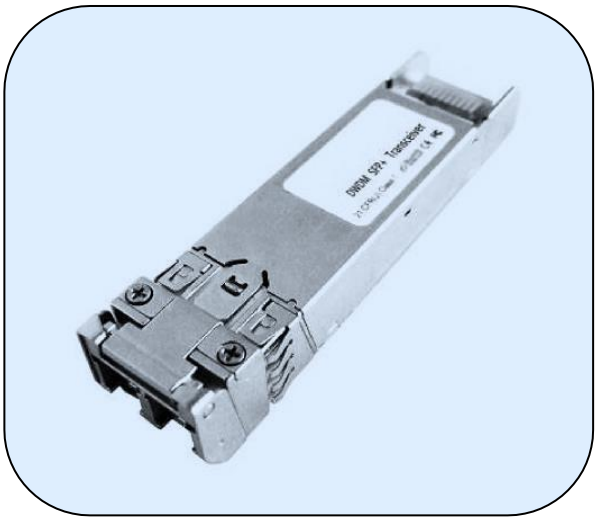
XTCxxA-10LY

10 km CWDM SFP+ Optical Transceiver 1270 nm~1610 nm



Features

- Compliant with SFF-8431, SFF-8432 and IEE802.3ae
- CWDM DFB transmitter from 1270 nm to 1610 nm
- PIN photo-detector
- Low power consumption
- Applicable for 10 km SMF connection
- All-metal housing for superior EMI performance
- Advanced firmware allow customer system encryption information to be stored in transceiver
- Cost effective SFP+ solution, enables higher port densities and greater bandwidth
- RoHS6 compliant (lead free)
- Operating case temperature: 0°C to 70 °C

Applications

- 10G Ethernet
- 10G Fibre Channel

Description

XenOpt's SFP+ CWDM Transceiver is a "Limiting module", designed for 10G Ethernet and 10G Fiber-Channel applications.

The transceiver consists of two sections: the transmitter section incorporates a DFB laser and the receiver section consists of a PIN photodiode integrated with a TIA. All modules satisfy class I laser safety requirements. Digital diagnostics functions are available via a 2-wire serial interface, as specified in SFF-8472, which allows real-time access to device operating parameters such as transceiver temperature, laser bias current, transmitted optical power, received optical power and transceiver supply voltage.

Absolute maximum rating

Parameters	Symbol	Min.	Max.	Unit
Power Supply Voltage	V_{CC}	0	+3.6	V
Storage Temperature	Tc	-40	+85	°C
Operating Case Temperature	Tc	0	+70	°C
Relative Humidity	RH	0	85	%
RX Input Average Power	Pmax	-	0	dBm

These values represent the damage threshold of the module. Stress in excess of any of the individual Absolute Maximum Ratings can cause immediate catastrophic damage to the module even if all other parameters are within Recommended Operating Conditions.

Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Supply Voltage	Vcc	3.13	3.3	3.47	V
Supply current	Icc	-	-	360	mA
Operating Case temperature	Tca	-5	-	70	°C
Module Power Dissipation	Pm	-	-	1.5	W

Electrical characteristics

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Data Rate		0.6	10.3125	11.3	Gbps	
Power Consumption		-	1200	1500	mW	
Transmitter						
Input differential impedance	Rin		100		Ω	1
Differential data input swing	Vin, pp	180		700	mV	
Tx Fault	VoL	-0.3		0.4	V	
Data Dependent Input Jitter	DDJ			0.10	UI	
Data Input Total Jitter	TJ			0.28	UI	
Receiver						
Differential data output swing	Vout, pp	300		850	mV	2
Rx Output Rise and Fall Time	Tr/Tf	28		50	ps	3
Total Jitter	TJ			0.70	UI	
Deterministic Jitter	DJ			0.42	UI	

Notes

1. Connected directly to TX data input pins. AC coupling from pins into laser driver IC.
2. Into 100 Ω differential termination.
3. 20 – 80%. Measured with Module Compliance Test Board and OMA test pattern. Use of four 1's and four 0's sequence in the PRBS 9 is an acceptable alternative. SFF-8431 Rev 3.0.

Optical characteristics

The following optical characteristics are defined over the Recommended Operating Environment unless otherwise specified.

Parameter	Symbol	Unit	Min	Max	Note
Transmitter					
Center wavelength	λ	nm	(λ -6.5)	(λ +6.5)	5
Side Mode Suppression Ratio	SMSR	dB	30		
Average launched power	Pave	dBm	-8.2	+2	1
Optical Modulation Amplitude (OMA)	Poma	dBm	-2.5		
Transmitter and dispersion penalty	TDP	dB		3.2	3, 4
Average launch power of OFF transmitter	Poff	dBm		-30	
Extinction ratio	ER	dB	3.5		2
Relative Intensity Noise		dB/Hz		-128	
Optical Return Loss Tolerance	RIN	dB	12		
Receiver					
Center wavelength	λ	nm	1260	1610	
Receive overload	Pave	dBm		+0.5	
Receive sensitivity	Rsen	dBm		-14.4	3
Receiver sensitivity in OMA (footnote 2)	Rsen-oma	dBm		-12.6	
Receiver Reflectance (max)	Rrx	dB		-12	
Stressed receiver sensitivity (max) in OMA2	RSENS_Stress	dBm		-10.3	

Notes

1. The optical power is launched into SMF
2. Measured with a PRBS 2^{31}-1 test pattern@10.3125Gbps
3. Measured with a PRBS 2^{31}-1 test pattern@10.3125Gbps BER≤10^{-12}
4. In G.652 and G.655 (NDSF)
5. The available transmitter center wavelengths (λ) are: 1271 nm, 1291 nm, 1311 nm, … and 1610 nm

Ordering information[1]

Part number	Product Description
XTCxxA-10LY	CWDM SFP+, 11.3 Gb/s, 1270~1610 nm with 20 nm Spacing, 10 km, SMF, Duplex LC, DDMI, 0°C ~ 70°C, xx=27~61

Notes

[1] 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.

To find out more, please contact: