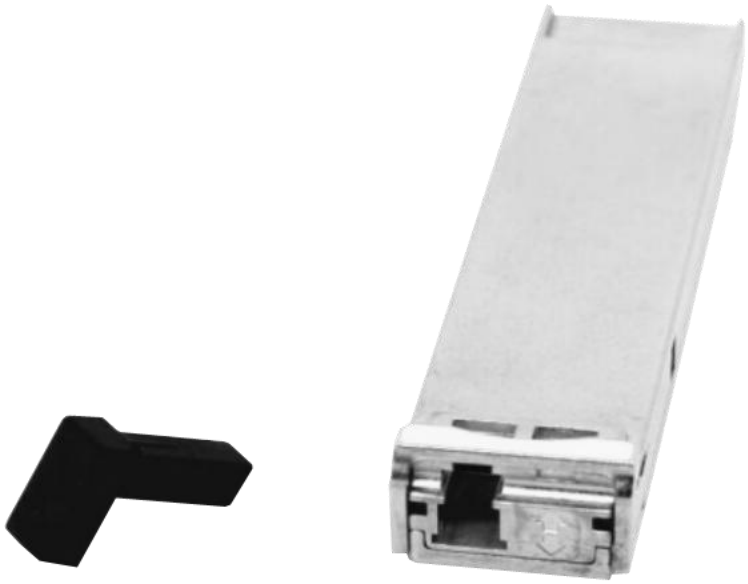
Product Specification Sheet

OLXBxx1XL-CD80

RoHS Compliant 10Gb/s XFP Bi-Directional Transceiver, 80km Reach

1490/1550nm TX / 1550/1490 nm RX



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Product Features

●Supports 9.95 to 11.3Gb/s bit rates
●Simplex LC Connector
●Hot-pluggable XFP footprint
●Cooled 1490nm EML transmitter, 1550nm APD receiver
●Cooled 1550nm EML transmitter, 1490nm APD receiver
●Applicable for 80km SMF connection
●Low power consumption, < 3.5W
●Digital Diagnostic Monitor Interface
●Optical interface compliant to IEEE 802.3ae 10GBASE-ZR
●Electrical interface compliant to SFF-8431
●Operating case temperature:
Commerical:0 to 70 °C

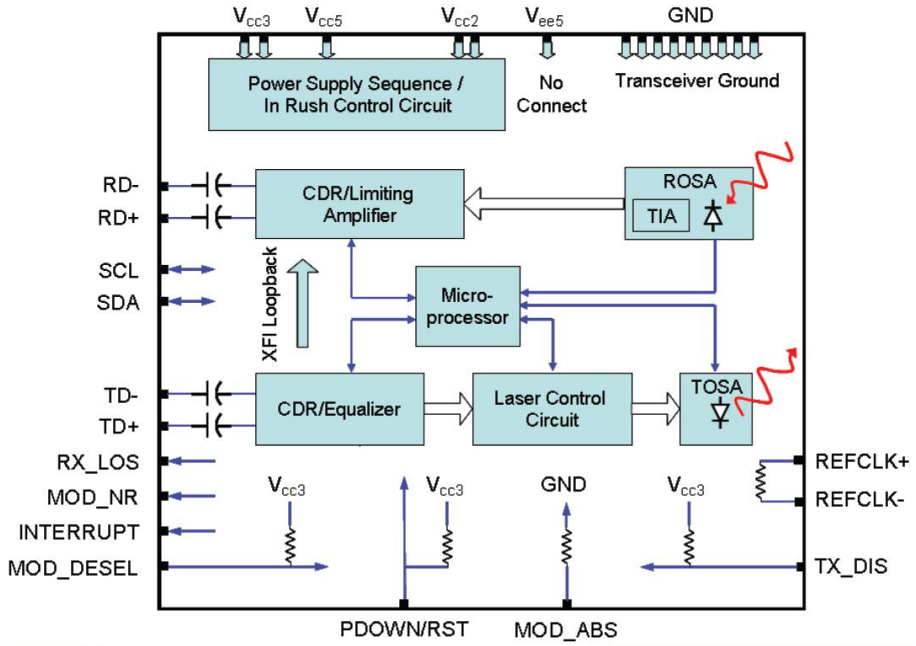
Applications

●10GBASE-BX 10.3125Gb/s Ethernet
●10GBASE-BX 9.953Gb/s Ethernet
●SONET OC-192 &SDH STM I-64.1
●Other optical link

Product Descriptions

Olinkphotonics' OLXBxx1XL-CD80 transceivers are designed for 10G Ethernet 10G, and it can supportdata-rate from 9.953Gb/s to 11.3Gb/s.Digital diagnostics are avail-able via I2C interface as specified in the XFP MSA.The transceiver designs are optimized for high per-formance and cost effective to supply customers the best solutions for data-com and telecom applications.

Functional Diagram



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Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Note
Supply Voltage	Vcc	-0.5	4.0	V	
Storage Temperature	Ts	-40	85	℃	
Relative Humidity	RH	0	85	%	

Note: Stress in excess of the maximum absolute ratings can cause permanent damage to the transceiver.

General Operating Characteristics

Parameter	Symbol	Min.	Typ	Max.	Unit	Note
Data Rate	D_R	9.95	10.3125	11.3	Gb/s	
Supply Voltage	Vcc	3.13	3.3	3.47	V	
Supply Current	Icc_s			450	mA	
Operating Case Temp.	Tc	0		70	℃	

Electrical Characteristics ($T_{OP(C)}$ = 0 to 70 ℃, V_{CC} = 3.13 to 3.47 V)

Parameter	Symbol	Min.	Typ	Max.	Unit	Note
Transmitter						
Differential data input swing	$V_{IN,PP}$	120		850	mV_{pp}	1
Transmit Disable Voltage	V_D	Vcc-0.8		Vcc	V	
Transmit Enable Voltage	V_{EN}	Vee		Vee+0.8		
Input differential impedance	Rin		100		Ω	
Receiver						
Differential data output swing	$V_{out,pp}$	300		850	mV_{pp}	2
Output rise time and fall time	Tr, Tf	28			Ps	3
LOS asserted	V_{LOS_F}	Vcc-0.8		Vcc	V	4
LOS de-asserted	V_{LOS_N}	Vee		Vee+0.8	V	4

Notes:

1. Connected directly to TX data input pins. AC coupling from pins into laser driver IC.
2. Into 100Ω 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.
4. LOS is an open collector output. Should be pulled up with 4.7kΩ – 10kΩ on the host board. Normal operation is logic 0; loss of signal is logic 1.

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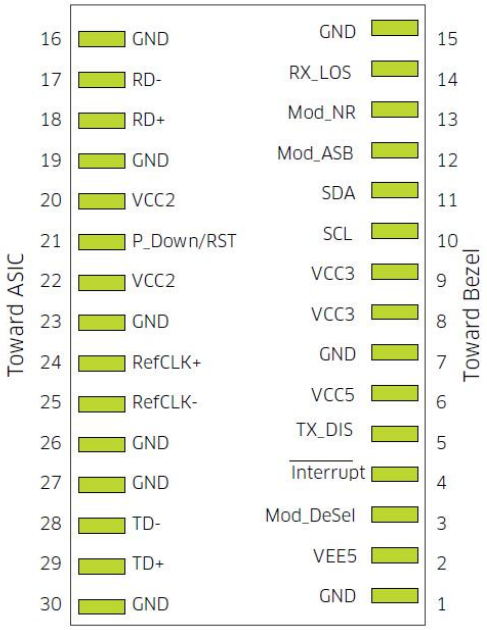
Optical Characteristics ($T_{OP(C)}$ = 0 to 70 ℃, V_{CC} = 3.13 to 3.47 V)

Parameter	Symbol	Min.	Typ	Max.	Unit	Note
Transmitter						
Operating Wavelength	λ	1470	1490	1510	nm	
		1530	1550	1565		
Ave. output power (Enabled)	P_{AVE}	0		5	dBm	1
Side-Mode Suppression Ratio	SMSR	30			dB	
Extinction Ratio	ER	9			dB	
RMS spectral width	Δλ			1	nm	
Rise/Fall time (20%~80%)	Tr/Tf			50	ps	
Dispersion penalty	T_{DP}			3.2	dB	
Relative Intensity Noise	R_{IN}			-128	dB/Hz	
Output Optical Eye	Compliant with IEEE 0802.3ae					
Receiver						
Operating Wavelength	λ	1530	1550	1565	nm	
		1470	1490	1510		
Receiver Sensitivity	P_{SEN1}			-22	dBm	2
Overload	P_{AVE}	-7			dBm	
LOS Assert	Pa	-35			dBm	
LOS De-assert	Pd			-23	dBm	
LOS Hysteresis	Pd-Pa	0.5			dB	

Notes:

1. Average power figures are informative only, per IEEE 802.3ae.
2. Measured with worst ER=9; BER<10^{-12}; 2^{31-1} PRBS.

PIN DEFINITIONS AND FUNCTIONS



PIN #	Name	Function	Name/Description	Notes
1		GND	Module Ground	1
2		VEE5	Optional -5.2V Power Supply (Not requireed)	
3	LVTTL-I	MOD_DESEL	Module De-select; When held low allows the module to respond to 2-wire serial interface	
4	LVTTL-O	INTb	Interrupt; Indicates presence of an important condition which can be read via the 2-wire serial interface	2
5	LVTTL-I	TX_DIS	Transmitter Disable; Turns off transmitter laser output	
6		VCC5	+5V Power Supply (Not required)	
7		GND	Module Ground	1
8		VCC3	+3.3V Power Supply	
9		VCC3	+3.3V Power Supply	
10	LVTTL-I/O	SCL	2-Wire Serial Interface Clock	2
11	LVTTL-I/O	SDA	2-Wire Serial Interface Data Line	2
12	LVTTL-O	MOD_Abs	Indicates Module is not present. Grounded in the Module	2
13	LVTTL-O	MOD_NR	Module Not Ready; Indicating Module Operational Fault	2
14	LVTTL-O	RX_LOS	Receiver Loss Of Signal Indicator	2
15		GND	Module Ground	1
16		GND	Module Ground	1
17	CML-O	RDN	Receiver Inverted Data Output	
18	CML-O	RDP	Receiver Non-Inverted Data Output	
19		GND	Module Ground	1
20		VCC2	+1.8V Power Supply (Not required).	
21	LVTTL-I	P_DOWN/RST	Power down; When high, requires the module to limit power consumption to 1.5W or below. 2-Wire serial interface must be functional in the low power mode.	
21	LVTTL-I	P_DOWN/RST	Reset; The falling edge initiates a complete reset of the module including the2-wire serial interface, equivalent to a power cycle.	
22		VCC2	+1.8V Power Supply (Not required)	
23		GND	Module Ground	1
24	PECL-I	REFCLK+	Not used, internally terminated to 50ohm (100ohm diff).	3
25	PECL-I	REFCLK-	Not used, internally terminated to 50ohm (100ohm diff).	3
26		GND	Module Ground	1
27		GND	Module Ground	1
28	CML-I	TD-	Transmitter Inverted Data Input	
29	CML-I	TD+	Transmitter Non-Inverted Data Input	
30		GND	Module Ground	1

Notes:

1. Module circuit ground is isolated from module chassis ground within the module.

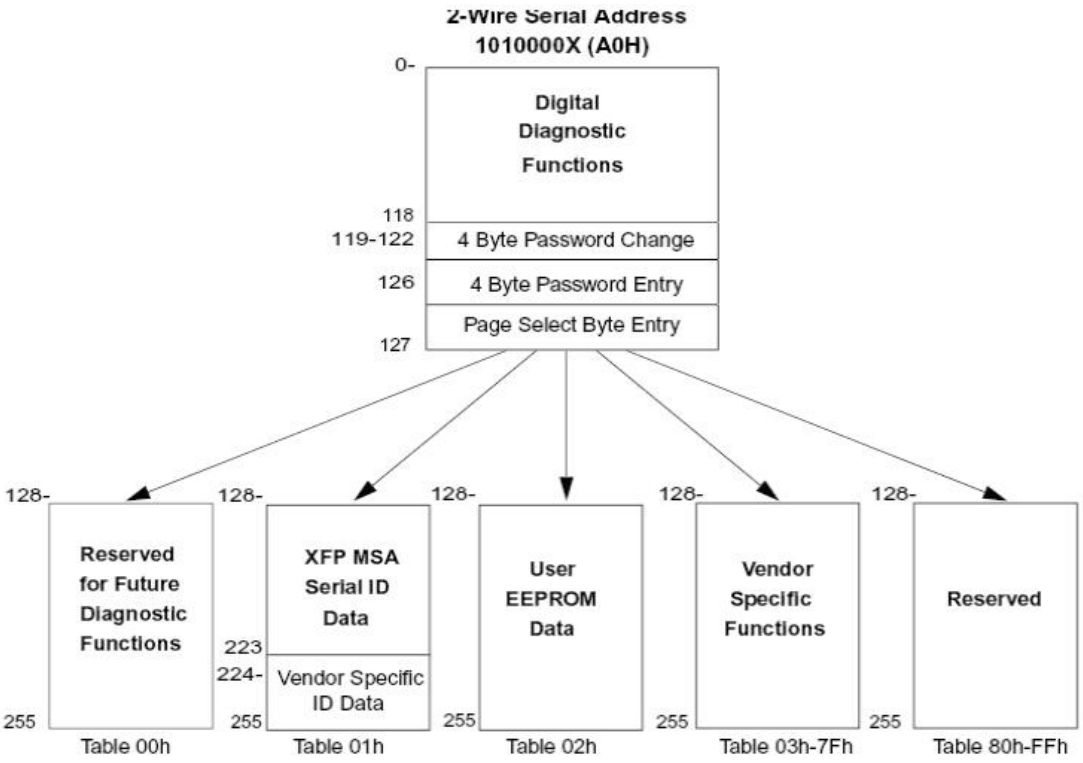
2. Open collector; should be pulled up with 4.7k – 10k ohms on host board to a voltage between 3.15Vand 3.6V.

3. Reference Clock input is not required.

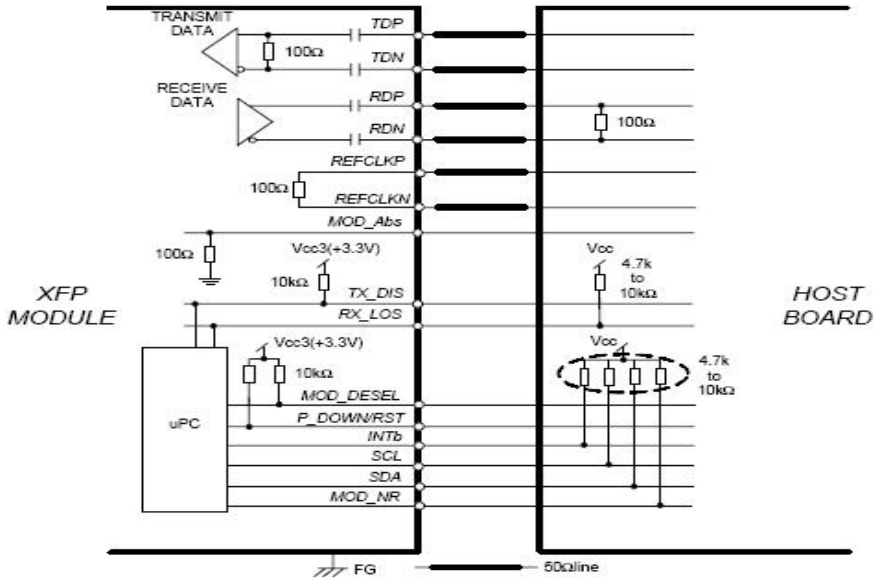
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Management Interface

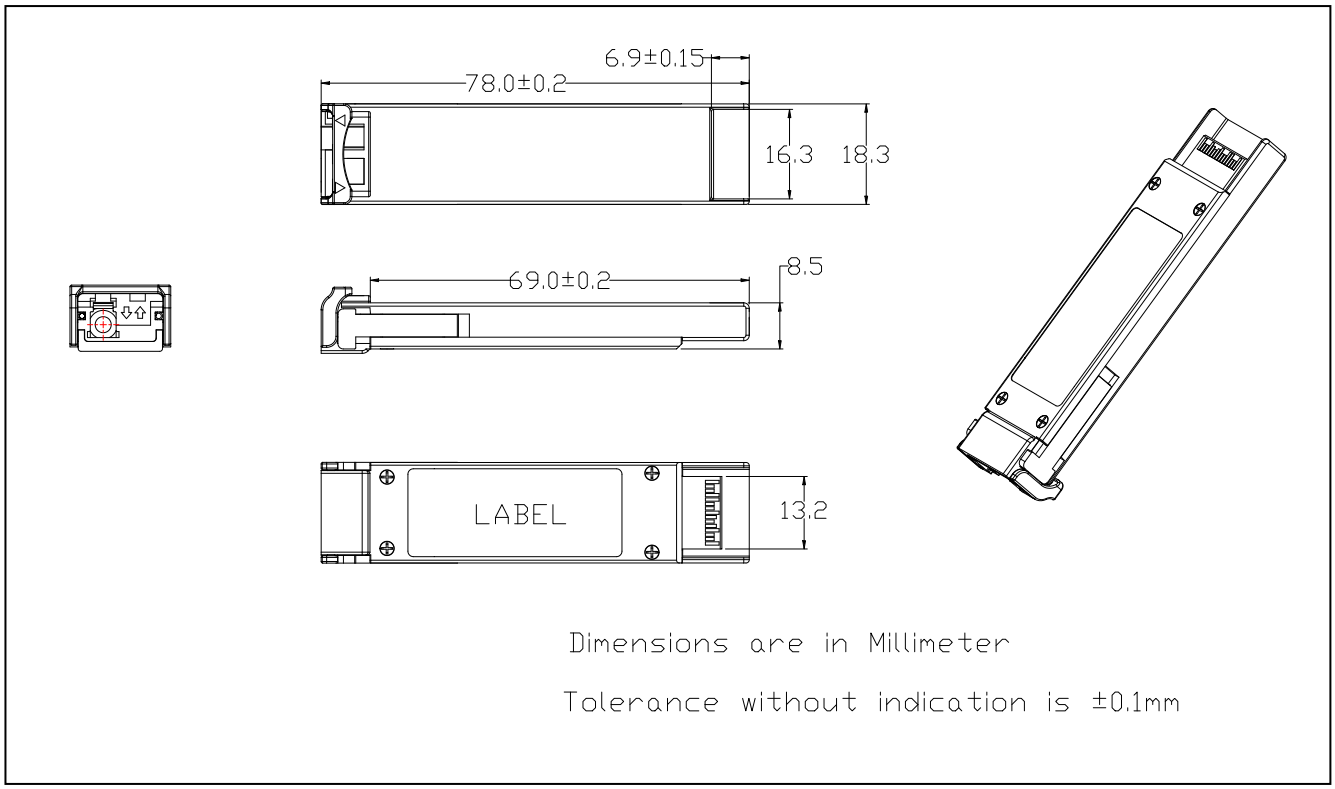
The OLXBxx1XL-CD80 incorporates an XFP-compliant, two-wire management interface which is used for serial ID, digital diagnostics, and certain control functions. It is modeled on the SFF-8472 specification modified to accommodate a single two-wire interface address. In addition to the basic I^2C read/write functionality, the modules support packet error checking that, when enabled, allows the host system to confirm the validity of any read data. Details of the protocol and interface are explicitly described in the MSA. Please refer to the MSA for design reference.The digital diagnostic memory map specific data field defines as following:



Typical Interface Ciruit



Package Dimensions



Ordering Information

Part Number	Description
OLXB451XL-CD80	XFP Bidi,9.95 to 11.3Gb/s, 1490/1550nm,80km, 0~70℃, with Digital Diagnostic Monitor
OLXB541XL-CD80	XFP Bidi,9.95 to 11.3Gb/s, 1550/1490nm,80km, 0~70℃, with Digital Diagnostic Monitor
Notes: When CWDM wavelengths, the wavelength spacling>20nm	

For More Information

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