

## CWDM-XFP-1550-100-C

Cisco® CWDM-XFP-1550-100 Compatible TAA 10GBase-CWDM XFP Transceiver (SMF, 1550nm, 100km, LC)

### Features:

- INF-8077i Compliance
- Duplex LC Connector
- Single-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



### Applications:

- 10x Gigabit Ethernet over CWDM
- 8x/10x Fibre Channel
- Access, Metro and Enterprise
- Mobile Fronthaul CPRI/OBSAI

### Product Description

This Cisco® CWDM-XFP-1550-100 compatible XFP transceiver provides 10GBase-CWDM throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1550nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Cisco® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. It is built to meet or exceed the specifications of Cisco®, as well as to comply with MSA (Multi-Source Agreement) standards to ensure seamless network integration. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

ProLabs' transceivers are RoHS compliant and lead-free.

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S. – made or designated country end products."



## Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4.
- ESD to the LC Receptacle: compatible with IEC 61000-4-3.
- EMI/EMC: compatible with FCC Part 15 Subpart B Rules, EN55022:2010.
- Laser Eye Safety: compatible with FDA 21CFR, EN60950-1& EN (IEC) 60825-1, 2.
- RoHS: compliant with EU RoHS 2.0 directive 2015/863/EU.

## Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate	DR	9.95		11.1	Gbps	
Bit Error Rate	BER			10 <sup>-12</sup>		
Storage Temperature	Tstg	-40		85	°C	
Operating Case Temperature	Tc	0		70	°C	1
Maximum Voltage 5V	Vcc5	-0.5		5.5	V	
Maximum Voltage 3.3V	Vcc3	-0.5		4	V	
Total Power Consumption	P			2.5	W	

### Notes:

1. Case temperature.

## Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Supply Voltage - 5V	Vcc5	4.75		5.25	V	1
Supply Voltage - 3.3V	Vcc3	3.14		3.46	V	1
Supply Current - Vcc5 Supply	Icc5			350	mA	
Supply Current - Vcc3 Supply	Icc3			500	mA	
Transmitter						
Input Differential Impedance	RIN		100		Ω	2
Differential Data Input Swing	VIN,pp	120		820	mV	
Transmit Disable Voltage	VD	2		Vcc	V	3
Transmit Enable Voltage	Ven	GND		GND+0.8	V	
Transmit Disable Assert Time				10	us	
Receiver						
Differential Data Output Swing	VOUT,pp	340	650	850	mV	
Data Output Rise Time (20-80%)	Tr/Tf			38	ps	
LOS Fault	VLOSA	Vcc-0.5		Host_Vcc	V	
LOS Normal	VLOSD	GND		GND+0.5	V	

**Notes:**

1. Operating Environment.
2. After internal AC coupling.
3. Or open circuit.

**Optical Characteristics**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>						
<b>Optical Center Wavelength</b>	$\lambda_c$	1545	1551	1557	nm	
<b>Output Optical Power</b>	P <sub>tx</sub>	2.5		4	dBm	1
<b>Extinction Ratio</b>	ER	9	11	15	dB	
<b>Side-Mode Suppression Ratio</b>	SMSR	30			dB	
<b>Relative Intensity Noise</b>	RIN			-130	dB/Hz	
<b>Transmitter Dispersion Penalty</b>	TDP			3	dB	
<b>Launch Power of Off Transmitter</b>	P <sub>off</sub>			-30	dBm	1
<b>Transmitter Jitter (Peak-to-Peak)</b>	TJ			0.1	UI	
<b>Receiver</b>						
<b>Central Wavelength Range</b>	$\lambda_c$	1260		1600	nm	
<b>Receiver Overload</b>	Pol	-7			dBm	
<b>Receiver Sensitivity @10.3Gbps</b>	R <sub>x_Sen</sub>			-25	dBm	2
<b>Receiver Reflectance</b>	TR <sub>rx</sub>			-27	dB	
<b>LOS Assert</b>	LOSA	-35			dBm	
<b>LOS De-Assert</b>	LOSD			-27	dBm	
<b>LOS Hysteresis</b>	LOSH	0.5			dB	

**Notes**

1. Average.
2. Measured with worst ER: BER<10<sup>-12</sup> and 2<sup>31</sup>-1 PRBS.

## Pin Descriptions

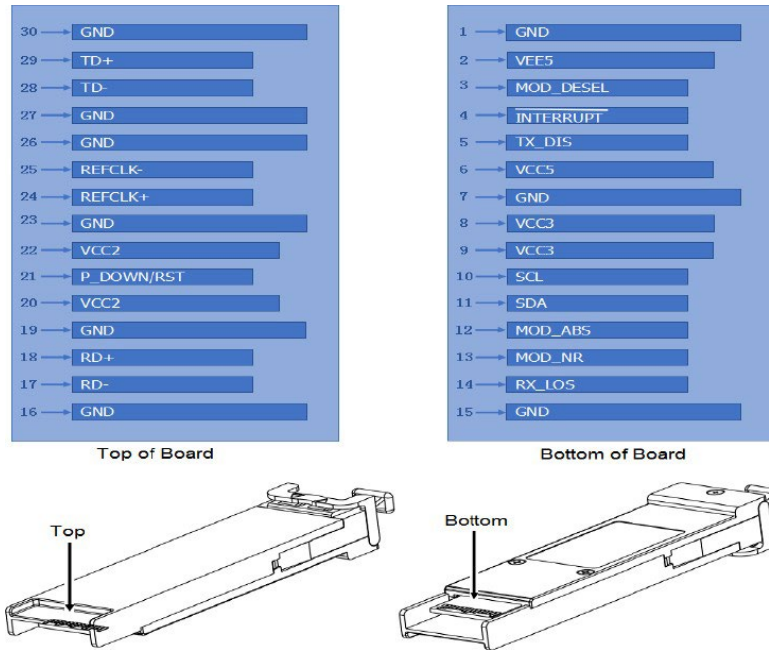
Pin	Symbol	Description	Ref.
1	GND	Module Ground.	1
2	Vee5	Optional -5.2 Power Supply. Not required.	
3	Mod_Desel	Module de-select. When held, allows the module to respond to 2-wire serial interface commands.	
4	Interrupt	Indicates presence of an import condition which can be read over the serial 2-wire interface.	2
5	Tx_Disable	Transmitter Disable. Transmitter laser source turned off.	
6	Vcc5	+5 Power Supply.	
7	GND	Module Ground.	1
8	Vcc3	+3.3V Power Supply.	
9	Vcc3	+3.3V Power Supply.	
10	SCL	Serial 2-Wire Interface Clock.	2
11	SDA	Serial 2-Wire Interface Data Line.	2
12	Mod_ABS	Module Absent. Indicates module is not present. Grounded in the module.	2
13	Mod_NR	Module Absent. Indicated module operating fault.	2
14	Rx_LOS	Receiver loss of signal indicator.	2
15	GND	Module Ground.	1
16	GND	Module Ground.	1
17	RD-	Receiver inverted data output.	
18	RD+	Receiver non-inverted data output.	
19	GND	Module Ground.	1
20	Vcc2	+1.8V Power Supply.	
21	P_Down/RST	Power Down. When "high," places the module in the low-power stand-by mode and on the falling edge of P_Down initiates a module rest. Reset. The falling edge initiates a complete reset of the module including the 2-wire serial interface, equivalent to a power cycle.	
22	Vcc2	+1.8V Power Supply.	
23	GND	Module Ground.	1
24	RefCLK+	Reference clock non-inverted input. AC coupled on the host board.	
25	RefCLK-	Reference clock inverted input. AC coupled on the host board.	
26	GND	Module Ground.	1
27	GND	Module Ground.	1
28	TD-	Transmitter inverted data input.	
29	TD+	Transmitter non-inverted data input.	
30	GND	Module Ground.	1

### Notes:

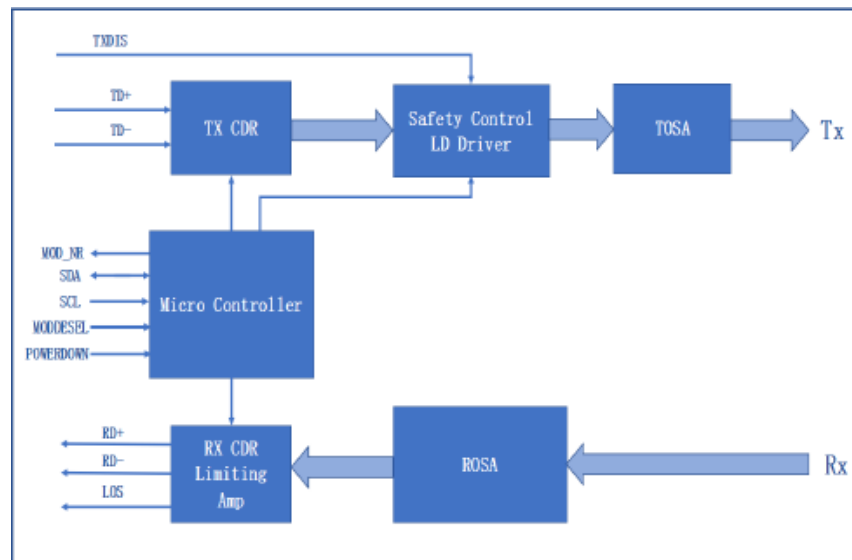
1. Module ground pins (GND) are isolated from the module case and chassis ground within the module.
2. Open collector. Should be pulled up with 4.7k $\Omega$ -10k $\Omega$  on the host board to a voltage between 3.15V and

3.6V.

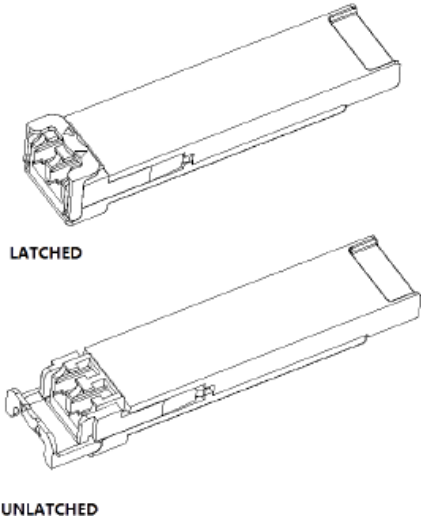
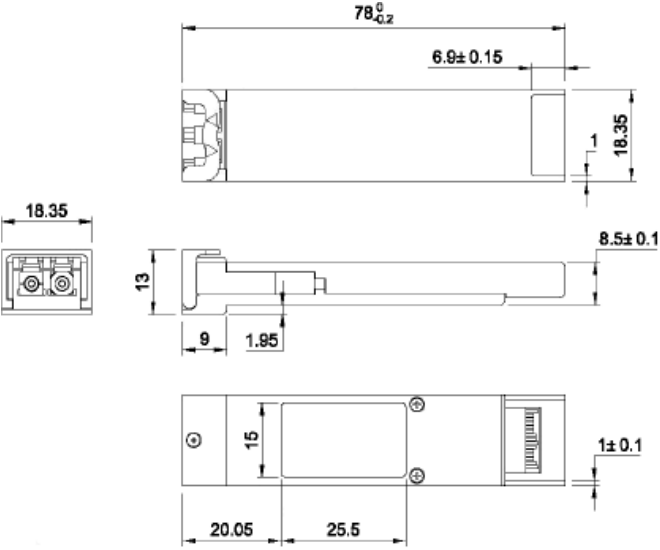
## Electrical Pad Layout



## Block Diagram of Transceiver



Mechanical Specifications



## **About ProLabs**

Our experience comes as standard; for over 15 years ProLabs has delivered optical connectivity solutions that give our customers freedom and choice through our ability to provide seamless interoperability. At the heart of our company is the ability to provide state-of-the-art optical transport and connectivity solutions that are compatible with over 90 optical switching and transport platforms.

## **Complete Portfolio of Network Solutions**

ProLabs is focused on innovations in optical transport and connectivity. The combination of our knowledge of optics and networking equipment enables ProLabs to be your single source for optical transport and connectivity solutions from 100Mb to 400G while providing innovative solutions that increase network efficiency. We provide the optical connectivity expertise that is compatible with and enhances your switching and transport equipment.

## **Trusted Partner**

Customer service is our number one value. ProLabs has invested in people, labs and manufacturing capacity to ensure that you get immediate answers to your questions and compatible product when needed. With Engineering and Manufacturing offices in the U.K. and U.S. augmented by field offices throughout the U.S., U.K. and Asia, ProLabs is able to be our customers best advocate 24 hours a day.

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