

XCVR-S40WXX-C
Ciena 10GBASE-DWDM SFP+ SMF
1530NM-1565NM, 40KM, DOM
Dual LC Connector



XCVR-S40WXX-C

Ciena® Compatible TAA Compliant 10GBase-DWDM SFP+ Transceiver (SMF, 1530nm to 1565nm, 40km, LC, DOM)

Features

- Duplex LC connector
- Support hot-pluggable
- Metal with lower EMI
- Excellent ESD protection
- RoHS compliant and Lead Free
- Compliant with IEEE 802.3ae
- Dispersion tolerance from -500ps/nm to 1600ps/nm
- Available in all C-Band Wavelengths on the DWDM ITU Grid
- Temperature-stabilized EML transmitter
- Up to 40KM for single mode fiber
- GR-253-CORE compliant
- Compliant with SFP+ MSA: SFF-8431 Rev.4.1
- Single 3.3V power supply and low power dissipation <1.5W



Applications

- 10GBase-DWDM
- 10G Fibre Channel

Product Description

This Ciena® compatible SFP+ transceiver provides 10GBase-DWDM throughput up to 40km over single-mode fiber (SMF) using a wavelength of 1530nm to 1565nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Ciena® 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. Digital optical monitoring (DOM) support is also present to allow access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

ProLabs' SFP+ 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 3015.7.
- ESD to the Duplex LC Receptacle: compatible with IEC 61000-4-2
- Immunity compatible with IEC 61000-4-3.
- EMI compatible with FCC Part 15 Class B EN55022 Class B (CISPR 22B) VCCI Class B.
- Laser Eye Safety compatible with FDA 21CFR 1040.10 and 1040.11 EN60950, EN (IEC) 60825-1,2.
- RoHs compliant with 2002/95/EC 4.1&4.2 2005/747/EC.

DWDM Available Wavelengths

ITU Channel	Frequency (THZ)	Center Wavelength (nm)
61	196.1	1528.77
60	196.0	1529.55
59	195.9	1530.33
58	195.8	1531.12
57	195.7	1531.90
56	195.6	1532.68
55	195.5	1533.47
54	195.4	1534.25
53	195.3	1535.04
52	195.2	1535.82
51	195.1	1536.61
50	195.0	1537.40
49	194.9	1538.19
48	194.8	1538.98
47	194.7	1539.77
46	194.6	1540.56
45	194.5	1541.35
44	194.4	1542.14
43	194.3	1542.94
42	194.2	1543.73
41	194.1	1544.53
40	194.0	1545.32
39	193.9	1546.12
38	193.8	1546.92
37	193.7	1547.72
36	193.6	1548.51
35	193.5	1549.32
34	193.4	1550.12
33	193.3	1550.92
32	193.2	1551.72
31	193.1	1552.52
30	193.0	1553.33
29	192.9	1554.13
28	192.8	1554.94
27	192.7	1555.75

26	192.6	1556.55
25	192.5	1557.36
24	192.4	1558.17
23	192.3	1558.98
22	192.2	1559.79
21	192.1	1560.61
20	192.0	1561.42
19	191.9	1562.23
18	191.8	1563.05
17	191.7	1563.86

Pin Descriptions

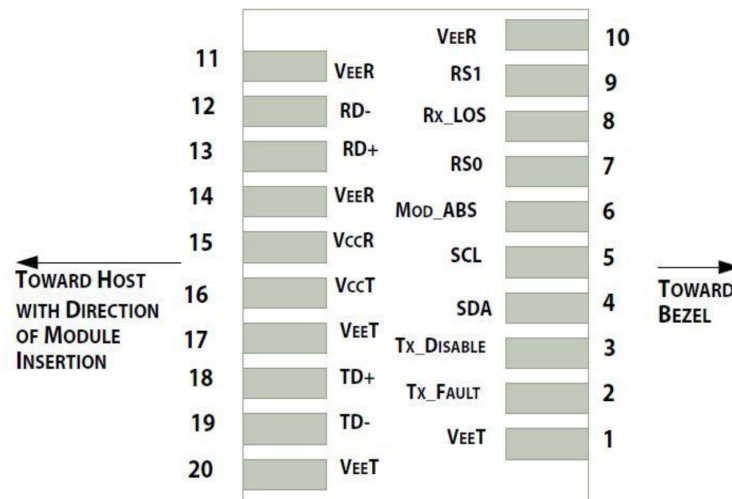
Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	TX Fault	Transmitter Fault. LVTTTL-O	2
3	TX Disable	Transmitter Disable. Laser output disabled on high or open. LVTTTL-I.	3
4	SDA	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTTL-I/O.	
5	SCL	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTTL-I.	
6	MOD_ABS	Module Absent, Connect to VeeT or VeeR in Module.	4
7	RS0	Rate Select 0. Not used	5
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation. LVTTTL-O.	2
9	RS1	Rate Select 1. Not used	5
10	VeeR	Receiver Ground (Common with Transmitter Ground).	1
11	VeeR	Receiver Ground (Common with Transmitter Ground).	1
12	RD-	Receiver Inverted DATA out. AC Coupled. CML-O.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled. CML-O.	
14	VeeR	Receiver Ground (Common with Transmitter Ground).	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground (Common with Receiver Ground).	1
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled. CML-I.	
19	TD-	Transmitter Inverted DATA in. AC Coupled. CML-O.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

Notes:

1. The module signal ground contacts, VeeR and VeeT, should be isolated from the module case.
2. This contact is an open collector/drain output and should be pulled up to the Vcc_Host with resistor in the range 4.7KΩ to 10KΩ. Pull ups can be connected to one or several power supplies, however the host

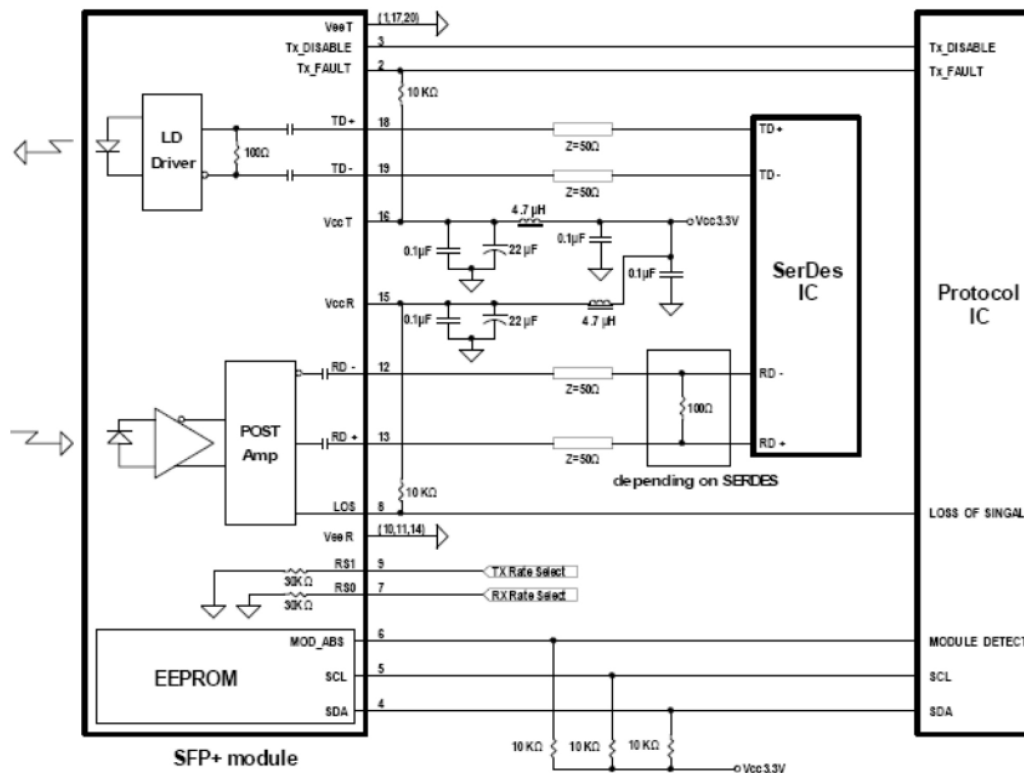
board design shall ensure that no module contract has voltage exceeding module $V_{ccT}/R + 0.5V$.

3. Tx_Disable is an input contact with a 4.7K Ω to 10K Ω pull-up resistor to V_{ccT} inside module.
4. Mod_ABS is connected to VeeT or VeeR in the SFP+ module. The host may pull the contract up to V_{cc_Host} with a resistor in the range from 4.7K Ω to 10K Ω . Mod_ABS is asserted "High" when the SFP+ module is physically absent from a host slot.
5. Internally pulled down per SFF-8431



Pin-out of connector Block on Host board

Recommended Circuit Schematic



Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Storage Temperature	TS	0	70	°C
Supply Voltage	Vcc	-0.5	4.0	V
Operating Humidity	RH	5	95	%

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	Vcc	3.13	3.30	3.47	V
Power Supply Current	Icc			750	mA
Case Operating Temperature – Commercial	Tc	0		70	°C

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Input differential impedance	Rin	85	100	115	Ω	1
CML Inputs (Differential)	Vin	250		1000	mVpp	
TX Disable-High		2.0		Vcc+0.3	V	
TX Disable-Enable		0		0.8	V	
TX Fault-Fault		2.0		Vcc+0.3	V	
TX Fault-Normal		0		0.5	V	
Receiver						
Single ended data output swing	Vout, pp	350	400	700	mVpp	
Output Impedance (Differential)	Zout	85	100	115	Ω	
LOS-LOS		2.0		Vcc+0.3	V	
LOS-Normal		0		0.8	V	
MOD_DEF (0:2)	VoH	2.5			V	
	VoL	0		0.5	V	

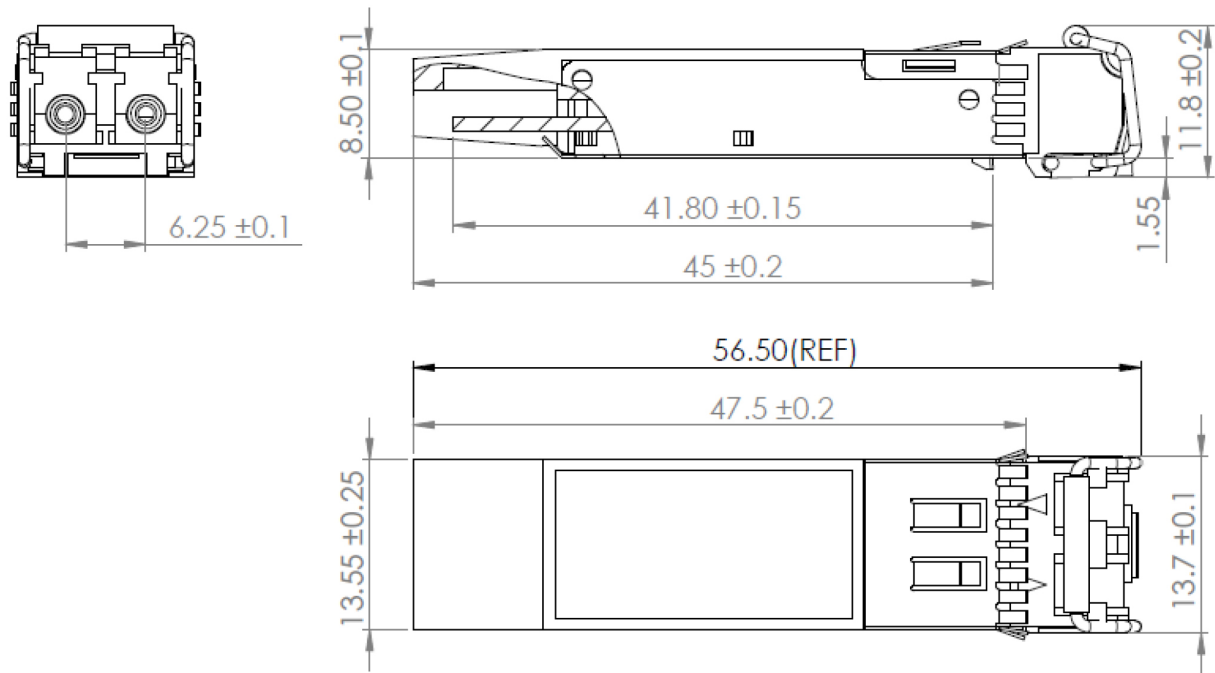
Notes:

1. AC coupled.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Output Opt. Power	P _{AVE}	-1		4	dBm	
Launch Power (Tx: OFF)	P _{off}			-30	dBm	
Side Mode Suppression Ratio	SMSR	30			dB	
Center Wavelength Spacing			50		GHz	
			0.4		nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Extinction Ratio	ER	3.5			dB	
P _{out} @TX Disable Asserted	P _{out}			-45	dBm	
Transmitter Dispersion Penalty@1600ps/nm	TDP			3.5	dB	
Relative Intensity Noise	RIN			-128	dB/Hz	
TX Jitter	TX _j	Per 802.3ae requirements				
Receiver						
Overload		-8			dBm	
Optical Center Wavelength	λ _C	1270		1600	nm	
LOS De-Assert	LOSD			-24	dBm	
LOS Assert	LOSA	-37			dBm	
LOS Hysteresis		1			dB	

Mechanical Specifications



EEPROM Information

EEPROM memory map specific data field description is as below:

