ONS-SI-622-I1-OPC

Cisco® ONS ONS-SI-622-I1 Compatible OC-12-IR SFP Transceiver (SMF, 1310nm, 15km, LC, -40 to 85C)

Features

- INF-8074 and SFF-8472 Compliance
- Duplex LC Connector
- Single-mode Fiber
- Industrial Temperature -40 to 85 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



Applications:

- OC-12 Transmission
- Access and Enterprise

Product Description

This Cisco® ONS ONS-SI-622-I1 compatible SFP transceiver provides OC-12 (622 mbs) IR transmission rates for up to 15km over single-mode fiber (SMF) using a wavelength of 1310nm via an LC connector. It is capable of withstanding rugged environments and can operate at temperatures between -40 and 85C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Cisco® ONS. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

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.	Тур.	Max.	Unit
Maximum Supply Voltage	Vcc	-0.5		3.6	V
Storage Temperature	TS	-40		+85	°C
Operating Case Temperature	Тс	-40		+85	°C
Operating Humidity	RH	5		85	%
Receiver Power	R _{MAX}			-8	dBm
Data Rate			622		Mbps

Electrical Characteristics (TOP=25°C, Vcc=3.3Volts)

Parameter	Symbol	Min.	Тур.	Max.	Unit	Notes	
Power Supply Voltage	Vcc	3.15	3.30	3.45	V		
Power Supply Current	Icc			300	mA		
Power Consumption	P _{DISS}			800	mW		
Transmitter							
Single ended data input swing	Vin,pp	400		2000	mVpp	1	
Input differential impedance	Zin	85	100	115	Ω	2	
Receiver							
Single ended data output swing	Vout, pp	400		2000	mVpp	1	
Output differential impedance	Zin	80	100	120	Ω		

Notes:

- 1. AC coupled.
- 2. Rin > 100 kohms @ DC

Optical Characteristics

Parameter	Symbol	Min.	Тур.	Max.	Unit	Notes
9μm Core Diameter SMF	L		10		km	
Data Rate			622		Mbps	
Transmitter						
Average Output Power	Pout	-15		-8	dBm	1
Optical Extinction Ratio	ER	10			dB	
Optical Wavelength	Тλ	1260	1310	1360	nm	
Spectral Width (RMS)	Δλ			4	nm	
Total Jitter	ΤJ			0.43	UI	2
Rise/Fall Time (20%~80%)	tr/tf			0.26	ns	
Receiver						
Receiver Sensitivity	Pmin			-28	dBm	3
Receiver Overload	Pmax	-8			dBm	
Optical Center Wavelength	λC	1260		1600	nm	

Notes:

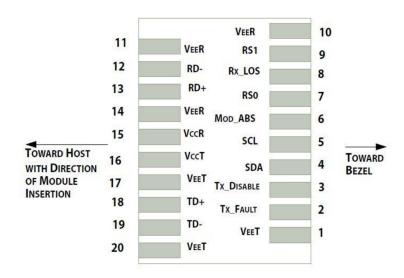
- 1. Coupled into a Single-mode fibre
- 2. Filtered, measured with a PRBS 2²³-1 test pattern @622Mbps.
- 3. Minimum average optical power is measured at BER less than 1E-12, with $2^{^{23}}$ -1 PRBS and ER=9 dB

Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	TX Fault	Transmitter Fault. LVTTL-O	2
3	TX Disable	Transmitter Disable. Laser output disabled on high or open. LVTT-I.	3
4	SDA	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTL-I/O.	
5	SCL	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTL-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. LVTTL-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

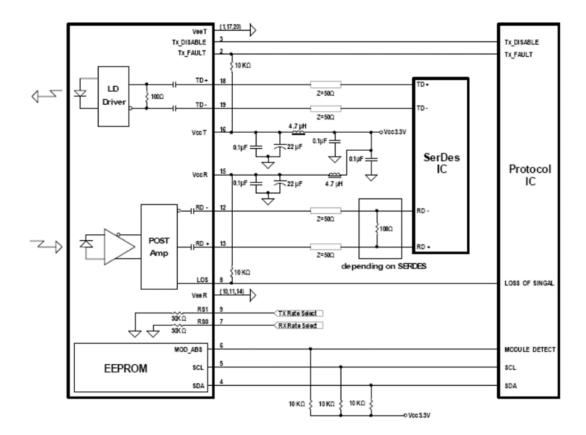
Notes:

- 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 resister in the range $4.7K\Omega$ to $10K\Omega$. 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 VccT/R +0.5.V.
- 3. Tx_Disable is an input contact with a $4.7K\Omega$ to $10K\Omega$ pull-up resistor to VccT inside module.
- 4. Mod_ABS is connected to VeeT or VeeR in the SFP+ module. The host may pull the contract up to Vcc_Host with a resistor in the range from $4.7K\Omega$ to $10K\Omega$. Mod_ABS is asserted "High" when the SFP+ module is physically absent from a host slot.
- 5. Internally pulled down per SFF-8431



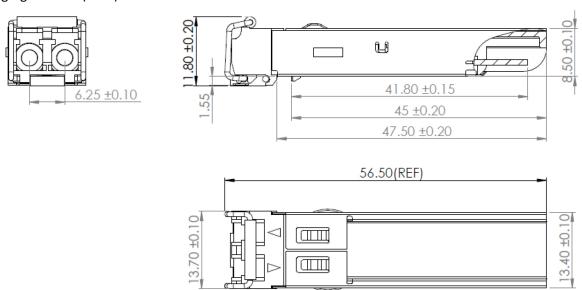
Pin-out of connector Block on Host board

Recommended Circuit Schematic



Mechanical Specifications

Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).



EEPROM Information

EEPROM memory map specific data field description is as below:

