



SFP13010GE0VBHO

Cisco® SFP-1G-LH Compatible 1000Base-LX (media interface) to 10G (host) adapting SFP+ Transceiver (SMF, 1310nm, 10km, LC)

Product Description

This Cisco® SFP-1G-LH compatible SFP transceiver provides 1000Base-LX throughput up to 10km over single-mode fiber (SMF) using a wavelength of 1310nm via an LC connector. It can operate at temperatures between 0 and 70C. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Cisco®. 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.

Skylane's transceivers are RoHS compliant and lead-free.

Features:

- 1310nm FP laser transmitter
- Duplex LC Connector
- Build-in PHY supporting XFI/USXGMII interface
- Receiver Loss of Signal Output
- Serial ID module on MOD (0-2)
- Single 3.3V Power Supply
- Transmitter disable input
- Class 1 laser safety certified
- RoHS compliant and Lead-Free
- Operating Temperature: 0 to 70 Celsius



Applications:

- 1000Base-LX Ethernet
- Access and Enterprise
- 1x Fibre Channel

For your product safety, please read the following information carefully before any manipulation of the transceiver:



ESD

This transceiver is specified as ESD threshold 1kV for SFI pins and 2kV for all others electrical input pins, tested per MIL-STD-883G, Method 3015.4 /JESD22-A114-A (HBM). However, normal ESD precautions are still required during the handling of this module.



LASER SAFETY

This is a Class1 Laser Product according to IEC 60825-1:2007. This product complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated (June 24, 2007).

The optical ports of the module need to be terminated with an optical connector or with a dust plug in order to avoid contamination.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	V _{CC}			4.0	V	
Storage Temperature	T _{stg}	-40		85	°C	
Operating Case Temperature	T _c	0		70	°C	
Operating Relative Humidity	RH	0		95	%	
Power Supply Voltage	V _{CC}	3.10	3.3	3.47	V	
Supply Current	I _{CC}			800	mA	
Power Dissipation	P _{DISS}			2.0	W	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Launch Optical Power	Po	-9.5		-3.0	dBm	1
Center Wavelength	λC	1270		1355	nm	
Extinction Ratio	ER	9.0			dB	
Spectral Width (RMS)	Δλ			4.0	nm	
Mask Margin		10				
POUT of OFF Transmitter	Poff			-30	dBm	
Eye Diagram	Complies with IEEE 802.3					
Receiver						
Center Wavelength	λC	1260		1620	nm	
Receiver Sensitivity	S			-19	dBm	2
Overload Input Optical Power	Pin	-3.0			dBm	
LOS De-Assert				-20	dBm	
LOS Assert		-30			dBm	
LOS Hysteresis		0.5		5	dB	3

Notes:

1. With SMF.
2. Measured with BER<10E⁻¹².
3. The LOS Hysteresis minimizes “chatter” on the output line. In principle, Hysteresis alone does not guarantee chatter-free operation.

Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Signal Ground.	1
2	Tx_Fault	Transmitter Fault Out (OC).	2
3	Tx_Disable	Transmitter Disable In (LVTTL).	3
4	SDA	Module Definition Identifiers.	4
5	SCL	Module Definition Identifiers.	4
6	MOD_ABS	Module Definition Identifiers.	4
7	RS0	Receiver Rate Select (LVTTL). Transmitter Rate Select (LVTTL).	5
8	LOS	Loss of Signal Out (OC).	6
9	RS1	Receiver Rate Select (LVTTL). Transmitter Rate Select (LVTTL).	5
10	VeeR	Receiver Signal Ground.	7
11	VeeR	Receiver Signal Ground.	7
12	RD-	Receiver Negative Data Out (CML).	8
13	RD+	Receiver Positive Data Out (CML).	9
14	VeeR	Receiver Signal Ground.	7
15	VccR	Receiver Power Supply.	10
16	VccT	Transmitter Power Supply.	10
17	VeeT	Transmitter Signal Ground.	1
18	TD+	Transmitter Positive Data In (CML).	11
19	TD-	Transmitter Negative Data In (CML).	12
20	VeeT	Transmitter Signal Ground.	1

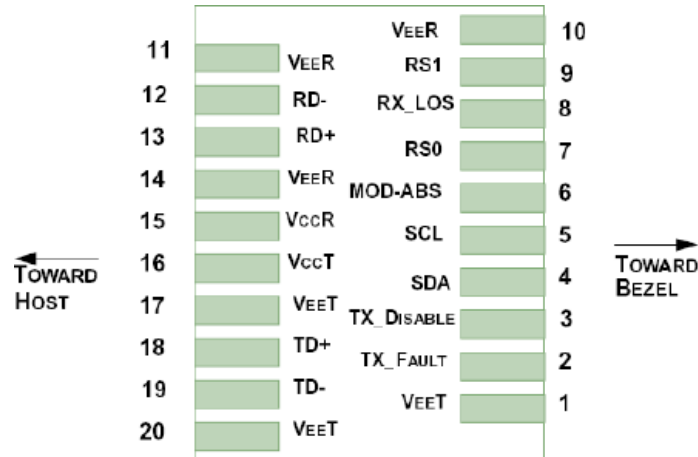
Notes:

- These pins should be connected to the signal ground on the host board.
- Logic "1" Output = Transmitter Fault.
Logic "0" Output = Normal Operation.
This pin is open collector compatible and should be pulled up to the Host_Vcc with a 10kΩ resistor.
- Logic "1" Input (or No Connection) = Laser Off.
Logic "0" Input = Laser On.
This pin is internally pulled up to the VccT with a 10kΩ resistor.
- Serial ID with SFF-8472 Diagnostics Module Definition pins should be pulled up to the Host_Vcc with 10kΩ resistors.
- These pins have an internal 33kΩ pull-down to ground. A signal on either of these pins will not affect module performance.
- This pin is open collector compatible and should be pulled up to the Host_Vcc with a 10kΩ resistor.
- These pins should be connected to the signal ground on the host board.
- Light On = Logic "0" Output Receiver Data output is internally AC coupled and series terminated with a 50Ω resistor.
- Light On = Logic "1" Output Receiver Data output is internally AC coupled and series terminated

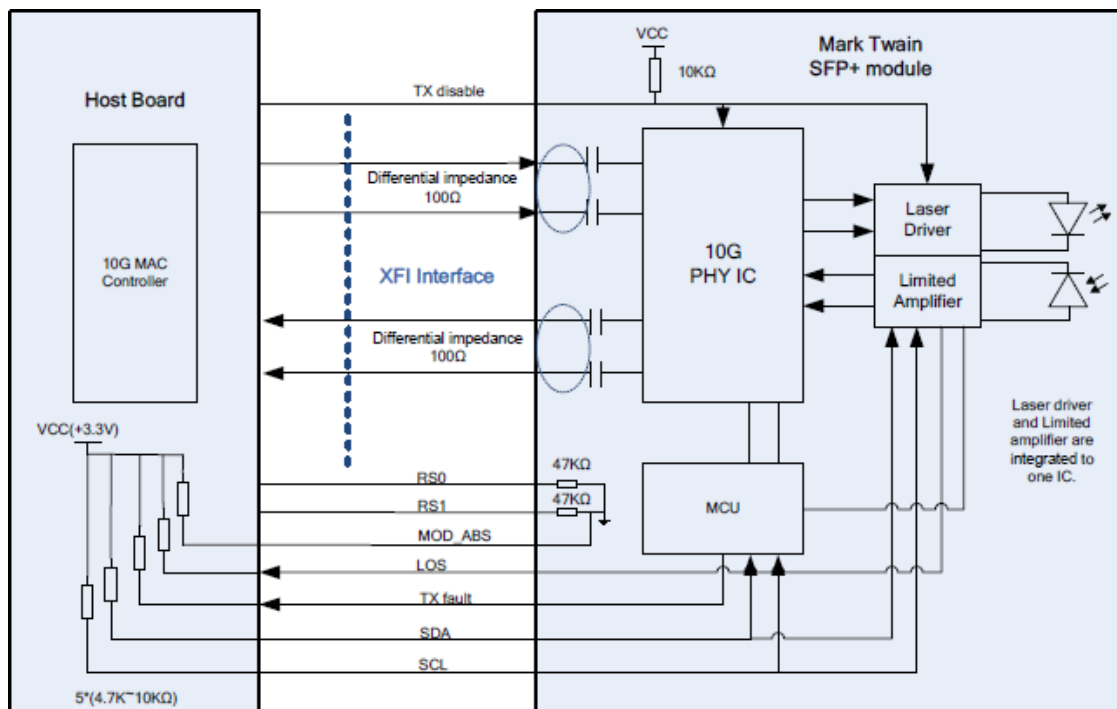
with a 50Ω resistor.

10. This pin should be connected to a filtered +3.3V power supply on the host board.
11. Logic "1" Input = Light On Transmitter Data inputs are internally AC coupled and terminated with a differential 100Ω resistor.
12. Logic "0" Input = Light On Transmitter Data inputs are internally AC coupled and terminated with a differential 100Ω resistor.

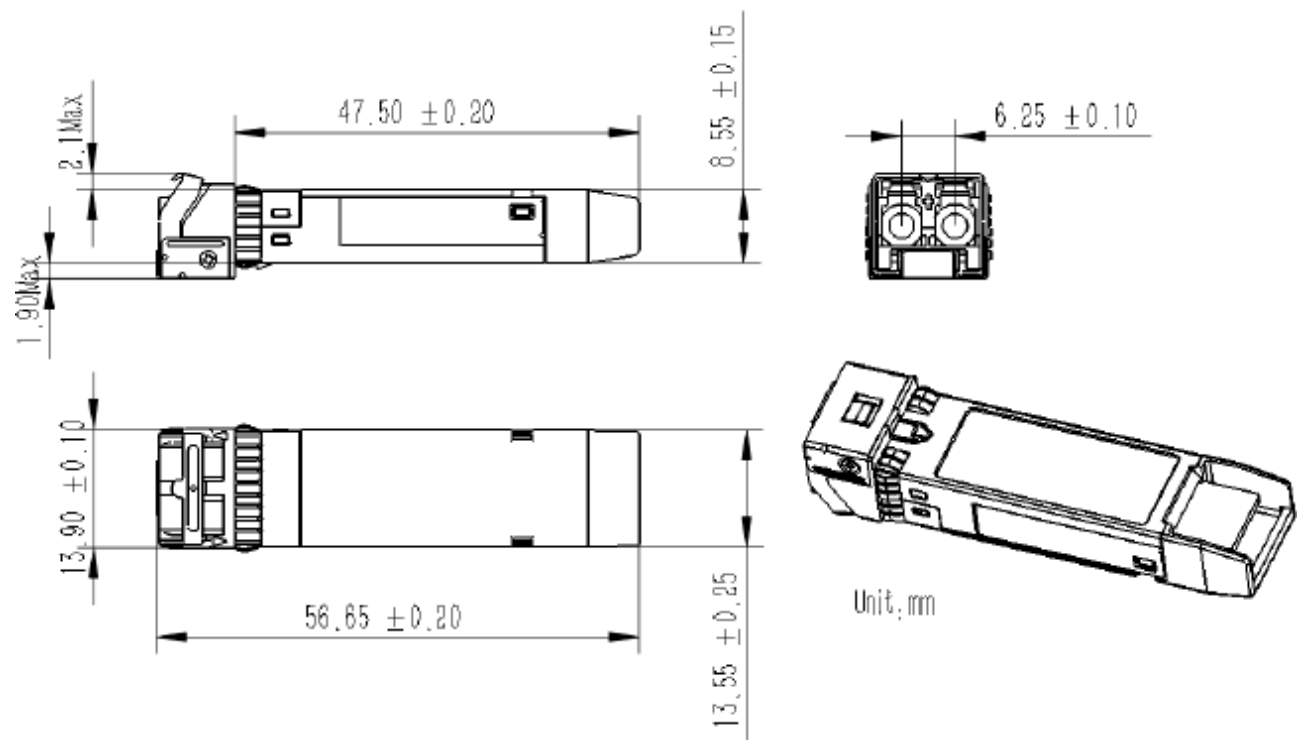
Electrical Pin-Out Details



Recommended Circuit Schematic



Mechanical Specifications



About Skylane Optics

Skylane is a leading provider of transceivers for optical communication.

We offer an extensive portfolio for the enterprise, access, datacenter and metropolitan fiber optical market as well as for smart home applications and home networks.

We cover the European, South American and North American market with a strong partner network and have offices in Belgium, Brazil, Sweden and USA.

Our offerings are characterized by high quality and performance. In combination with our strong technical support, we enable our customers to build cost optimized network solutions.

We offer an extensive range of high-quality products including transceivers (Optical and copper), Active Optical Cable (AOC), Direct Attach Cable (DAC), Mux/Demux, Coding Box.

