

SFP-1G-BX-U-20-C 1000BASE-BX SFP SMF 1310NMTX/1490NMRX, 20KM, DOM Simplex LC Connector

SFP-1G-BX-U-20-C

MSA and TAA Compliant 1000Base-BX SFP Transceiver (SMF, 1310nmTx/1490nmRx, 20km, LC, DOM)

Features:

- INF-8074 and SFF-8472 MSA Compliant
- Compliant with IEEE 802.3ah
- Simplex LC Connector
- 10.5dB Link Budget
- Fabry Perot transmitter and PIN receiver
- Up to 20km over single-mode fiber
- 3.3V power supply and 1W power dissipation
- Support Hot Pluggable
- Metal with lower EMI
- Excellent ESD protection
- Operating Temperature: 0°C to 70°C
- RoHS compliant and Lead Free

Applications:

- 1000Base-BX Ethernet
- 1x Fibre channel
- Access (FTTx) and enterprise

Product Description:

This MSA compliant SFP transceiver provides 1000Base-BX throughput up to 20km over single-mode fiber (SMF) using a wavelength of 1310nmTx/1490nmRx via an LC connector. This bidirectional unit must be used with another transceiver or network appliance of complimenting wavelengths. It is built to MSA standards and is uniquely serialized and data-traffic and application tested to ensure that they will integrate into your network seamlessly. 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' 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.	Max.	Unit
Maximum Supply Voltage	Vcc	-0.5	4.0	V
Storage Temperature	TS	-40	85	°C
Operating Case Temperature	Тс	0	70	°C
Operating Humidity	RH	5	85	%
Receiver Power	R _{MAX}		-3	dBm
Maximum Bitrate	B _{max}		1.25	Gbps

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

Parameter	Symbol	Min.	Тур.	Max.	Unit	Notes	
Power Supply Voltage	Vcc	3.15	3.30	3.43	V		
Power Supply Current	Icc			303	mA		
Power Consumption	P _{DISS}			1	W		
Transmitter							
Differential data input swing	Vin,pp	120		850	mV		
Input differential impedance	Zin	80	100	120	Ω		
Receiver							
Differential data output swing	Vout, pp	300		850	mV		
Output differential impedance	Zin	80	100	120	Ω		

Optical Characteristics

Parameter	Symbol	Min.	Тур.	Max.	Unit	Notes	
Transmitter							
Optical Power (average)	P _{AVE}	-9		-3	dBm	1	
Optical Extinction Ratio	ER	9			dB		
Optical Wavelength	Τλ	1260	1310	1360	nm		
Insertion loss	IL		1.2				
Receiver							
Receiver Sensitivity (average)	R _{AVE}			-19.5	dBm	3	
Receiver overload	P _{max}	-3			dBm	4	
Receiver wavelength	Rλ	1480		1500	nm		

Notes:

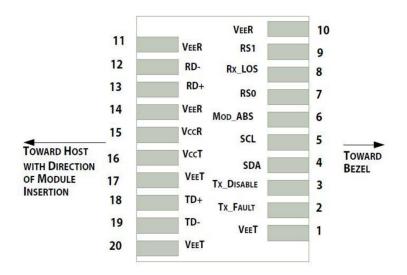
- 1. Coupled into a Single-mode fibre
- 2. Per IEEE 802.3ah specification
- 3. Average power, back-to-back, @1.25Gbps, BER 1E-12, PRBS 231-1.
- 4. Exceeding the Receiver overload can physically damage the module. Please use appropriate attenuation.

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

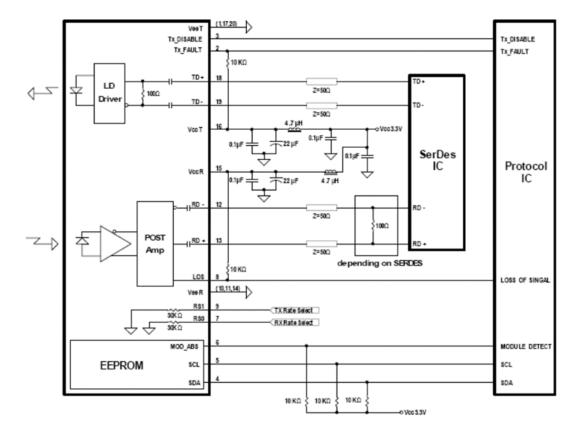
Notes:

- 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

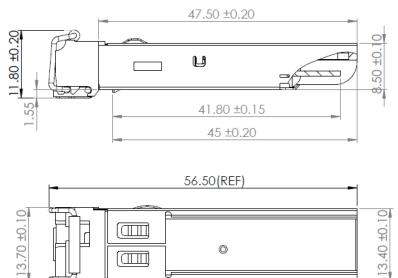
Recommended Circuit Schematic



Mechanical Specifications

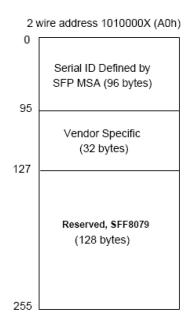
Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).

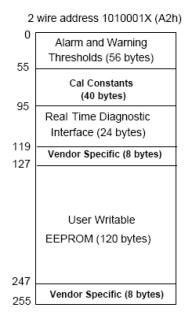




EEPROM Information

EEPROM memory map specific data field description is as below:







Provided by: Mega Hertz | 800-883-8839 | info@go2mhz.com | www.go2mhz.com https://www.go2mhz.com/product/msa-and-taa-compliant-1000base-bx-sfp-transceiver/