



SFP+ XGS-ONU-I-ASC-SKY

MSA and 10GBase-XGS PON ONU SFP+ Transceiver (SMF, 1270nmTx/1577nmRx, 20km, ASC, DOM, -40 to 85C)

Product Description

This MSA compliant SFP+ transceiver provides 10GBase-XGS throughput up to 20km over single-mode fiber (SMF) using a wavelength of 1270nmTx/1577nmRx via an ASC connector. It is capable of withstanding rugged environments and can operate at temperatures between -40 and 85C. All of our transceivers are built to comply with Multi-Source Agreement (MSA) standards and are uniquely serialized and tested for data-traffic and application to ensure seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows access to real-time operating parameters. 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:

- 2x10 SFP+ Die Cast Housing
- One single-mode fiber
- ASC Optical Receptacle
- Industrial Temperature -40 to 85 Celsius



Applications:

- XGS PON ONU
- Broadband Access

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.

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
Maximum Supply Voltage	V _{CC}	0		3.6	V
Storage Ambient Temperature	T _{stg}	-40		85	°C
Operating Case Temperature	T _c	-40	25	85	°C
Relative Humidity Storage	RH _{Stg}	0		95	%
Relative Humidity Operating	RH _{Op}	0		85	%

Note:

1. Exceeding the Absolute Maximum Ratings may cause irreversible damage to the device. The device is not intended to be operated under the condition of simultaneous Absolute Maximum Ratings, a condition which may cause irreversible damage to the device.

Absolute Maximum Ratings - Control Function Logic Levels

Parameter	Symbol	Min.	Max.	Unit	Notes
Receiver Loss of Signal Logic State	RX_LOS	0	V _{CC} +0.5	V	LVTTL
Transmit Burst_Enable Logic State	BM _{ENABLE}	0	V _{CC} +0.5	V	LVTTL

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Module Supply Voltage	V _{CC}	3.135	3.30	3.465	V	
Module Supply Current	I _{IN}	150	230	400	mA	
Transmitter						
Tx_Data Differential Input Voltage	V _{IN}	190		700	mV	
Tx_DIS=High (Transmitter Off/Disabled)	V _{IH}	2.0		V _{CC} +0.3	V	1
Tx_DIS=Low (Transmitter On/Enabled)	V _{IL}	0		0.8	V	1
Receiver						
Rx_Data Differential Output Voltage	V _{OUT}	300		850	mV	2
Rx_LOS=High (Receiver Off)	V _{OH}	2.4		3.3	V	LVTTL
Rx_LOS=Low (Receiver On)	V _{OL}	0		0.8	V	LVTTL

Notes:

1. LVTTL Burst Mode.
2. CML Rx_DATA Electrical Output (AC coupled internally).

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Laser Type		DFB Laser				
Transmitter Signal Rate		9.95328			Gbps	
Average Output Power	P _{out}	+4		+9	dBm	
Optical Center Wavelength	λ	1260	1270	1280	nm	
Spectral Width	$\Delta\lambda$			1	nm	
Side-Mode Suppression Mode	SMSR	30			dB	
Extinction Ratio	ER	6			dB	
Burst-On Time	T _{Burst_On}			128.6	ns	
Burst-Off Time	T _{Burst_Off}			128.6	ns	
Receiver						
Receiver Type		CW APD/TIA				
Receiver Signal Rate		9.95328			Gbps	
Optical Center Wavelength	λ		1577		nm	
Receiver Sensitivity	S			-28	dBm	1
Received Optical Overload	P _{IN} (SAT)	-8			dBm	1
Rx_LOS Assert	P _A	-42			dBm	
Rx_LOS De-Assert	P _D			-29	dBm	
Rx_LOS Hysteresis	PHy	0.5		5	dB	

Notes:

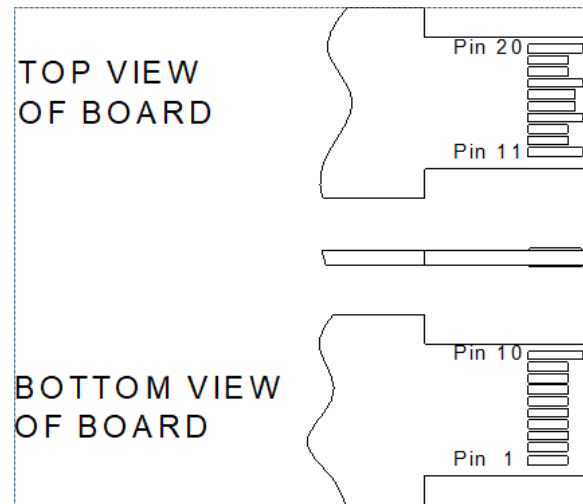
1. BER $\leq 10^{-3}$, PRBS 2³¹-1, and ER=8dB.

Pin Descriptions

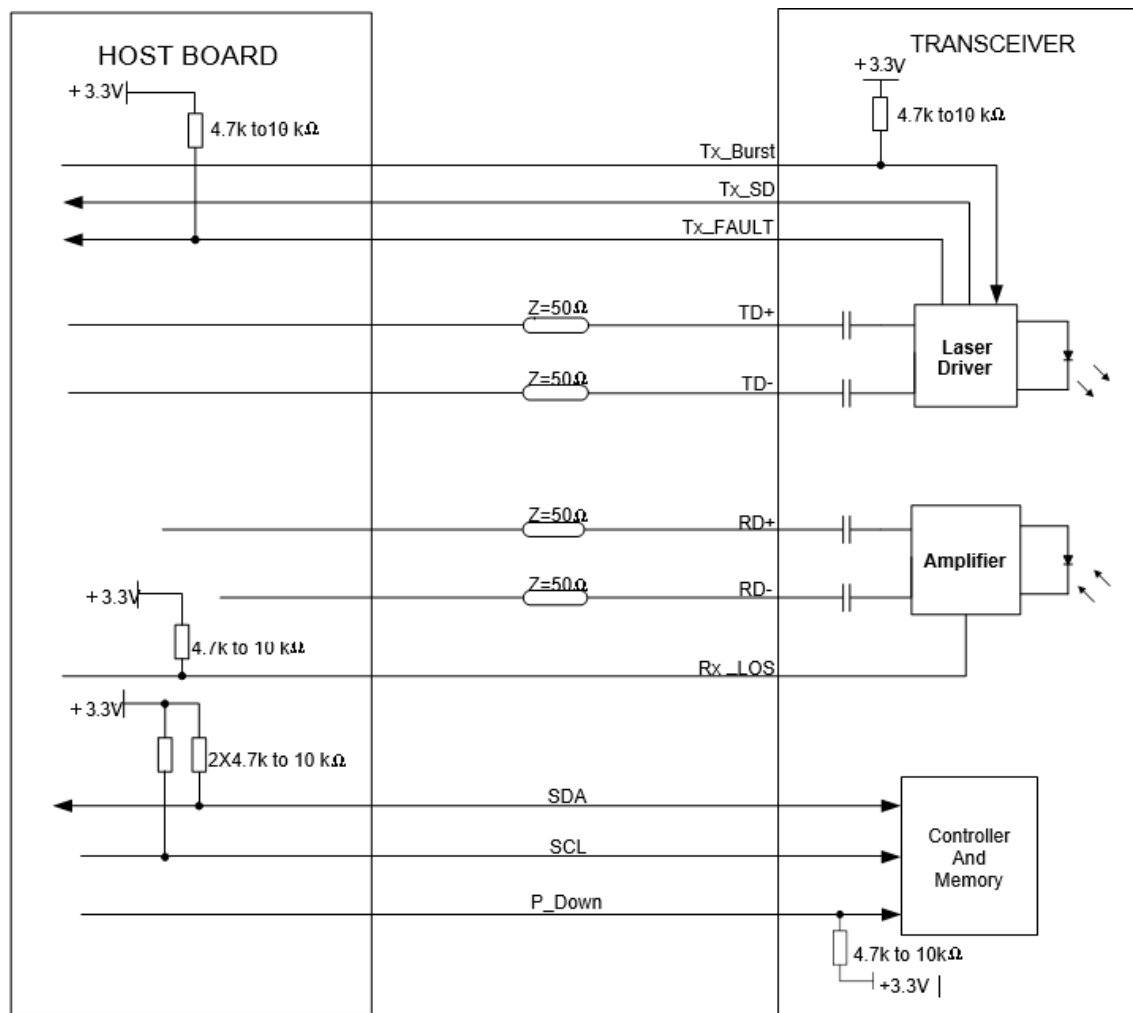
Pin	Symbol	Name/Descriptions	Ref.
1	GND	Module Ground.	
2	Tx_Fault	Transmitter Fault.	1
3	Burst_Enable	Burst Enable Input. When asserted high, transmitter output is turned off.	
4	SDA	2-Wire Serial Interface Data Line (MOD-DEF2).	
5	SCL	2-Wire Serial Interface Clock (MOD-DEF1).	
6	MOD_ABS	Module Absent - connected to VeeT.	1
7	Tx_SD	Transmitter State Indication, Tx_Indication Assert High, when transmitter on.	
8	Rx_LOS	Loss of Signal indication. Logic 0 indicates normal operation.	1
9	P_Down	Power Down High=Normal Operation, Low=Power Down (only power down Tx).	2
10	GND	Module Ground.	
11	GND	Module Ground.	
12	RD-	Receiver Inverted DATA out. AC Coupled.	
13	RD+	Receiver Non-Inverted DATA out. AC Coupled.	
14	GND	Module Ground.	
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	GND	Module Ground.	
18	TD+	Transmitter Non-Inverted DATA in. AC Coupled.	
19	TD-	Transmitter Inverted DATA in. AC Coupled.	
20	GND	Module Ground.	

Notes:

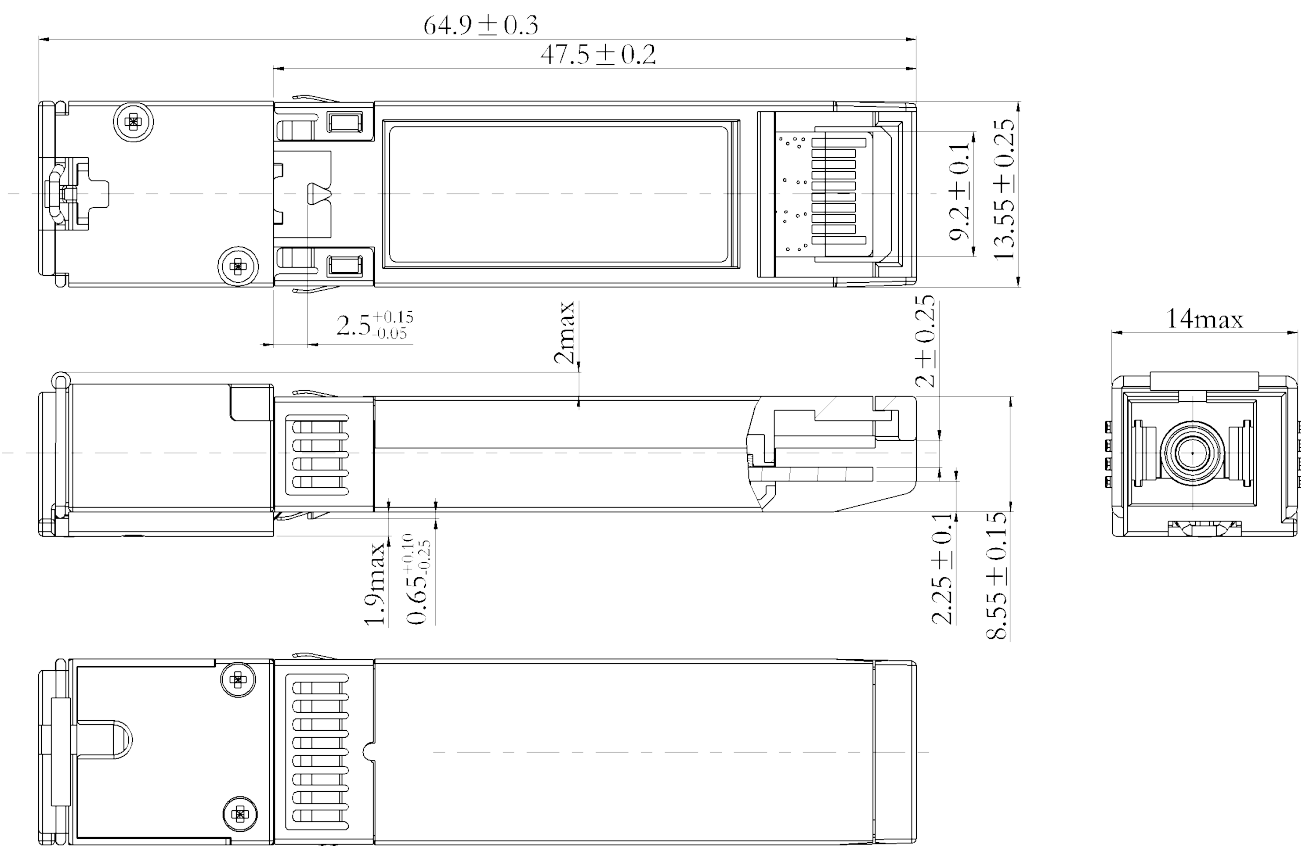
1. Shall be pulled up with 4.7k Ω -10k Ω to a voltage between 3.15V and 3.6V on the host board.
2. 4.7k Ω -10k Ω pull-up resistor within the module.



Electrical Interface



Mechanical Specifications

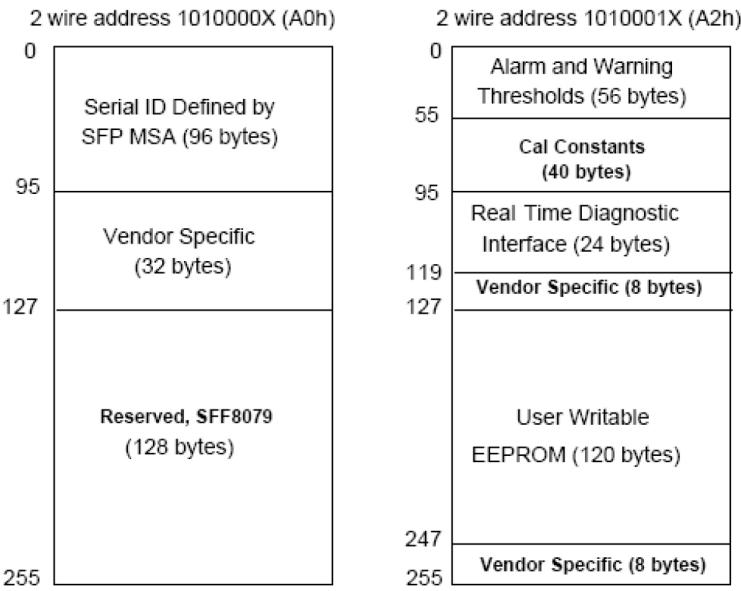


NOTES:

- 1.TOLERANCE: $\pm 0.1\text{MM}$.
- 2.OTHERS ACCORDING WITH SFF-8074/SFF-8432 OR CUSTOMER SPEC.
- 3.LIGHT PORT ACCORDING WITH FIBER CONNECTOR SPEC.

EEPROM Information

EEPROM memory map specific data field description is as below:



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.

