

EX-SFP-1GE-T-SKY

Juniper Networks® EX-SFP-1GE-T Compatible 10/100/1000Base-TX SFP Transceiver (Copper, 100m, RJ-45)

Product Description

This Juniper Networks® EX-SFP-1GE-T compatible SFP transceiver provides 10/100/1000Base-TX throughput up to 100m over a copper connection via a RJ-45 connector. It can operate at temperatures between 0 and 70C. This TX module supports 10/100/1000Base auto-negotiation and can be configured to fit your needs. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Juniper Networks®. 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:

- INF-8074 Compliance
- RJ-45 Connector
- Commercial Temperature 0 to 70 Celsius
- Copper Media Type
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free



Applications:

- 1000Base Ethernet
- Access and Enterprise

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
Supply Current	Icc		320	375	mA	1
Input Voltage	Vcc	3.13	3.3	3.47	V	2
Maximum Voltage	Vmax			4	V	
Surge Current	Isurge			30	mA	3
Power Consumption				1.5	W	

Notes:

1. 1.2W maximum power over the full range of voltage and temperature. Power consumption and surge current are higher than the specified values in the SFP MSA.
2. Referenced to GND.
3. Hot plug above steady state current. Power consumption and surge current are higher than the specified values in the SFP MSA.

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate	DR	10		1000	Mbps	3, 4, 5
Distance Supported	L			100	m	1
Operating Temperature	Tc	0		85	°C	
Storage Temperature	Tstg	-40		85	°C	

Notes:

1. Category 5 UTP. BER<10⁻¹².
2. Clock tolerance is +/- 50ppm.
3. By default, the GE-GB-P is a full duplex device in preferred master mode.
4. Automatic crossover detection is enabled. External crossover cable is not required.
5. 1000Base-T operation requires the host system to have an SGMII interface with no clocks and the module PHY to be configured per Application Note AN-2036. With a SERDES that does not support SGMII, the module will operate at 1000Base-T only.

Low-Speed Signals

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
SFP Output - Low	VOL	0		0.5	V	1
SFP Output - High	VOH	Host_Vcc-0.5		Host_Vcc+0.3	V	1
SFP Input - Low	VIL	0		0.8	V	2
SFP Input - High	VIH	2		Vcc+0.3	V	2

Notes:

1. 4.7k Ω to 10k Ω pull-up to the Host_Vcc, measured at the host side of the connector.
2. 4.7k Ω to 10k Ω pull-up to the Vcc, measured at the SFP side of the connector.

High-Speed Signals

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmission Line - SFP						
Line Frequency	LF		125		MHz	1
Tx Output impedance	ZOUT, TX		100		Ω	2
Rx Input Impedance	ZIN, RX		100		Ω	2
Host - SFP						
Single-Ended Data Input Swing	VIN,sing	250		1200	mV	3
Single-Ended Data Output Swing	VOUT,sing	350		800	mV	3
Rise/Fall Time	Tr/Tf		175		Psec	4
Tx Input Impedance	ZIN		50		Ω	3
Rx Output Impedance	ZOUT		50		Ω	3

Notes:

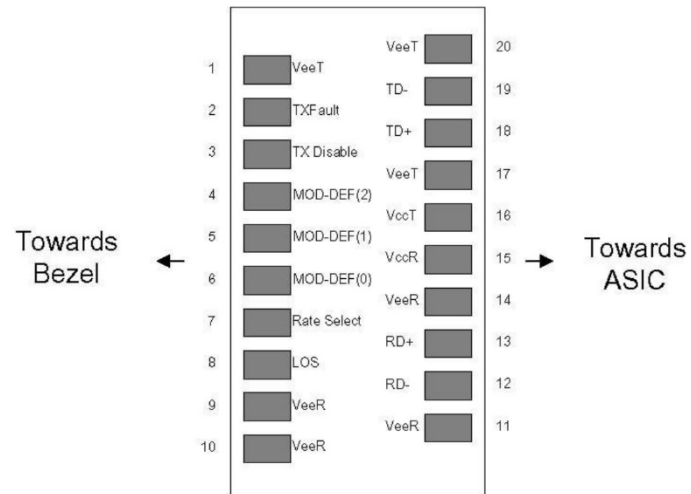
1. 5-level encoding, per IEEE 802.3.
2. Differential, for all frequencies between 1MHz and 125MHz.
3. Single-ended.
4. 20-80%.

Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	Tx_Fault	Transmitter Fault. Not Supported.	
3	Tx_Disable	Transmitter Disabled. PHY disabled on “high” or “open.”	2
4	MOD_DEF(2)	Module Definition 2. Data Line for Serial ID.	3
5	MOD_DEF(1)	Module Definition 1. Clock Line for Serial ID.	3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	3
7	Rate Select	No Connection Required.	
8	LOS	Loss of Signal Indication.	4
9	VeeR	Receiver Ground (Common with Transmitter Ground).	1
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.	
13	RD+	Receiver Non-Inverted Data Out. AC Coupled.	
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.	
19	TD-	Transmitter Inverted Data In. AC Coupled.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

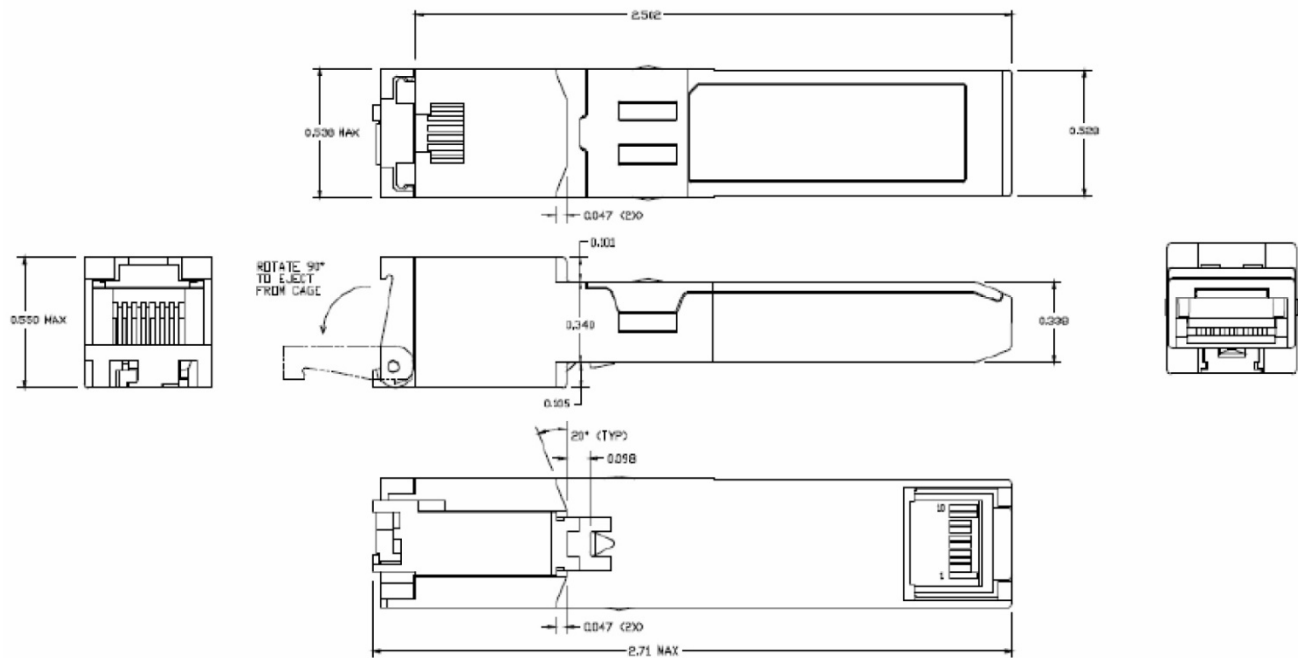
Notes:

1. The circuit ground is connected to the chassis ground.
2. PHY is disabled on TDIS>2.0V or open, enabled on TDIS<0.8V.
3. Should be pulled up with 4.7kΩ to 10kΩ on the host board to a voltage between 2.0V and 3.6V.
MOD_DEF(0) pulls the line “low” to indicate that the module is plugged in.
4. LVTTTL is compatible with a maximum voltage of 2.5V. Not supported on GE-GB-P.



Pin-Out of Connector Block on the Host board

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.

