



SFP-1000BASE-T-I-FT-SKY

Fortinet® Compatible 10/100/1000Base-TX SFP Transceiver (Copper, 100m, RJ-45, -40 to 85C)

Product Description

This Fortinet® compatible SFP transceiver provides 10/100/1000Base-TX throughput up to 100m over a copper connection via a RJ-45 connector. This TX module supports 10/100/1000Base auto-negotiation and can be configured to fit your needs. It is guaranteed to be 100% compatible with the equivalent Fortinet® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. It is built to meet or exceed the specifications of Fortinet®, as well as to comply with MSA (Multi-Source Agreement) standards to ensure 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
- Industrial Temperature -40 to 85 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
Data Rate	DR	10		1000	Mb/sec	2
Cable Length	CL			100	m	3
Bit Error Rate	BER			10		
Operating Temperature	TOP	-40		85	°C	4
Storage Temperature	TSTO	-40		85	°C	5
Supply Current	IS		320	375	mA	6
Input Voltage	VCC	3.14	3.3	3.46	V	7
Maximum Voltage	VMAX			4	V	6

Notes:

1. 10/100/1000M operation requires the host system to have an SGMII interface with no clock. With a SERDES interface, this transceiver will operate at 1000M only
2. IEEE 802.3 compatible
3. Category 5 UTP
4. Case Temperature
5. Ambient Temperature
6. For electrical power interface
7. Referenced to GND. For electrical power interface

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes	
High Speed Electrical Interface Host-SFP							
Single ended Input Swing	VIN	250		1200	mV	1	
Single ended output Swing	VOUT	275		800	mV	1	
Rise time (20%-80%)	TR		175		ps		
Fall Time (20%-80%)	TF		175		ps		
Tx Input Impedance	ZIN		50		ohm	1	
Rx Output Impedance	ZOUT		50		ohm	1	
High Speed Electrical Interface Transmission Line-SFP							
Line Frequency	FL		125		MHz	2	
Tx Output Impedance Differential	ZOUT_TX		100		Ohm	3	
Rx Input Impedance Differential	ZIN_RX		100		Ohm	3	
Low Speed Electrical Signal							
SFP Output	Low	VOL	0		0.5	V	4
	High	VOH	Host_Vcc –0.5		Host_Vcc +0.3	V	4
SFP Input	Low	VIL	0		0.8	V	4
	High	VIH	2		VCC + 0.3	V	4

Notes:

1. Single ended
2. 5-level encoding
3. For all frequencies between 1MHz and 125MHz
4. External 4.7-10k ohm pull-up resistor required

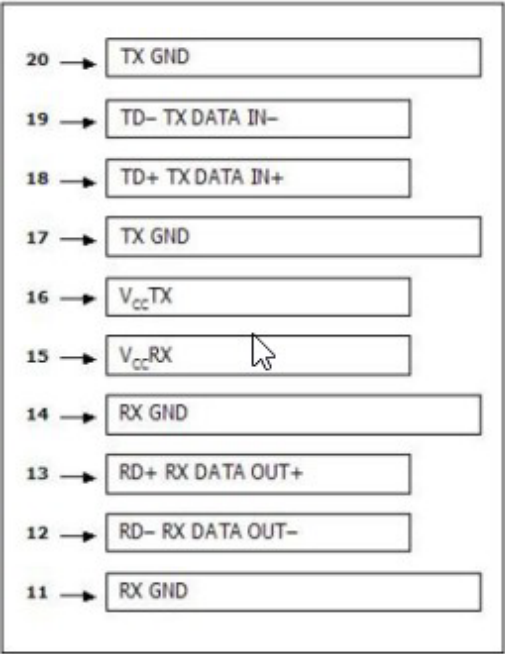
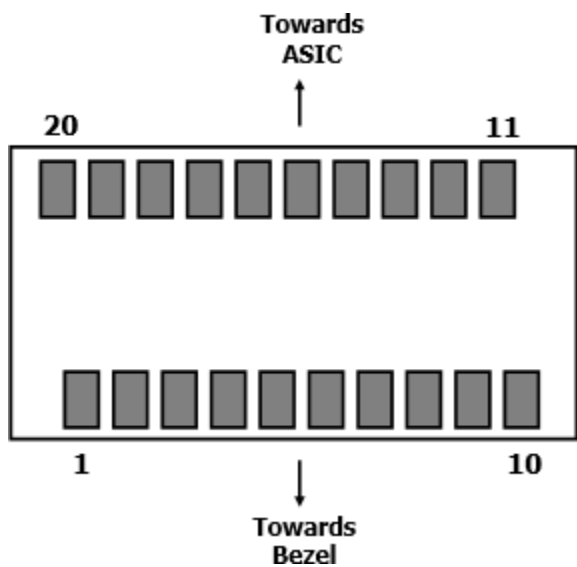
Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VEET	Transmitter ground (common with receiver ground)	1
2	TX_FAULT	Transmitter Fault. Not supported	
3	TX_DISABLE	Transmitter Disable. 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	RX_LOS	Loss of Signal	
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

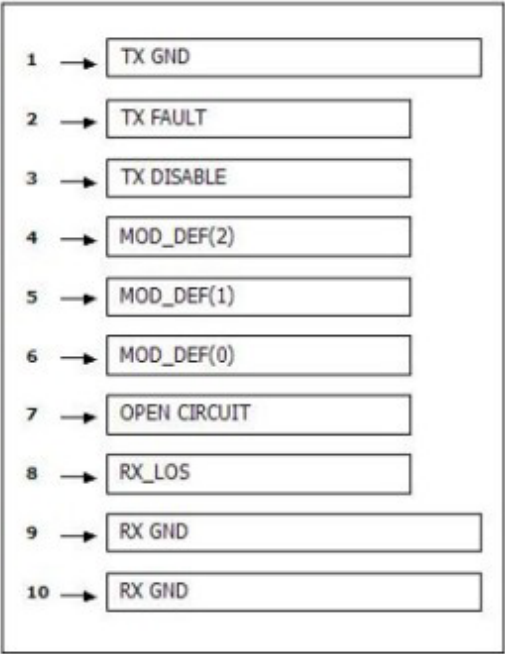
Notes:

1. Circuit ground is connected to chassis ground
2. Disabled: TX_DISABLE > 2V or open, Enabled: TX_DISABLE < 0.8V
3. Should be pulled up with 4.7k-10k ohm on host board to a voltage between 2V and 3.6V

Electrical Pad Layout

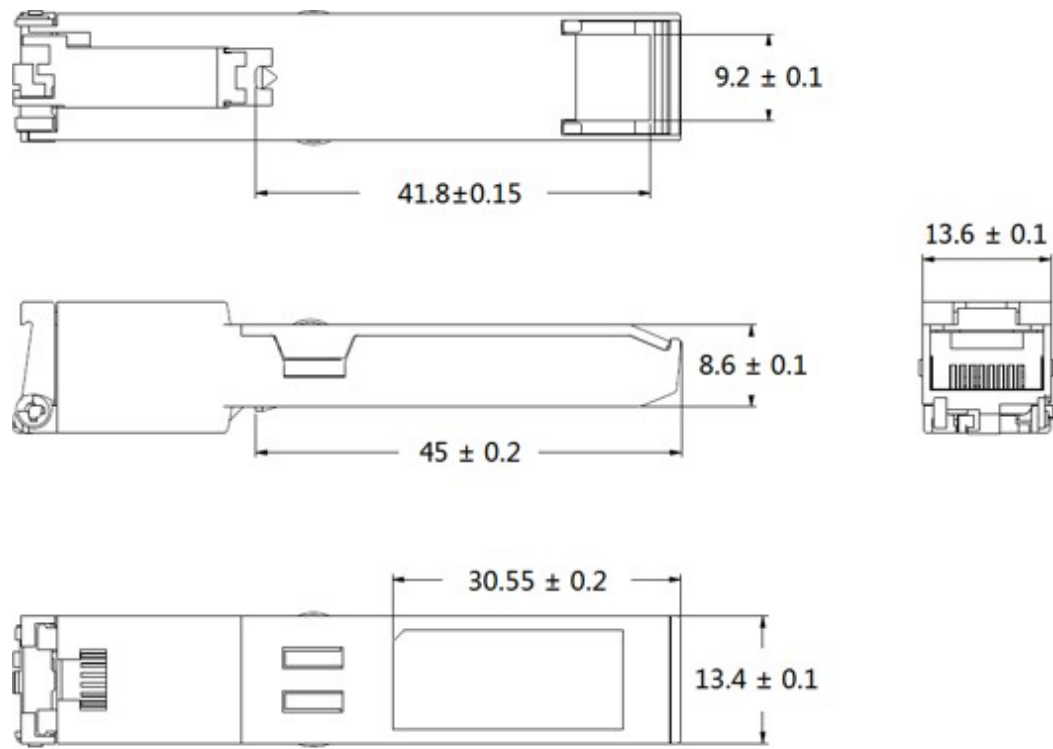


Top of Board



Bottom of Board

Mechanical Specifications



UNIT: mm

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.

