FG-TRAN-GC-OPC

Fortinet® FG-TRAN-GC Compatible TAA 10/100/1000Base-TX SFP Transceiver (Copper, 100m, RJ-45)

Features

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

Applications:

- 1000Base Ethernet
- Access and Enterprise

Product Description

This Fortinet® FG-TRAN-GC 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 Fortinet®. 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. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

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

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Storage Temperature	Ts	-40		85	°C	
Operating Temperature	Top	0		+70	°C	
Maximum Supply Voltage	Vmax	-0.5		4.0	V	
Operating Relative Humidity	RH			85	%	
Data Rate			10/100		Mbps	
Distance				100	m	

Electrical Specifications +3.3 Volt Electrical Power Interface

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.13	3.3	3.47	V	
Supply Current	Icc		300	350	mA	
Surge Current	Isurge		30		A	
Low-Speed Signals, Electronic Characteristics						
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
High-Speed Electrical Interface, Transmission Line-SFP						
Line Baud Rates	fL		125		MHz	3
TX Output Impedance	Zout, TX		100		Ohm	4
RX Input Impedance	Zin, RX		100		Ohm	4
High-Speed Electrical Interface, Host-SFP						
Single ended data input swing	Vin	250		1200	mV	5
Single ended data output swing	Vout	300		800	mV	5
Rise/Fall Time	Tr, Tf		175		Nsec	6
TX Input Impedance	Zin		50		Ohm	5
RX Output Impedance	Zin		50		Ohm	5

Notes:

1. 4.7k to 10k pull-up to host_Vcc, measured at host side of connector
2. 4.7k to 10k pull-up to Vcc, measured at SFP side of connector
3. 5 level encoding per IEEE802.3
4. Differential, for all frequencies between 1MHz and 125MHz
5. Single ended
6. 20%-80%

Pin Descriptions

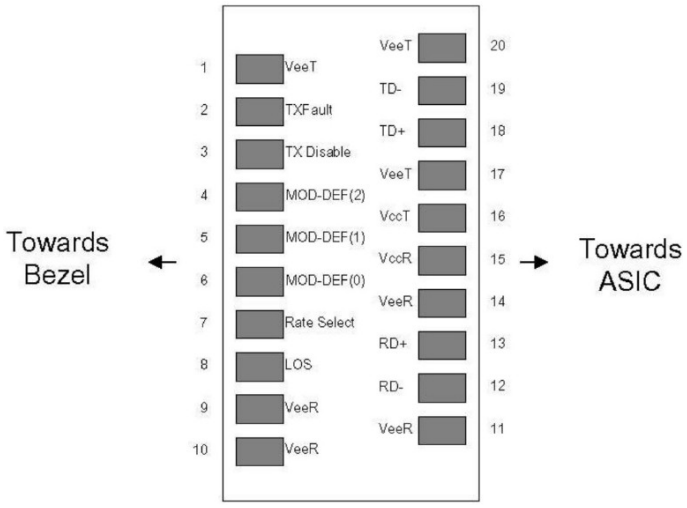
Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	TX Fault	Transmitter Fault. Not Supported	
3	TDIS	Transmitter Disabled. PHY disabled on high or open	2
4	MOD_DEF(2)	Module Definition 2. Data line for serial ID	3
5	MOD_DEF(1)	Module Definition 1. Clock line 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. Circuit ground is connected to chassis ground
2. PHY disabled on TDIS > 2.0V or open, enabled on TDIS <0.8V
3. Should be pulled up with 4.7k-10k Ohms on host board to a voltage between 2.0V and 3.6V.MOD_DEF

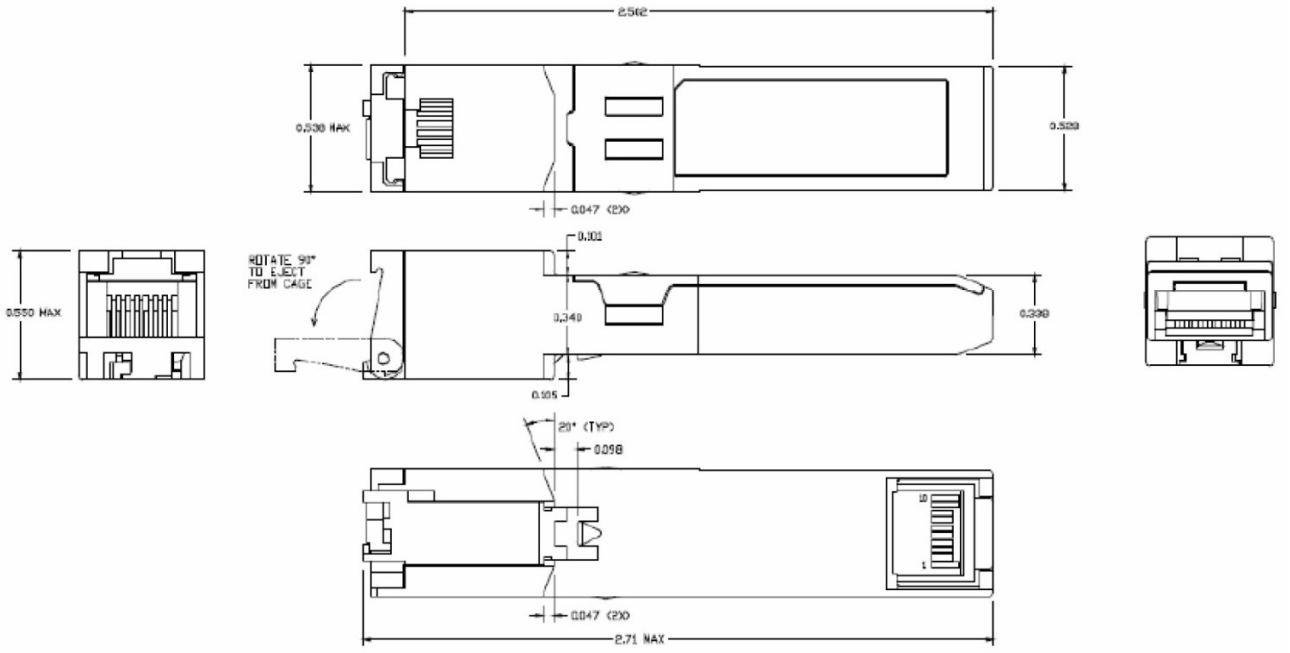
(0) pulls line low to indicate module is plugged in.

4. LVTTL compatible with a maximum voltage of 2.5V. Not supported on GE-GB-P



Pin-out of connector Block on Host board

Mechanical Specifications



OptioConnect
Innovation for the Future of High-Speed Networking

Who We Are
OptioConnect is reshaping the landscape of communication and high-speed networking through intelligent technology. With a core focus on cutting edge technology, we deliver smarter fiber optic solutions for enterprise networks, data centers, and next-gen telecom infrastructures.

What We Do
At OptioConnect, we fuse advanced engineering with intelligent automation to drive the future of networking. Our AI-integrated solutions are designed to optimize performance and streamline operations with:

- Superior Performance
- Network and traffic optimization
- Intelligent energy management
- Seamless OEM compatibility
- Scalable cost-efficiency

Smarter Networks by Design
Innovation isn't just a goal—it's our process. We embed AI and machine learning across our R&D and product lines, enabling adaptive performance, automated tuning, and faster deployment cycles. The result? Networks that don't just work—they learn, evolve, and outperform.

Our Team
Our engineers, data scientists, and network architects bring decades of experience and a future-focused mindset. We provide hands-on support with intelligent insights that turn complex challenges into simple solutions.

Our Mission
To deliver AI-enhanced connectivity that reduces cost, increases speed, and maximizes efficiency—empowering our partners to operate at the forefront of a rapidly evolving digital world.

Let's Connect
Discover how OptioConnect's intelligent infrastructure solutions can power your network's next leap forward.
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