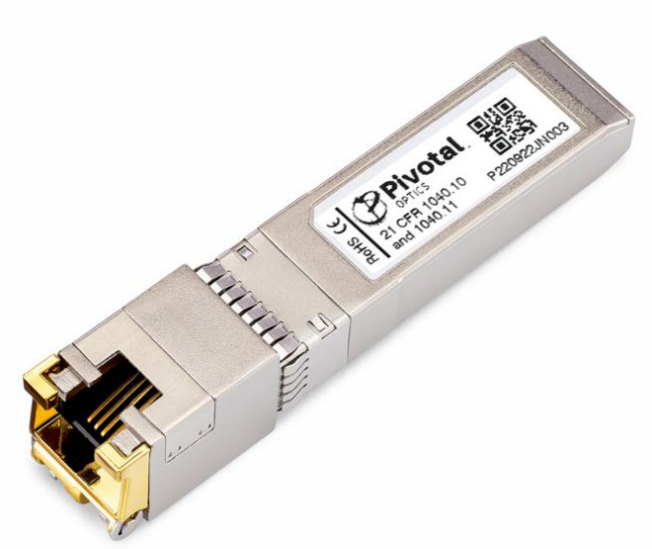
SFP-1G-TXM

10/100/1000M SFP-TXM Copper 100m Transceiver

Product Features

- Up to 1.25Gb/s bi-directional data links
- Hot-pluggable SFP footprint
- Fully metallic enclosure for low EMI
- RoHS compliant and Lead Free
- Low power dissipation (1.05 W typical)
- Compact RJ-45 connector assembly
- Access to physical layer IC via 2-wire
- serial bus
- 10/100/1000BASE-T operation in host
- systems with SGMII interface
- Available operating temperature ranges:
  - Commercial: 0°C to 70°C
  - Industrial: -40°C to 85°C



Product Applications

- 10/100/1000Base-T
- 1.25Gb Ethernet (over Cat-5 cable)

I. Operating Specifications

Exceeding the limits below may damage the transceiver module permanently.

Parameter	Symbol	Min.	Typ.	Max.	Units
Operating Temperature	Commercial	0		+70	°C
	Industrial	-40		+85	°C
Storage Temperature	Tsto	-40		+100	°C
Data Rate	BR	10		1000	Mb/s
Link Distance	D			100	m
Notes: IEEE 802.3 compatible // Category 5 UTP. BER <10-12 // C lock tolerance is +/- 50 ppm					

Notes:

- By default, the variations of SFP-1G-TXM are full duplex devices in preferred master mode
- Automatic crossover detection is enabled. External crossover cable is not required.
- 10/100/1000 BASE-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.

II. Pin Selection

Link Indicator on RX_LOS PIN	1000BASE-X auto-negotiation Enabled by default	Notes
YES	NO	1
NO	YES	2
YES	YES	3

Notes:

1. RX_LOS pin for link indication, and 1000BASE-X auto-negotiation should be disabled on the host system.
2. Compatible with 1000BASE-X auto-negotiation / no link indication feature (RX_LOS is internally grounded)
3. RX_LOS pin for link indication and 1000BASE-X auto-negotiation.

III. Electrical Characteristics (+3.3V Volt Electrical Power Interface)

Caution: Power consumption and surge current are higher than the specified values in the SFP MSA

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Supply Current	Icc		320	375	mA	1
Input	Vcc	3.13	3.3	3.47	V	2
Maximum Voltage	Vmax			4	V	
Total Maximum Current including Surge Current	Isurge			405	mA	3

Notes:

1. 1.2W max power over full range of voltage and temperature.
2. Referenced to GND.
3. Hot plug above steady state current.

IV. Electrical Characteristics (Low-Speed Signals)

Parameter	Symbol	Min.	Typ.	Max.	Units	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 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)

V. Electrical Characteristics (High-Speed Signals)

Caution: Power consumption and surge current are higher than the specified values in the SFP MSA

Parameter	Symbol	Min.	Typ.	Max.	Units	Notes
Transmission Line-SFP						
Line Frequency	fL		125		MHz	1
Tx Output Impedance	Zout		100		Ohm	2
Rx Input Impedance	Zin		100		Ohm	2
HOST-SFP						
Single ended data input swing	Vin	250		1200	mV	
Single ended data output swing	Vout	350	100	800	mV	3
Rise/Fall Time (20% - 80%)	Tr,Tf		175		Ps	
Tx Input Impedance	Zin		50		Ohm	
Rx Output Impedance	Zout		50		Ohm	

Notes:

1. 5-level encoding, per IEEE 802.3
2. Differential, for all frequencies between 1MHz and 125MHz
3. Single ended, can be modified by writing to the PHY's internal registers.

Warranty

All transceivers feature a limited lifetime warranty.

Disclaimer

External physical characteristics are subject to variation. This may include, but is not limited to, external case designs, pull tab colors and/or shapes, removal latch styles or colors, and label sizes and placement. These variations do not affect the function or characteristics of the transceivers.