

LAN-SFP-RJ45

1.25Gbps SFP Transceiver (1000Base SFP, Copper Interface RJ45, 100m, RoHS)

Features

- ◆ Support 1000BASE-T operation in host systems
- ◆ Up to 1.25Gbps bi-direction data links
- ◆ Fully metallic enclosure for low EMI
- ◆ Low power dissipation (1.05 W typical)
- ◆ Compact RJ-45 connector assembly
- ◆ Hot-pluggable SFP footprint
- ◆ 100m transmission over unshielded twisted pair(UTP) Category 5 Cable
- ◆ Access to physical layer IC via 2-wire serial bus

Applications

- ◆ LAN 1000Base-T
- ◆ 1.25 Gigabit Ethernet over Cat 5 cable
- ◆ Switch to Switch interface
- ◆ Router/Server interface

Product Description

The SFP-T 1000BASE-T Copper Small Form Pluggable (SFP) are based on the SFP Multi Source Agreement (MSA). It is compatible with the Gigabit Ethernet and 1000BASE-T standards as specified in IEEE Std 802.3.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Maximum Supply Voltage	Vcc	-0.5	4.0	°C
Storage Temperature	Ts	-40	+85	V

Normal Operating Conditions

Parameter	Symbol		Min.	Typical	Max.	Unit
Operating Temperature	TA	SFP-T	0		+70	°C
Supply Voltage	VCC		3.14	3.3	3.46	V

Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
+3.3 Volt Electrical Power Interface						
Supply Current	I _{cc}		300	350	mA	
Input Voltage	V _{cc}	3.13	3.3	3.47	V	
Surge Current	I _{surge}			30	mA	
Low-Speed Signals, Electronic Characteristics						
SFP Output LOW	V _{OL}	0		0.5	V	4.7k to 10k pull-up to host_V _{cc} , measured at host side of connector
SFP Output HIGH	V _{OH}	host_V _c -0.5		host_V _{cc} +0.3	V	4.7k to 10k pull-up to host_V _{cc} , measured at host side of connector
SFP Input LOW	V _{IL}	0		0.8	V	4.7k to 10k pull-up to V _{cc} , measured at SFP side of connector
SFP Input HIGH	V _{IH}	2		V _{cc} +0.3	V	4.7k to 10k pull-up to V _{cc} , measured at SFP side of connector
High-Speed Electrical Interface, Transmission Line-SFP						
Line Frequency	f _L		125		MHz	5-level encoding, per IEEE 802.3
Tx Output impedance	Z _{out, TX}		100		Ohm	Differential, for all frequencies between 1MHz and 125MHz
Rx Input Impedance	Z _{in, RX}		100		Ohm	Differential, for all frequencies between 1MHz and 125MHz
High-Speed Electrical Interface, Host-SFP						
Single ended data input swing	V _{in}	250		1200	mV	Single ended
Single ended data output swing	V _{out}	350		800	mV	Single ended
Rise/Fall Time	T _r , T _f		175		psec	20%-80%
Tx Input Impedance	Z _{in}		50		Ohm	Single ended
Rx Output Impedance	Z _{out}		50		Ohm	Single ended

General specification

Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Datarate			1000		Mbps	
Distance				100	m	Category 5 UTP. BER <10 ⁻¹²

Pin Descriptions

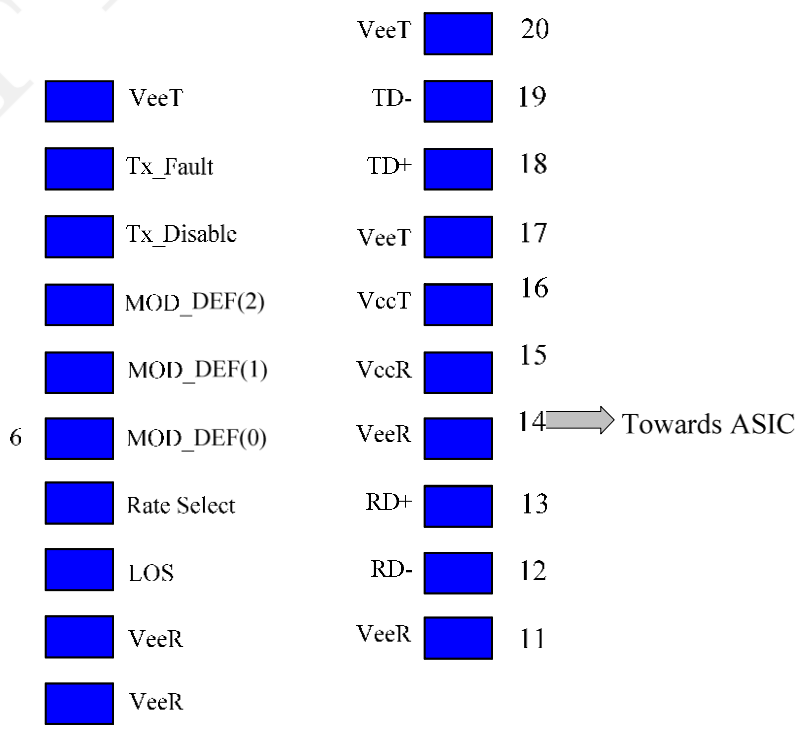
Pin Num.	Name	FUNCTION	Plug Seq.	Notes
1	VeeT	Transmitter Ground	1	
2	TX Fault	Transmitter Fault Indication	3	Not used
3	TX Disable	Transmitter Disable	3	1
4	MOD-DEF2	Module Definition 2	3	2
5	MOD-DEF1	Module Definition 1	3	2

6	MOD-DEF0	Module Definition 0	3	2
7	Rate Select	Not Connected	3	
8	LOS	Loss of Signal	3	Not used
9	VeeR	Receiver Ground	1	
10	VeeR	Receiver Ground	1	
11	VeeR	Receiver Ground	1	
12	RD-	Inv. Received DataOut	3	
13	RD+	Received Data Out	3	
14	VeeR	Receiver Ground	1	
15	VccR	Receiver Power	2	
16	VeeT	Transmitter Power	2	
17	VeeT	Transmitter Ground	1	
18	TD+	Transmit Data In	3	
19	TD-	Inv. Transmit Data In	3	
20	VeeT	Transmitter Ground	1	

Notes:

1. PHY disabled on TDIS > 2.0V or open, enabled on TDIS < 0.8V, used to reset the module.
2. Should be pulled up with 4.7k - 10k Ohms on host board to a voltage between 2.0V and 3.6 V. MOD_DEF(0) pulls line low to indicate module is plugged in.

The following is the Diagram of host board connector block pin numbers and names

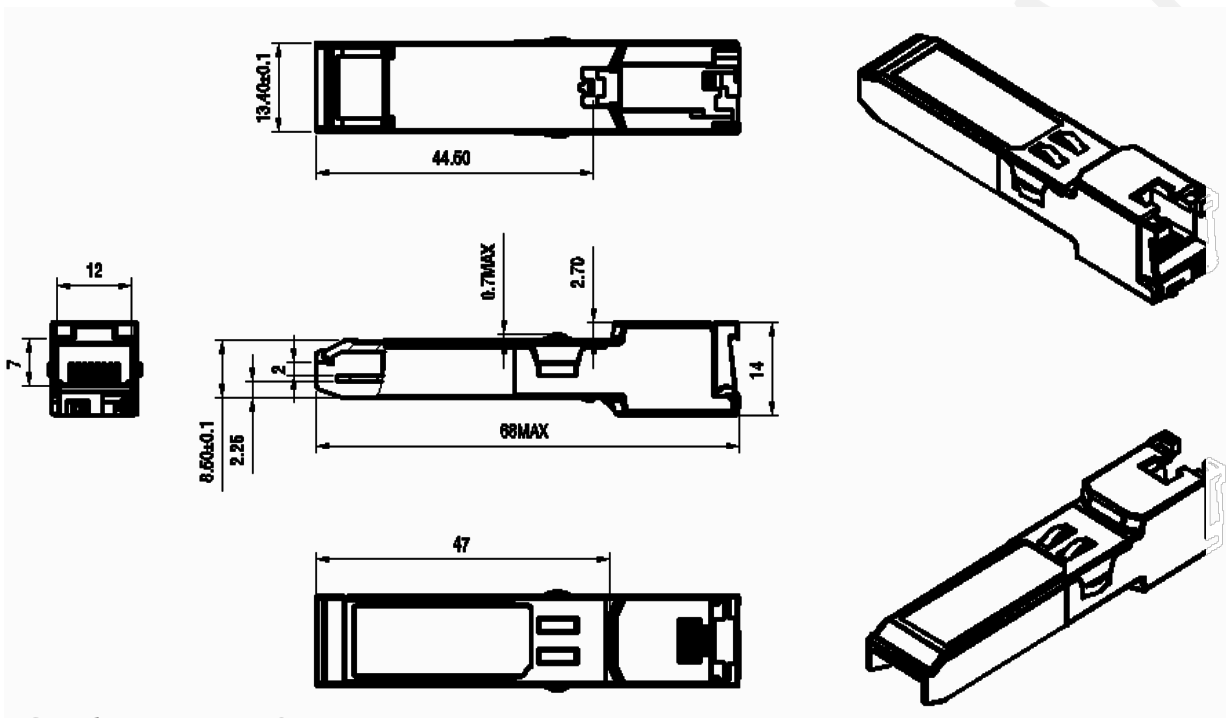


Serial Communication Protocol

LANMASTER Copper SFPs support the 2-wire serial communication protocol outlined in the SFP MSA. These SFPs use a 128 byte EEPROM with an address of A0h. The 1000BASE-T physical layer IC can also be accessed via the 2-wire serial bus at address ACh.

Mechanical Specifications

LANMASTER's Copper SFP transceivers are compliant with the dimensions defined by the SFP Multi-Sourcing



Ordering information

Part No.	Data Rate	Laser	Connector	Distance	DDMI
LAN-SFP-RJ45	1000Base	Copper interface	RJ45	100m	NO

* D--- DDMI

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