ES-T5-R-3

10GBase-T Copper SFP+ Transceiver

PRODUCT FEATURES

- **Supports 10G/5G/2.5G RJ45 interfaces and 10G-R SFI interface adaptation**
- Supports automatic switching between 1G RJ45 interface and 1000BASE-X SFI interface
- **Hot-pluggable SFP+ footprint**
- **Fully metallic enclosure for low EMI**
- **Low power dissipation**
- Support RX_LOS alerts and TX_DISABLE control
- **Compact RJ-45 connector assembly**
- **Access to physical layer IC via 2-wire serial bus**
- **Supports Links up to 60m using Cat-6A Cable**
- **RoHS Compliant**
- **Operating case temperature: 0℃ to 70℃**

APPLICATIONS

- **10GBASE-T**
- **5GBASE-T**
- **2.5GBASE-T**
- **1000BASE-T**

DESCRIPTIONS

The SFP-10GBASE-T is a module that supports Hot-pluggable SFP+ footprint SFP type 10G-SR SFI interface to 1G/2.5G/5G/10G RJ45 interface. The SFP-10GBASE-T supports TX-DISABLED control signal and provides RX-LOS signal. In 2.5 G / 5 G / 10 G and 1 G applications, the automatic identification and base in 1000 - X module and 10 gr type automatic rearrangement of between modules, and inform the SFP master the current module type, greatly improve the applicability of the module and application performance.

SFP – 10Gbase - T support working mode of special code control module, easy to use more application scenarios, such as passive support USXGMII, SFI rate with RJ45 interface, passive follow SFI interface RJ45 rate, etc.

Ordering Information

Part number	Speed mode	TX Disable With PHY	Link Indicator on RX_LOS Pin	Temp
ES-T5-R-3	1.25G/2.5G/5G/10Gb/s	Yes	Yes	0°C ~ +70°C

Line Port	Cable	Reach	Host Port
10Gbase-T	CAT6A	60m/30m	10GBase-R
5Gbase-T	CAT5E	100m	10GBase-R
2.5Gbase-T	CAT5E	100m	10GBase-R
1000base-T	CAT5E	100m	1000Base-X

Electrical Power Interface

+3.3V volt Electrical Power Interface						
Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Supply Current	Is			780	mA	2W max power over full range of voltage and temperature. See caution note below
Input Voltage	Vcc	3.13	3.3	3.47	V	Referenced to GND
Maximum Voltage	Vmax			4	V	
Surge Current	Isurge			30	mA	Hot plug above steady state current.

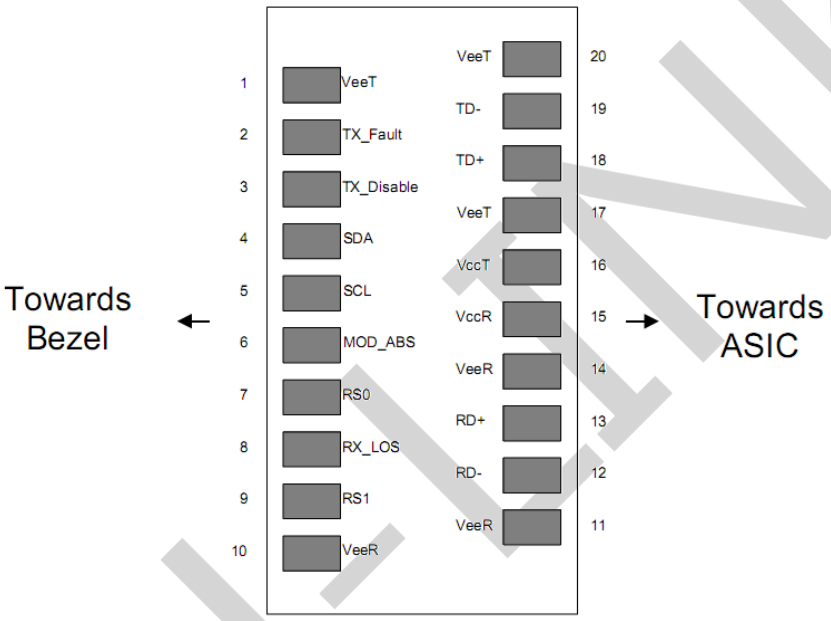
General Specifications

General						
Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Data Rate	BR		10.3		Gb/sec	IEEE 802.3 compatible.
Cable Length	L			60	m	6A Cable UTP. BER <10-12

Environmental Specifications

Environmental Specifications						
Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Operating Temperature	Top	0		70	°C	Case temperature
Storage Temperature	Tsto	-40		85	°C	Ambient temperature

Pin Diagram



Pin Definitions

Pin	Symbol	Name/Description	Ref.
1	VEET	Transmitter Ground (Common with Receiver Ground)	1
2	TFAULT	Transmitter Fault. Not supported.	
3	TDIS	Transmitter Disable. Laser output 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	High indicates no linked. low indicates linked.	
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

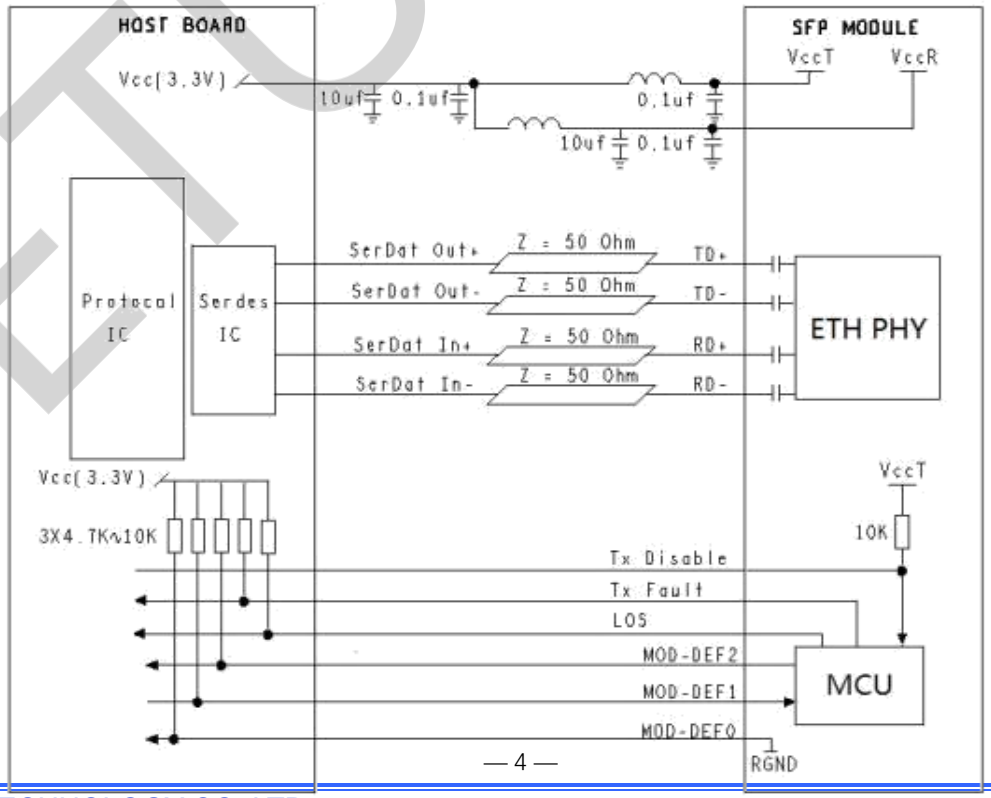
Notes:

1. Circuit ground is connected to chassis ground

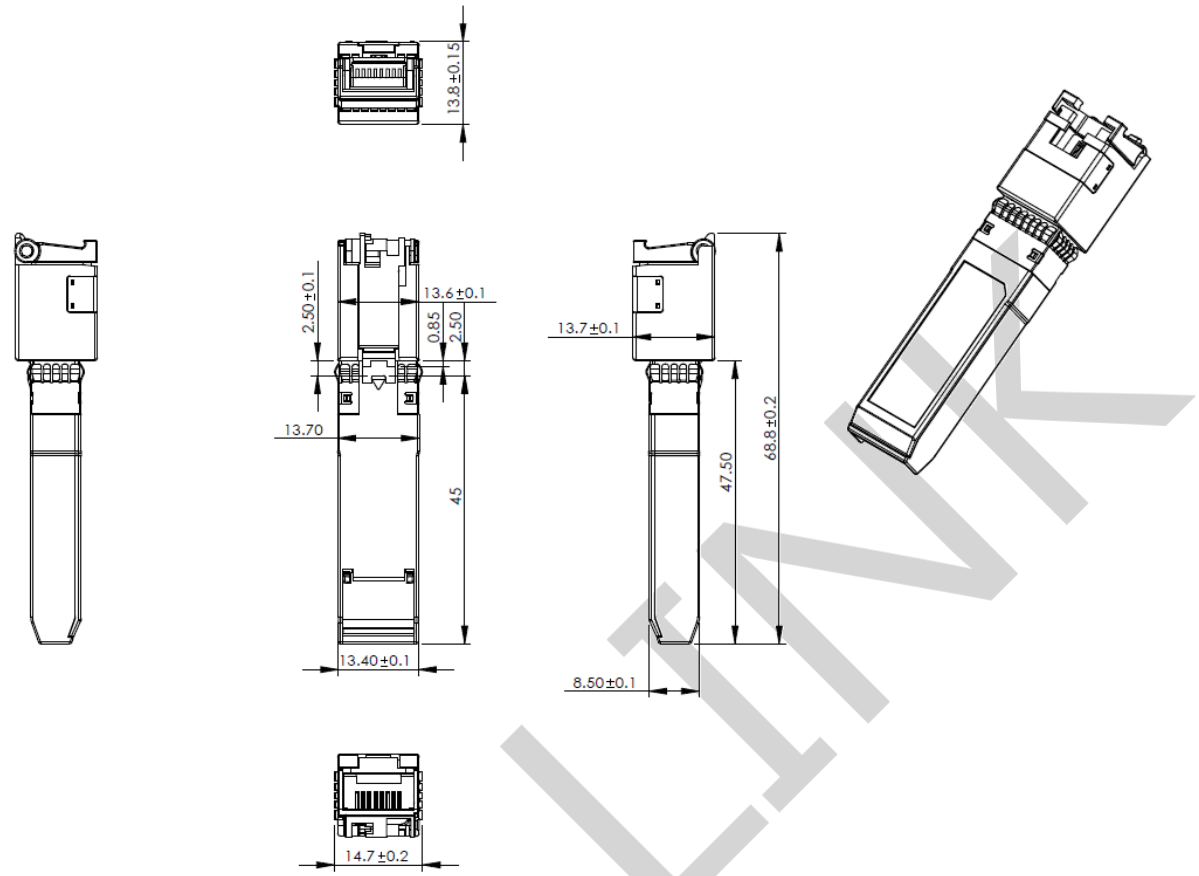
2. PHY disabled on T_{DIS} > 2.0V or open, enabled on T_{DIS} < 0.8V

3. Should be pulled up with 4.7k - 10k Ohms on host board to a voltage between 2.0 V and 3.6 V. MOD_DEF(0) pulls line low to indicate module is plugged in.

Recommended Interface Circuit



Mechanical Diagram



Revision History

Version No.	Date	Description
1.0	Oct,15, 2024	Preliminary datasheet

Company: ETU-Link Technology Co., LTD
Production base: Right side of 3rd floor, No. 102 building, Longguan expressway, Dalang street, Longhua District, Shenzhen city, GuangDongProvince,China 518109
R&D base: Floor 4, Building 4, Nanshan Yungu Phase LI, Taoyuan Community, XiliStreet,Nanshan District, Shenzhen
Tel: +86-755 2328 4603

Addresses and phone number also have been listed at www.etulinktechnology.com.
Please e-mail us at sales@etulinktechnology.com or call us for assistance.