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ES-T5-R-1

10GBase-T Copper SFP+ Transceiver

PRODUCT FEATURES

- ➢ **Up to 10Gb/s bi-directional data links**

- ➢ **Hot-pluggable SFP+ footprint**

- ➢ **Fully metallic enclosure for low EMI**

- ➢ **Low power dissipation**

- ➢ **Compact RJ-45 connector assembly**

- ➢ **Access to physical layer IC via 2-wire serial bus**

- ➢ **Supports Links up to 30m using Cat 6a/7 Cable**

- ➢ **RoHS Compliant**

- ➢ **Operating case temperature: 0℃ to 70℃**

APPLICATIONS

- ➢ **10GBASE-T**

DESCRIPTIONS

The ETU-Link's TS-T5-R-1 Copper Enhanced Small Form Pluggable (SFP+) transceivers are high performance, cost effective module compliant with the 10G Ethernet and 10GBASE-T standards as specified in IEEE 802.3az, which supporting 10Gbps data- rate up to 30meters reach over unshielded twisted-pair category 6a/7 cables. The module provides standard serial ID information compliant with SFP+ MSA, which can be accessed with address of A0h via the 2wire serial EEPROM protocol.

Ordering Information

Part number	Speed mode	TX Disable With PHY	Link Indicator on RX_LOS Pin	Temp
ES-T5-R-1	10Gb/s	Yes	Yes	0°C ~ +70°C

Electrical Power Interface

+3.3V volt Electrical Power Interface						
Parameter	Symbol	Min	Typ	Max	Units	Notes/Conditions
Supply Current	Is			600	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			30	m	Category 6a/7 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
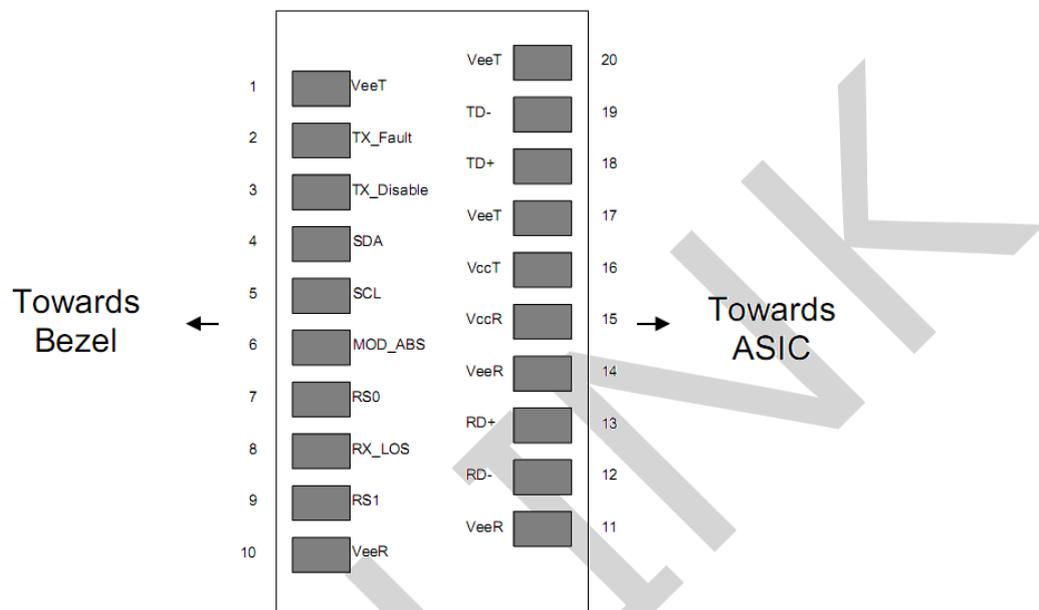
Pin Definitions

Pin	Signal Name	Description	Plug Seq.	Notes
1	V_{EET}	Transmitter Ground	1	
2	TX FAULT	Transmitter Fault Indication	3	Not supported
3	TX DISABLE	Transmitter Disable	3	
4	SDA	SDA Serial Data Signal	3	
5	SCL	SCL Serial Clock Signal	3	
6	MOD_ABS	Module Absent. Grounded within the module	3	
7	RS0	Not Connected	3	
8	LOS	Loss of Signal	3	
9	RS1	Not Connected	3	
10	V_{EER}	Receiver ground	1	
11	V_{EER}	Receiver ground	1	
12	RD-	Inv. Received Data Out	3	
13	RD+	Received Data Out	3	
14	V_{EER}	Receiver ground	1	
15	V_{CCR}	Receiver Power Supply	2	
16	V_{CCT}	Transmitter Power Supply	2	
17	V_{EET}	Transmitter Ground	1	
18	TD+	Transmit Data In	3	

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| 19 | TD- | Inv. Transmit Data In | 3 | |
| 20 | V$_{EET}$ | Transmitter Ground | 1 | |

Recommended Interface Circuit
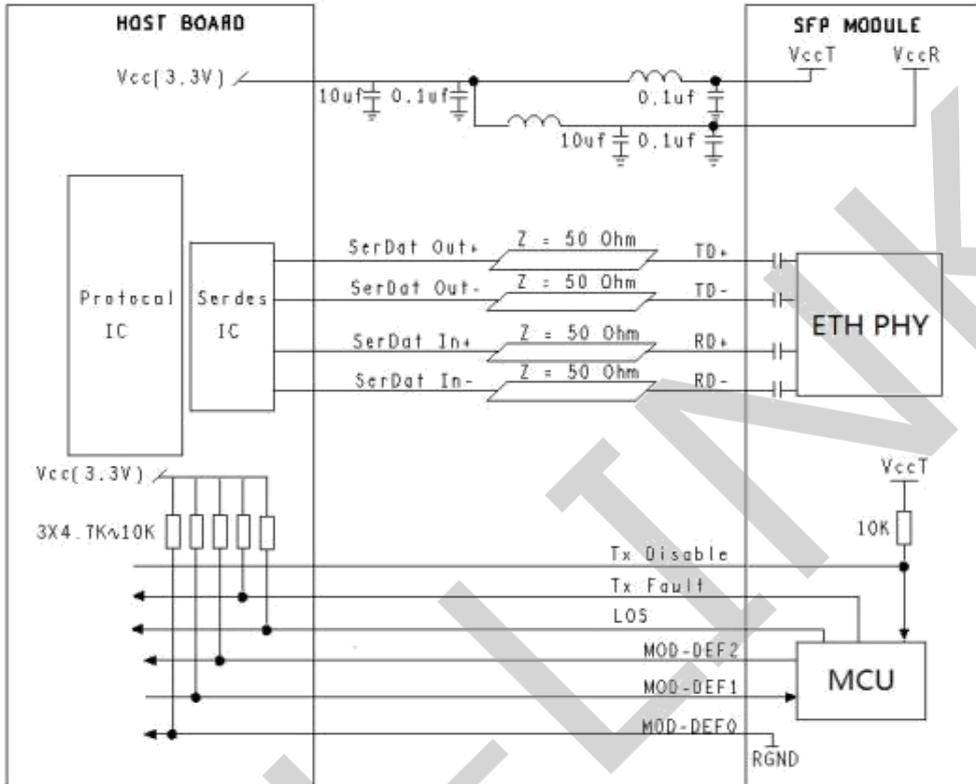
Mechanical Diagram

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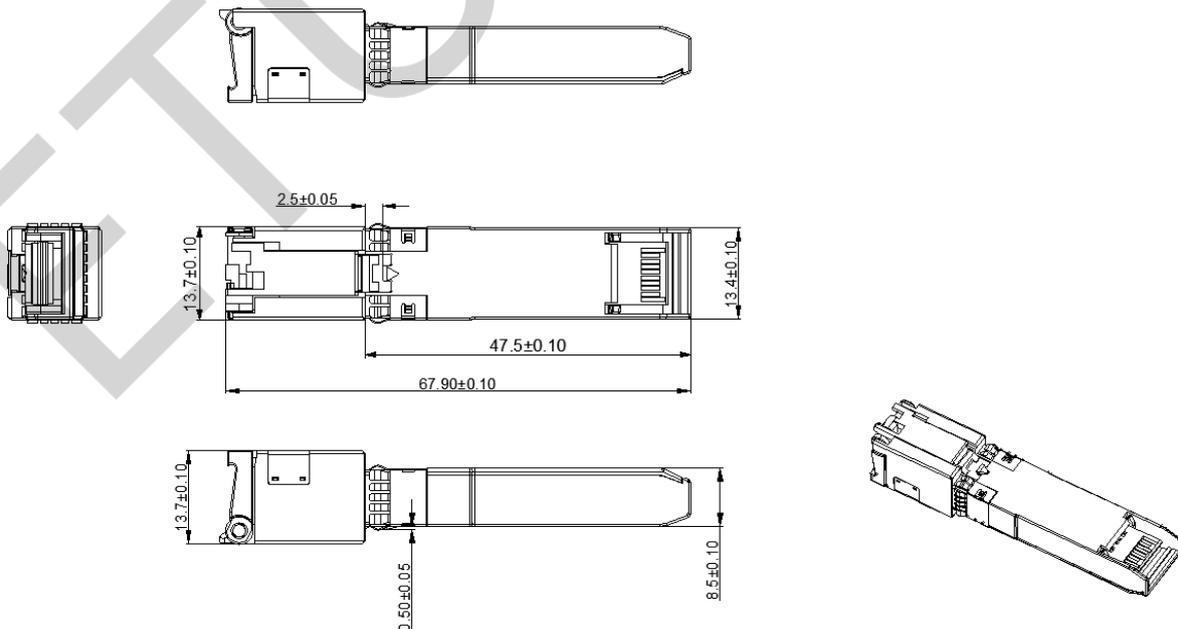
Revision History

Version No.	Date	Description
1.0	Oct,15, 2019	Preliminary datasheet
2.0	Aug 11,2024	Product upgrades

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