AT A GLANCE

E.C.I. NETWORKS's EN-SFPP-RJ45 Copper Small Form Pluggable (SFP) transceivers are high-performance, cost-effective modules compliant with the 10G Ethernet and 10GBASE-T standards as specified in IEEE 802.3az, which support single or multi-rate up to 80 meters 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 an address of A0h via the 2wire serial EEPROM protocol.

PRODUCT FEATURES

- Up to 10Gb/s bi-directional data links
- Hot-pluggable SFP+ footprint
- Fully metallic enclosure for low EMI
- Power consumption <=1.9W
- Compact RJ-45 connector assembly
- Access to physical layer IC via 2-wire serial bus
- Supports Links up to 80m using Cat 6a/7 Cable or better
- RoHS Compliant
- Operating case temperature: 0℃ to 70℃
- Industrial version EN-SFP10G-iRJ45: Operating case temperature: -40℃ to 85℃

APPLICATIONS EXAMPLES

Direct Connection for 10GBASE-T SFP+ Transceivers

When you expand or upgrade your Data Center, there can be a situation when you need to connect 10G SFP+ to RJ45 ports. Most Server NIC (Network Interface Card) and Storage Appliance units have fixed 10GBASE-T ports with RJ-45 connectors, and on the other side of the link, ToR (top-of-rack) switches have SFP+ slots. 10G Copper SFP+ transceiver modules can be used in ToR switches as adapters from SFP+ to RJ-45 to enable RJ45 to an RJ45 connection.

Migration from 1G to 10G servers

Twisted pair cabling and RJ45 connector have been around for some time as it has quicker termination, less expensive equipment and backward compatibility with 1000BASE-T and other legacy data rates. As a result, migration from 1G to 10G Ethernet can happen over a longer period of time. As a matter of fact, some manufacturers' storage and server-side equipment have built-in, fixed RJ45 ports that support from 1000BASE-T to 10GBASE-T data transmission. This makes for an easy side-to-side connection.

WI-FI Connectivity solution

Another industry-wide application for SFP+ to RJ-45 Copper transceivers which we would like to mention are Wi-Fi solutions. Wi-Fi Access points directly benefit from SFP+ to RJ-45 Copper Transceiver module.

Cabling required

To achieve an 80-meter distance using this transceiver, a twisted pair cabling Cat6a/Cat7 or Better with RJ45 connector is required.

In the Data Center, the Pre-Terminated trunking cable assemblies are recommended to improve efficiency and reduce labor cost and waste in large infrastructure.
We offer both options: standard CAT6A/7 cables or Cat6a Pre-Terminated Copper Trunk Cable that both support 10GBase-T.

Ordering Information

Part Number	Description	Data Rate	CBL type	Distance
EN-SFP10G-RJ45-xx	SFP+ Copper Transceiver 10GBase-T, Cat 6a/7, 30M	1G/10G	Cat6A or better	30m
EN-SFP10G-iRJ45-xx	SFP+ Copper Transceiver 10GBase-T, Cat 6a/7, 30M, **Industrial Temperature**	1G/10G	Cat6A or better	30m
EN-SFP10G-RJ45-MR-xx	SFP+ Copper Transceiver **Multirate** 1G/2.5G/5G/10G, Cat 6a/7, 30M	1G/2.5G/ 5G/10G	Cat6A or better	30m
EN-SFPP-RJ45-xx	SFP+ Copper Transceiver 10GBase-T, Cat 6a/7, 80M	10G	Cat6A or better	**80m**

Product Selection

xx: Refers to vendor compatibility
I: I refers to Industrial Temperature where applicable
Per example:
EN-SFP10G-LR-EZ refers to Commercial Temperature and compatible with Evertz, EN-SFP10GIDL-JREX refers to Industrial Temperature and compatible with Juniper EX Series
** Please note pricing is the same for most of the NEMs, including Cisco, Juniper, F5, and Fortinet, except HP, and Evertz. There is an additional charge

Compatibility; Tested and Proven

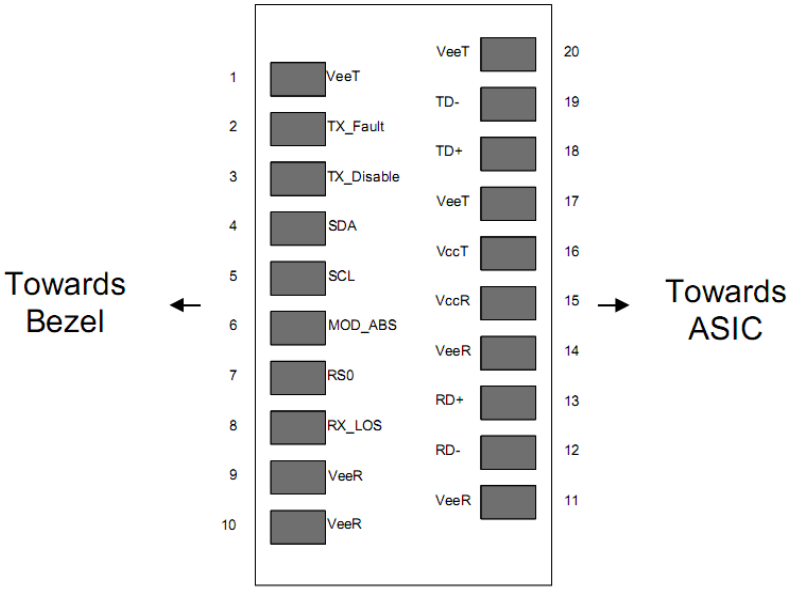
- Proven Compatibility and Interoperability with; Ubiquity, Mikrotik, Cisco, HP, Aruba, Extreme Networks, etc.

Recommended Operating Conditions

+3.3V Volt Electrical Power Interface
an input voltage range of +3.3V +/- 5%.

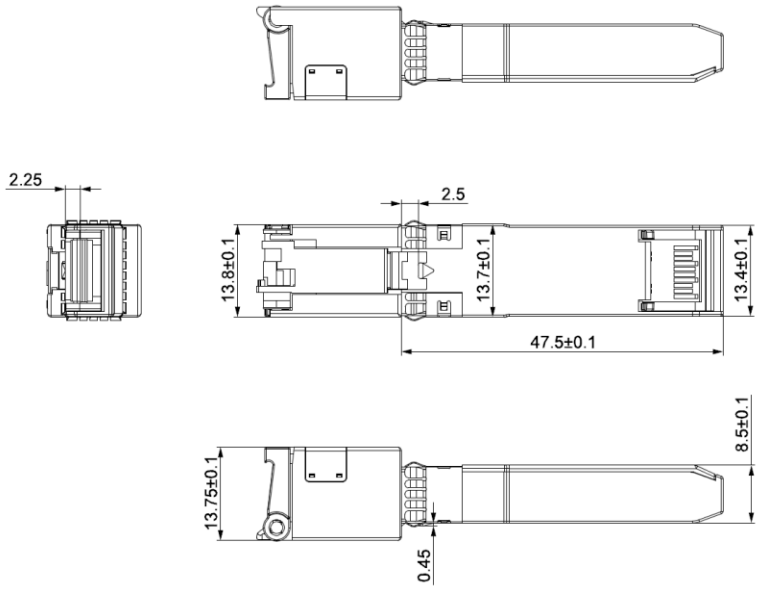
Parameter	Symbol	Min	Typ	Max	Unit	**Notes**
Operating Case Temperature	T_C	0	25	70	°C	
Operating Case Temperature Industrial xcvr	T_C	-40	25	85	°C	EN-SFP10G-iRJ45-xx
Storage Temperature	Ts	-40		85	°C	
Input Voltage	V_{CC}	3.135	3.3	3.465	V	Referenced to GND
Max Voltage	Vmax			3.8	V	
Supply current	Ls	-		750	mA	2.5W max power over full range of voltage and temperature
Data Rate			10.3		Gbps	IEEE 802.3 compatible.

Pin Descriptions



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	V_{EER}	Receiver ground	1	
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	
19	TD-	Inv. Transmit Data In	3	
20	V_{EET}	Transmitter Ground	1	

Mechanical specifications (unit mm)



Notice:

ECI Networks reserves the right to make changes to or discontinue any optical link product or service identified in this publication, without notice, in order to improve design and/or performance. Applications that are described herein for any of the optical link products are for illustrative purposes only.

For further information

Office: 1-800-967-1672
Fax : 1-855-201-7283
mailto:sales@ecin.ca