

1G SFP Copper 100m

1G Eth, SFP, 1000BASE-T, RJ45, 100m

CP-1G-RJ45-xx02

OVERVIEW

The CP-1G-RJ45-xxx2 is a high-performance Copper SFP transceiver designed for Gigabit Ethernet over Category 5 or better copper cabling. It supports 10/100/1000Mbps operation and provides a maximum reach of 100 meters. The module integrates a full physical layer IC (PHY) that performs 1000BASE-T signalling using 5 level PAM modulation across all four twisted pairs in the cable.

The transceiver complies with the SFP Multi-Source Agreement and IEEE 802.3 standards for 1000BASE-T. It supports both SERDES and SGMII host interfaces and offers automatic MDI/MDIX crossover detection. It provides digital diagnostic functions via a 2-wire serial interface as defined by the SFF-8472 specification. The fully shielded RJ45 housing ensures excellent EMI performance and stable operation.

The module operates from a single 3.3V supply with typical power consumption around 1.2W. It is available in Commercial 0°C to +70°C and Industrial -40°C to +85°C temperature options. This SFP is suitable for data centers, enterprise switches, routers and copper-based Gigabit Ethernet links up to 100 meters.

KEY SPECIFICATIONS

- 1G SFP transceiver with integrated RJ45 connector
- Supports 10/100/1000Mbps Ethernet
- 100m distance over Cat5 or better UTP cable
- 1000BASE-T PHY using 5 level PAM signaling
- Auto negotiation supported
- Supports both SGMII and SERDES host interfaces
- Low power consumption around 1.2W
- Temp operating conditions: C-temp (0°C to +70°C) & I-temp (-40°C to +85°C)

TECHNICAL DATA

Parameter	Value	Parameter	Value
Form Factor	SFP (Copper)	Interface Standard	1000BASE-T IEEE 802.3
Transmission Media	Electrical (RJ45)	Auto-negotiation	Towards host
Typical Reach	100m	MAC Interface	SERDES or SGMII ¹⁾
Data Rate Support	10Mbps to 1.25Gbps	RxLOS	YES or NO ¹⁾
Protocol Support	GbE		
Power Consumption	<1.2W		
Operating Temperature	0°C to 70°C / -40°C to 85°C		
Storage Temperature	-40°C to 85°C		

¹⁾ Part Number based on MAC Interface & RxLOS pin configs

Safety/Regulatory Compliance

- RoHS

ABSOLUTE MAX RATING

Exceeding these limits can cause permanent damage to the transceiver

Parameter	Value	Parameter	Value
Supply Voltage	3.13V to 3.47V	Relative Humidity	85%
Storage Temp	-40°C to 85°C		

ORDERING INFORMATION

Ordering Code	MAC Interface	Tx_DIS	RxLOS	Description
CP-1G-RJ45-CA02	SERDES	Yes	No	1G, SFP, 100M, RJ45, T Copper, 0 to 70C
CP-1G-RJ45-CB02	SGMII	Yes	Yes	1G, SFP, 100M, RJ45, T Copper, 0 to 70C
CP-1G-RJ45-IA02	SERDES	Yes	No	1G, SFP, 100M, RJ45, T Copper, -40 to 85C
CP-1G-RJ45-IB02	SGMII	Yes	Yes	1G, SFP, 100M, RJ45, T Copper, -40 to 85C

*Other options are also available on request.

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