

## SFP-10G-ER Cisco Compatible 10Gbase SFP+ Transceiver

### Features

- Supports 10GBASE-ER Ethernet
- Transmission distance up to 40KM on SMF
- Hot-Swappable if your device supports
- 1550nm DFB Transmitter
- Lifetime Warranty
- Plugs into SFP+ port
- Industry-standard LC duplex connector
- Compliant to SFP+ Electrical & Mechanical MSA
- 0°C to +70°C case operating temperature range
- Laser Class 1 IEC / CDRH compliant
- RoHS 6/6 compliant
- Compliant with product safety standards



### Product Overview

The Hummingbird Networks 100% Cisco Compatible SFP-10G-ER optical transceiver module is for transmission at 1550nm over single mode fiber. It supports Ethernet standards which make it ideally suited for 10G data communications. It offers customers a wide variety of 10 Gigabit Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport applications.

The SFP-10G-ER series single mode transceiver is small form factor pluggable module for duplex optical data communications such as 10GBASE-ER/EW defined by IEEE 802.3ae. It is with the SFP+ 20-pin connector to allow hot plug capability. This module is designed for single mode fiber and operates at a nominal wavelength of 1550 nm. The transmitter section uses a 1550nm multiple quantum well DFB, which is class 1 laser compliant according to International Safety Standard IEC-60825. The receiver section uses an integrated InGaAs detector preamplifier (IDP) mounted in an optical header and a limiting post-amplifier IC.

### Ordering Information

Part No.	Data Rate	Laser	Fiber Type	Distance	Optical Interface	DDMI
SFP-10G-ER-HN	10Gbps	1550nm	SMF	40KM	LR/LW	No

### Supported Standards

Application	Standard	Data Rate
IEEE 802.3ae-2002	10 GBASE-ER	10.3125 GBd

## Optical Characteristics

Parameter	Symbol	Min.	Typical	Max	Unit
9µm Core Diameter SMF			40		KM
Data Rate			9.953/10.3125		Gbps
Transmitter Centre Wavelength		1480	1550	1600	nm
Receiver Centre Wavelength		1260		1600	nm
Receiver Sensitivity @ 10.3125Gbps	Pmin			-16	dBm

## Regulatory Compliance

The SFP-10G-ER modules are designed to meet international requirements and standards in terms of product safety. The modules optical output power meets Class 1 requirements for laser safety.

Requirements	Standard	Status
Module Safety	IEC 60950-1:2001 EN 60950-1:2001	TUV Report / Certificate available CB Report / Certificate available
RoHS Compliance	RoHS Directive 2002/95/EC Amendment 4054 (2005/747/EC)	RoHS 6/6 compliant Certificate of compliance available
Laser Eye Safety	CDRH 21 CFR 1040.10 and 1040.11 IEC 60825-1 Rev2 2007	Laser Class 1 according to FDA Laser Class 1 according to IEC Rev2

## ESD & Electromagnetic Compatibility

Requirements	Standard	Status
Electro Static Discharge to the Electrical Pins (ESD)	EIA/JESD22-A114-B MIL-STD 883C Method 3015.7	Exceeds requirements Class 1B (>1000V)
Immunity to ESD (housing, receptable)	IEN 61000-4-2 IEC61000-4-2	Exceeds requirements Discharges ranging from 2kV to 25kV without damages to the transceiver
Electromagnetic Emission (EMI)	FCC Part 15, Class B EN 55022 Class B CISPR 22	Exceeds requirements Class B with more than 6dB margin

## Additional Information

For more information about our compatible SFP modules, contact:

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