

SFP-ER

Miniature Ethernet Copper Range-Extension Device



- Point-to-point Ethernet connectivity with rates up to 100 Mbps
- Eliminates the need for new fiber installation
- Extends the 100m (328ft) distance limit for Ethernet connectivity over single or double copper pairs up to 550m (1,804 ft)
- Small-Form-Factor that can be plugged into any Ethernet switch with SFP ports

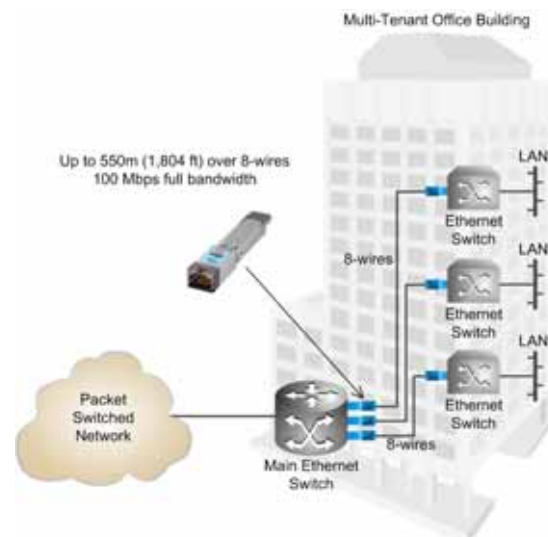


Figure 1. Traffic Distribution in a Multi-Tenant Office Building

Improve bandwidth
and distance
utilization of existing
copper lines

System™
on an **SFP**

SFP-ER is a Small-Form-Factor, Ethernet extender that improves bandwidth and distance of existing copper lines. It helps avoid installation of new fiber lines at customer sites.

Housed in a Small Form-Factor Pluggable (SFP) enclosure, it is designed for quick and simple insertion into any 100BaseFx Ethernet port with an MSA-compatible socket.

SFP-ER is intended for indoor applications and is used for point-to-point Ethernet connectivity.

SFP-ER is based on the proprietary RAD patent that allows full 100 Mbps Ethernet bandwidth to be extended over 2-wire, 4-wire or 8-wire copper lines (full duplex on each pair).

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INSTALLATION

SFP-ER is a book-end solution that can work only with an additional SFP-ER

Follow the instructions below to install and connect SFP-ER:

- Plug SFP-ER into a device/switch with a 100 Mbps Serdes interface. Repeat the this step for the additional SFP-ER device

CONNECTION

- Connect SFP-ER devices using a straight cable:
 - 2-wire cable: use pins 1 and 2
 - 4-wire cable: use pins 1, 2, 3 and 6
 - 8-wire cable: use pins 1–8.
- Always connect SFP-ER to another SFP-ER device. If an SFP-ER was connected to a regular port of any Ethernet device, such as a switch, reset SFP-ER by unplugging and re-inserting the unit.
- Link synchronization may take around one minute

Specifications

HOST INTERFACE

Type

100 Mbps TX Serdes

Host Edge Connector

SFP-based, MSA-compliant

Range

See *Table 1* for a list of ranges

Connector

RJ-45

Data Rate

100 Mbps

GENERAL

The SFP-ER components are lead-free

Indicators

LINK/ACT (green) –

On: Ethernet link is OK

Blinking: Data is being transmitted or received

SPD (yellow) –

On: Extended range is linked at

100 Mbps

Physical

Height: 12.4 mm (0.48 in)

Width: 14.0 mm (0.55 in)

Depth: 74.1 mm (2.91 in)

Weight: 30.0g (1.06 oz)

Power

3.3V

Power Consumption

1.0W

Environment

Temperature:

Operating: 0°–50°C (32°–122°F)

Storage: -40°–85°C (-40°–185°F)

Humidity: Up to 90%, non-condensing

Ordering

SFP-ER

Table 1. Operation Range over CAT5e Cable

Rate [Mbps]	Pairs	Error-Free		BER<10 ⁻¹⁰	
		[m]	[ft]	[m]	[ft]
100	4	550	1,804	575	1886
	2	250	820	300	984
	1	300	984	300	984