

# SFP-9F

## 100Base-TX Copper SFP



Small Form-Factor  
Pluggable module,  
converting  
100Base-FX to  
100Base-TX

**System™**  
on an **SFP**

- Conversion of 100Base-FX traffic to 100Base-TX traffic and vice versa
- Ethernet autonegotiation
- Link state propagation
- Automatic MDI/MDIX for a straight and cross-cable connection
- IEEE 802.3 and SFP MSA compliance
- Lead-free

### Cost-Effective Ethernet Conversion

SFP-9F is a hot-swappable Ethernet electrical interface SFP (Small Form-Factor Pluggable) module that converts 100Base-FX signals coming from the host to 100Base-TX electrical signals.

SFP-9F replaces optical SFP modules that are used with PHY operating in 100Base-FX mode.

### LVPECL to MLT-3 Conversion

The host transmits the serial differential LVPECL data stream, which the SFP-9F module converts into MLT-3 encoded data towards the Ethernet line.

In the other direction, SFP-9F converts the MLT-3 signal received from the Ethernet line into serial differential LVPECL data stream towards the host

### Operation Flexibility in Ethernet Environments

SFP-9F operates in 100 Mbps full-duplex mode, or autonegotiation mode with 100 Mbps full-duplex advertised. The operation mode is configured manually via the DIP switch on the underside of the device.

SFP-9F provides an automatic MDI/MDIX for connecting straight-through or cross-cables. When detected, the status of an Ethernet link is visually indicated by the module's LINK/ACT LED.

When there is no established link on the Ethernet line, the fault propagation mechanism automatically disrupts the link between SFP-9F and the PHY on the host board. The link is re-established when the link on the Ethernet line is restored.

### Compliance and Structure

SFP-9F complies with the IEEE 802.3 and SFP MSA requirements.

The module is housed in a Small Form-Factor Pluggable (SFP) package, with a special release mechanism to easily extract the device from the socket.

The SFP-9F components are lead-free.



**data communications**

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## SFP-9F

## 100Base-TX Copper SFP

## Specifications

## 100BASE-TX INTERFACE

## Compliance

IEEE 802.3

## Cable Type

UTP CAT-5

## Range

100m (328 ft)

## Connector

RJ-45

## HOST INTERFACE

## Host Edge Connector

SFP-based, MSA-compliant

## GENERAL

## Regulatory Compliance

Safety: IEC 60950-1

EMI: EN55022, EN55024

## Indicators

LINK/ACT (green) –

Off: No Ethernet link

On: Ethernet link is OK

Blinking: Data is being transmitted or received

Single blink: On power-up

## 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 Supply

3.3V

## Typical Power Consumption

0.75W

## Environment

Temperature:

Operating: -40°–70°C (-40°–158°F)

Storage: -40°–125°C (-40°–257°F)

Humidity: Up to 90%, non-condensing

## Ordering

## SFP-9F

100Base-TX copper SFP

*Note: It is strongly recommended to order RAD products with original RAD SFPs installed. This will ensure that prior to shipping, RAD has performed comprehensive functional quality tests on the entire assembled unit, including the SFP devices. RAD cannot guarantee full compliance to product specifications for products using non-RAD SFPs.*

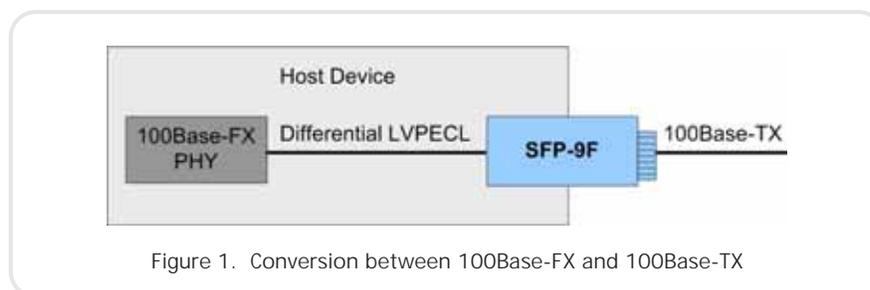


Figure 1. Conversion between 100Base-FX and 100Base-TX

Table 1. Product Comparison

Ordering Name, Interface, Connector	Standards	Cable Type	Impedance	Typical Max. Range (Attenuation)
SFP-9F, Fast Ethernet, RJ-45	100BaseT, IEEE 802.3	UTP, cat. 5	100Ω	100m (328 ft)
SFP-9G, Gigabit Ethernet, RJ-45	1000BaseT, IEEE 802.3	UTP, cat. 5	100Ω	100m (328 ft)

*Note: In addition the Gigabit Ethernet interface, SFP-9G operates differently. For the complete list of available SFPs, refer to the SFP Transceivers data sheet.*

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