

### Introduction

SFP modules, small form-factor pluggable modules, also known as mini-GBICs, are hot-swappable Gigabit Ethernet optical transceivers.

SFP Modules

- SFP-TX: conforms to 1000Base-T copper wiring Gigabit Ethernet standard
- SFP-SX: conforms to 1000Base-SX fiber optic Gigabit Ethernet standard
- SFP-LX: conforms to 1000Base-LX fiber optic Gigabit Ethernet standard



**Note:** Approved optics are tested and supported within their controller/switch systems. Non-approved, third party optics are not tested or supported; therefore, Proper functionality of non-approved, third party optics are not guaranteed. For a complete list of approved optics, contact your sales representative. [Specifications](#) are listed on [page 1](#) of this guide.

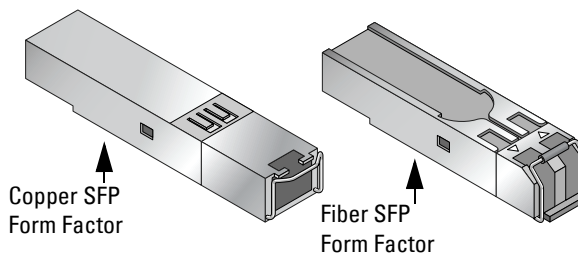
### Approved SFP Modules

SFP Module	Approved Third Party Manufacturer	Third Party Manufacturer Part Number
SFP-TX	Delta Electronics, Inc.	LCP-1250RJ3SR
	Methode	DS-7041-R
SFP-SX	Delta Electronics, Inc.	LCP-1250A4FSR
	Opnext	TRF2716AALB200
SFP-LX	Fiberxon, Inc.	FTM-3012C-SLG

### Specifications

Figure 1 shows the physical form factor of the copper and fiber based SFP modules.

**Figure 1** SFP Module Form Factor



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## SFP-TX

Table 3 describes the specifications for the SFP-TX module.

Parameter	Specification
Connector Type	RJ-45
Cable Type and Range	Cat 5, 5E, 6/Range up to 100 m

## SFP-SX

Table 4 describes the specifications for the SFP-SX module.

Parameter	Specification
Connector Type	LC fiber optic
Cable Type and Range	62.5 $\mu$ m multi-mode fiber/Range up to 260 m (850 feet)
	50 $\mu$ m multi-mode fiber/Range up to 550 m (1800 feet)
Input Wavelength	770 to 860 nm
Center Wavelength	830 to 860 nm
Input Optical Power	-17 to -3 dBm
Output Optical Power	-9.5 to -4 dBm
RMS Spectral Width	850 pm

## SFP-LX

Table 5 describes the specifications for the SFP-LX module.

Parameter	Specification
Connector Type	LC fiber optic
Cable Type and Range	9 $\mu$ m single-mode fiber/Range of 10 km (6.21 miles)
Input Wavelength	1260 nm to 1570 nm
Center Wavelength	1310 nm
Input Optical Power	-20 to -3 dBm
Output Optical Power	-9.5 to -3 dBm
RMS Spectral Width	4 nm

## SFP Installation

To install an SFP module:

1. Use standard ESD precautions when installing an SFP module.
2. Slide the SFP module into a 1000Base-X port of the controller/switch until a connection is made and an audible click is heard.
3. Lock the SFP in place by moving the latch on the module to an upright position, facing the top of the module.

## LC Fiber Optic Cable Connection

To connect an LC fiber optic cable into an SFP-SX or SFP-LX module:

1. Insert the fiber optic cable into the SFP module. Ensure that the latch on the cable faces the top of the SFP module.
2. Slide the cable into place until a connection is made and an audible click is heard.

To disconnect an LC fiber optic cable from an SFP-SX or SFP-LX module:

3. Depress to release the latch on the cable and simultaneously pull the cable out of the port.

## SFP Removal

To remove an SFP module:

1. Use standard ESD precautions when removing an SFP module.
2. Open and release the latch on the SFP module.
3. Pull and remove the module from the port.

## Safety and Regulatory Compliance

To view or download a multi-language document containing country specific restrictions and additional safety and regulatory information, refer to the installation guide that shipped with your controller/switch.



This product complies with 21 CFR Chapter 1, Subchapter J, Part 1040.10, and IEC 60825-1: 1993, A1: 1997, A2: 2001, IEC 60825-2: 2000.

For continued compliance with the above laser safety standards, only approved Class 1 modules from our approved vendors should be installed.



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**Note:** Use of controls or adjustments of performance or procedures other than those specified in this manual may result in hazardous radiation exposure.

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## Proper Disposal of Dell Equipment

For the most current information on Global Environmental Compliance and Dell products please refer to the *Dell PowerConnect W-Series Safety, Environmental, and Regulatory Information* document is included with this product or see our website at [www.dell.com](http://www.dell.com).

## European Union RoHS

**RoHS** Dell products also comply with the EU Restriction of Hazardous Substances Directive 2002/95/EC (RoHS). EU RoHS restricts the use of specific hazardous materials in the manufacture of electrical and electronic equipment. Specifically, restricted materials under the RoHS Directive are Lead (including Solder used in printed circuit assemblies), Cadmium, Mercury, Hexavalent Chromium, and Bromine. Some Dell products are subject to the exemptions listed in RoHS Directive Annex 7 (Lead in solder used in printed circuit assemblies). Products and packaging will be marked with the “RoHS” label shown at the left indicating conformance to this Directive.

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