

Grandstream Networks, Inc.

Fiber Modules - User Guide



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Overview

Grandstream SFP and SFP+ fiber modules provide optical connections for enterprise LANs and other network links. This guide covers four hot-pluggable modules, with single-mode and multimode options for different speeds and transmission distances.

Use this guide to select a module and fiber cable, connect the link, and compare the technical specifications. All four modules use duplex LC connectors and support Digital Diagnostic Monitoring (DDM) through I2C.

Select a Fiber Module

- Choose the module according to the host device, fiber type, required speed, and link distance. Check the host device documentation for supported modules and port speeds before installation.
- **Single-mode fiber, 1310 nm:** F-SM1310-20KM-1.25G is an SFP module with a listed transfer distance of 20 km. F-SM1310-10KM-10G is a 10 Gbps SFP+ module with a listed transfer distance of 10 km.
 - **Multimode fiber, 850 nm:** F-MM850-550M-1.25G is an SFP module supporting 550 m over 50/125 μ m (OM2) fiber or 300 m over 62.5/125 μ m (OM1) fiber. F-MM850-300M-10G is a 10 Gbps SFP+ module with a listed transfer distance of 300 m.
 - **Cable and connector:** Use single-mode fiber with a single-mode module and multimode fiber with a multimode module. Use duplex LC connections and verify that the equipment at both ends is compatible.

Technical Specifications

Specification	F-SM1310-20KM-1.25G	F-SM1310-10KM-10G	F-MM850-550M-1.25G	F-MM850-300M-10G
Fiber Mode	Single-Mode Fiber		Multi-Mode Fiber	
Connector Type	Duplex LC			
DDM	Yes, I2C for integrated Digital Diagnostic Monitoring			
Nominal Wavelength	1310 nm		850 nm	
Data Rate	1.25 Gbps SFP	10 Gbps SFP+	1.25 Gbps SFP	10 Gbps SFP+
Max Power Consumption	1 W	1 W	0.8 W	1 W
Transfer Distance	20 km	10 km	50/125 μm (OM2): 0.55 km 62.5/125 μm (OM1): 0.3 km	0.3 km
TX Power	-9 to -3 dBm, ±3 dB	-8.2 to 0.5 dBm, ±3 dB	-10 to -3 dBm, ±3 dB	-6 to -1 dBm, ±3 dB
RX Power	-18 to -1 dBm, ±3 dB	-14.4 to 0.5 dBm, ±3 dB	-18 to -3 dBm, ±3 dB	-11.1 to 0.5 dBm, ±3 dB
Operation Voltage	3.3 V ±0.3 V			
Environmental	Operation: 0 °C to 70 °C, humidity: 5% to 85% Storage: -40 °C to 85 °C			
Unit Weight	17.10 g	18.50 g	15.80 g	18.50 g
Standards	SFF-8472, SFP MSA, IEEE 802.3z, RoHS-6	SFF-8472, SFP+ MSA, IEEE 802.3ae, RoHS-6	SFF-8472, SFP MSA, IEEE 802.3z, RoHS-6	SFF-8472, SFP+ MSA, IEEE 802.3ae, RoHS-6
Compliance	FCC, CE, FDA			

Note: TX indicates transmit optical power. RX indicates the receive optical power range.

Connect the Fiber Link

Laser safety: Do not look directly into the fiber connectors or optical ports.

1. Hold the module by its sides and slide it smoothly into the compatible SFP or SFP+ port until it is securely seated.
2. Identify the module's TX and RX connections. Connect the duplex LC fiber cable to the module and the peer device, ensuring the transmit and receive paths are correctly paired.
3. With both devices powered on, check the port's link indicator. Refer to the host device's guide for the meaning of its LED colors and states.
4. If the link does not come up, check the fiber connections and confirm that the peer device is powered on and its port is enabled. Recheck the module and cable selection against the specifications above.