

small form factor pluggables

# TN-SFP-XXX

## SFP Modules: Small Form Factor Pluggables MSA Compatible Duplex LC & RJ-45



### Applications

- ▶ Gigabit Ethernet Switches and Routers
- ▶ Fibre Channel Switch Infrastructure
- ▶ xDSL Applications
- ▶ Metro Edge Switching

### Features

- ▶ Hot-Pluggable SFP Footprint Duplex LC Optical Transceiver
- ▶ Digital Diagnostic Function
- ▶ Class 1 Laser International Safety Standard IEC-60825 Compliant
- ▶ Compatible with SFP Multi-Sourcing Agreement (MSA)

### Additional Features

#### TN-SFP-SX or -LXx SFP modules

- ▶ Compliant with IEEE 802.3z Gigabit Ethernet
- ▶ Compliant with Fiber Channel 1X SM-LC-L FC-PI

Can be used on Optical Line Converter xFMFF4040-100

#### TN-SFP-OC3x SFP modules

- ▶ Compliant with 100BASE-FX
- ▶ Compliant with Intermediate-Reach SONET OC-3/SDH STM-1 (S-1.1)

#### TN-SFP-OC12x SFP modules

- ▶ Compliant with Intermediate-Reach SONET OC-12/SDH STM-4 (S-4.1)

#### TN-SFP-TX

- ▶ Compliant with IEEE802.3u Fast Ethernet

#### TN-SFP-T-MG

- ▶ Compliant with IEEE 802.3:2002
- ▶ 10/100/1000BASE-T operation in host system with SGMII interface
- ▶ Compatible with 1000BASE-T Auto-Negotiation
- ▶ AutoCross™ [

### Specifications

Standards	IEEE 802.3 2003; ANSI X3.297-1997
Dimensions	<b>Width:</b> 0.52" [13 mm]
	<b>Depth:</b> 2.18" [55 mm]
	<b>Height:</b> 0.33" [8 mm]
Power	3.3V
Power Consumption	0.66 Watts
Environment	TN-SFP-SX TN-SFP-SXD TN-SFP-LX1 TN-SFP-ESX5 TN-SFP-ESX6 TN-SFP-OC3S3 TN-SFP-ELX1 TN-SFP-FC2XM TN-SFP-FC2XS2 -10°C – 85°C
	TN-SFP-LX3 TN-SFP-LX5 TN-SFP-LX8 TN-SFP-LX12 TN-SFP-LX16 TN-SFP-OCx TN-SFP-FC2XS40 TN-SFP-FC2XS15 TN-SFP-TX TN-SFP-T-MG 0°C – 70°C
Compliance	TN-SFP-STM1E -20°C – 85°C
	IEC-60825; FDA 21; CFR 1040.10 and 1040.11
Warranty	Lifetime

\*Note: Per Cisco Systems' literature, the Cisco switches with SFP slots do not accept modules other than Cisco's own SFPs. The Cisco switch identifies the manufacturer ID along with the part number and blocks operations to this port for non-Cisco interfaces.

\*Transition Networks' SFP units fully comply with Multi-Sourcing Agreement (MSA). This compliance allows Transition Networks' SFP modules to be used on other MSA-compliant SFP platforms without any problems.

### Ordering Information

<b>TN-SFP-STM1E</b> OC3/STM1 (Mini BNC)	
<b>TN-SFP-OC3M</b> 100BASE-FX/OC-3 1310nm multimode (LC) [2 km/1.2 mi.] Link Budget: 11.0 dB	
<b>TN-SFP-OC3S</b> 100BASE-FX/OC-3 1310nm single mode (LC) [20 km/12.4 mi.] Link Budget: 17.0 dB	
<b>TN-SFP-OC3S3</b> 100BASE-FX/OC-3 1310nm SM (LC) [30 km/18.6 mi.] Link Budget: 20.0 dB	
<b>TN-SFP-OC3S8</b> 100BASE-FX/OC-3 1550nm SM (LC) [80 km/49.7 mi.] Link Budget: 29.0 dB	
<b>TN-SFP-OC3S10</b> 100BASE-FX/OC-3 1550nm SM (LC) [100 km/62.1 mi.] Link Budget: 31.0 dB	
<b>TN-SFP-OC3S12</b> 100BASE-FX/OC-3 1550nm SM (LC) [120 km/74.6 mi.] Link Budget: 34.0 dB	
<b>TN-SFP-OC3S20</b> 100BASE-FX/OC-3 1550nm SM (LC) [200km/124.3 mi.] Link Budget: 46.0 dB	
<b>TN-SFP-OC12M</b> OC-12/STM-4 SFP 1300nm MM (LC) [1 km/0.6 mi.] Link Budget: 7.0 dB	
<b>TN-SFP-OC12S</b> OC-12/STM-4 SFP 1310nm SM (LC) [20 km/12.4 mi.] Link Budget: 14.0 dB	
<b>TN-SFP-OC12S4</b> OC-12/STM-4 SFP 1310nm SM (LC) [40 km/24.9 mi.] Link Budget: 28.0 dB	
<b>TN-SFP-OC12S8</b> OC-12/STM-4 SFP 1310nm SM (LC) [80 km/49.7 mi.] Link Budget: 29.0 dB	
<b>TN-SFP-SX (model without DMI)</b> <b>TN-SFP-SXD (model with DMI)</b> 1000BASE-SX 850nm multimode (LC) [62.5/125 µm: 220 m/722 ft.] Link Budget: 8.0 dB [50/125 µm: 550 m/1804 ft.] Link Budget: 8.0 dB	
<b>TN-SFP-ESX5</b> 1000BASE-SX 1300nm Ext. MM (LC) [50/125 µm fiber only: up to 2 km/1.2 mi.] Link Budget: 8.0 dB	
<b>TN-SFP-ESX6</b> 1000BASE-SX 1300nm Ext. MM (LC) [62.5/125 µm fiber only: up to 2 km/1.2 mi.] Link Budget: 8.0 dB	
<b>TN-SFP-FC4XM</b> Fiber Channel 1x/2x/4x/1000BASE-SX 850nm (LC) multimode [62.5/125 µm: 70m/246 ft.] [50/125 µm: 150m/492 ft.] Link Budget: 6.0 dB	
<b>TN-SFP-FC4XS5</b> Fiber Channel 1x/2x/4x/1000BASE-LX 1310 nm (LC) SM [5 km/3.1 mi.] Link Budget: 10.0 dB	
<b>TN-SFP-FC4XS10</b> Fiber Channel 1x/2x/4x/1000BASE-LX 1310 nm (LC) SM [10 km/6.2 mi.] Link Budget: 10.0 dB	
<b>TN-SFP-FC4XS20</b> Fiber Channel 1x/2x/4x/1000BASE-LX 1310 nm (LC) SM [20 km/12.4 mi.] Link Budget: 13.0 dB	
<b>TN-SFP-FC4XS40</b> Fiber Channel 1x/2x/4x/1000BASE-LX 1550 nm (LC) SM [40 km/24.9 mi.] Link Budget: 18.0 dB	
<b>TN-SFP-FC4XS80</b> Fiber Channel 1x/2x/4x/1000BASE-LX 1550 nm (LC) SM [80 km/49.7 mi.] Link Budget: 26.0dB	
<b>TN-SFP-LX1 (model with DMI)</b> <b>TN-SFP-ELX1 (model without DMI)</b> 1000BASE-LX 1310nm single mode (LC) [10 km/6.2 mi.] Link Budget: 11.5 dB	
<b>TN-SFP-LX3</b> 1000BASE-LX 1310nm single mode (LC) [30 km/18.6 mi.] Link Budget: 19.0 dB	
<b>TN-SFP-LX5</b> 1000BASE-LX 1550nm single mode (LC) [50 km/31.1 mi.] Link Budget: 19.0 dB	
<b>TN-SFP-LX8</b> 1000BASE-LX 1550nm single mode (LC) [80 km/49.7 mi.] Link Budget: 24.0 dB	
<b>TN-SFP-LX12</b> 1000BASE-LX 1550nm single mode (LC) [120 km/74.6 mi.] Link Budget: 32.0 dB	
<b>TN-SFP-LX16</b> 1000BASE-LX 1550nm single mode (LC) [160 km/99.4 mi.] Link Budget: 37.0 dB	
<b>TN-SFP-LX20</b> 1000BASE-LX 1550 nm (LC) SM [200 km/124.3 mi.] Link Budget: 41.0 dB	
<b>TN-SFP-FC2XM</b> OC-48/STM-16/Fibre Channel 1x/2x/1000BASE-SX 850nm (LC) MM [62.5/125 µm: 150 m/492 ft.]* Link Budget: 6.0 dB [50/125 µm: 300 m/984 ft.]* Link Budget: 6.0 dB	
<b>TN-SFP-FC2XS2</b> Fibre Channel 2x/1x/OC-48/STM-16/ 1000BASE-LX 1310nm single mode (LC) [2 km/1.2 mi.] Link Budget: 8.5 dB	
<b>TN-SFP-FC2XS15</b> Fibre Channel 2x/1x/OC-48/STM- 16/1000BASE-LX 1310nm single mode (LC) [15 km/9.3 mi.] Link Budget: 13.0 dB	
<b>TN-SFP-FC2XS40</b> Fibre Channel 2x/1x/OC-48/STM-16/ 1000BASE-LX 1310nm single mode (LC) [40 km/24.9 mi.] Link Budget: 26.0 dB	
<b>TN-SFP-TX</b> 100BASE-TX (RJ-45) [100 m/328 ft.]	
<b>TN-SFP-T-MG</b> 10/100/1000BASE-T (RJ-45) [100 m/328 ft.]	
Extended Operating Temperature: -40°C to +85°C	
<b>TN-SFP-LX1T</b> 1000BASE-LX 1310nm single mode (LC) [10 km/6.2 mi.] Link Budget: 11.5 dB	
<b>TN-SFP-OC3MT</b> 100BASE-FX/OC-3 1300nm MM (LC) [2 km/1.2 mi.] Link Budget: 11.0 dB	
<b>TN-SFP-OC3ST</b> 100BASE-FX/OC-3 1310nm SM (LC) [20 km/12.4 mi.] Link Budget: 17.0 dB	