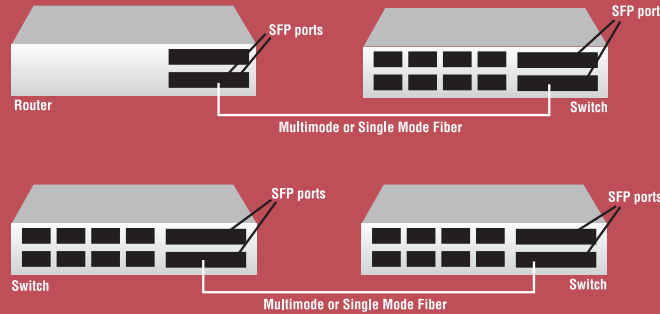


- ▶ Hot-Pluggable SFP Footprint LC Optical Transceiver
- ▶ Digital Diagnostic Function
- ▶ Class 1 Laser International Safety Standard IEC-60825 Compliant
- ▶ Compatible with Small Form Factor Pluggable Multi-Sourcing Agreement (MSA)

TN-SFP-xxx



Fiber Connections with SFPs



Note: Per Cisco Systems's 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. Other major SFP switch manufacturers do not indicate in their literature that such restrictions are imposed.

Transition Networks's 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.

Applications

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

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

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-FC2Xx SFP modules:

- ▶ Compliant with IEEE 802.3z Gigabit Ethernet
- ▶ Compliant with Fiber Channel 1X/2X SM-LC-L FC-PI
- ▶ Compliant with Short-Reach SONET OC-48 / SDH STM-16 (S-16.1)

Specifications

See pages 171–181 for complete fiber optic connector specs.

Standards	IEEE 802.3 2003; ANSI X3.297-1997	
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]	
Power	3.3V	
Power Consumption	0.66 watts	
Environment	TN-SFP-SX TN-SFP-LX1 TN-SFP-ESX6 TN-SFP-FC2XM -10°C – 85°C	TN-SFP-SXD TN-SFP-ESX5 TN-SFP-ELX1 TN-SFP-FC2XS2: 0°C – 70°C
Compliance	IEC-60825; FDA 21; CFR 1040.10 and 1040.11	
Warranty	Lifetime	

Ordering Info

TN-SFP-OC3M
SFP 100BASE-FX/OC-3
1300nm MM (LC)
[2 km/1.2 mi.] Link Budget: 11.0 dB

TN-SFP-OC3S
SFP 100BASE-FX/OC-3
1310nm SM (LC)
[20 km/12.4 mi.] Link Budget: 17.0 dB

TN-SFP-OC12M
OC-12/STM-4 SFP 1300nm MM (LC)
[1 km/0.6 miles] Link Budget: 7.0 dB

TN-SFP-OC12S
OC-12/STM-4 SFP 1310nm SM (LC)
[20 km/12.4 mi.] Link Budget: 14.0 dB

TN-SFP-SX (model without DMI)
TN-SFP-SXD (model with DMI)
 1000BASE-SX 850nm MM (LC)
 [62.5/125µm: 220 m/722 ft.]
 Link Budget: 8.0 dB
 [50/125µm: 550 m/1804 ft.]
 Link Budget: 8.0 dB

TN-SFP-ESX5
1000BASE-SX 1300nm Ext. MM (LC)
[50/125µm fiber only:
up to 2 km/1.2 mi.] Link Budget: 8.0 dB

TN-SFP-ESX6
1000BASE-SX 1300nm Ext. MM (LC)
[62.5/125µm fiber only:
up to 2 km/1.2 mi.] Link Budget: 8.0 dB

TN-SFP-LX1 (model with DMI)
TN-SFP-ELX1 (model without DMI)
 1000BASE-LX 1310nm (LC) SM
 [10 km/6.2 mi.] Link Budget: 11.5 dB

TN-SFP-LX3
1000BASE-LX 1310nm (LC) SM
[30 km/18.6 mi.] Link Budget: 19.0 dB

TN-SFP-LX5
1000BASE-LX 1550nm (LC) SM
[50 km/31.1 mi.] Link Budget: 19.0 dB

TN-SFP-LX8
1000BASE-LX 1550nm (LC) SM
[80 km/49.7 mi.] Link Budget: 24.0 dB

TN-SFP-LX12
1000BASE-LX 1550nm (LC) SM
[120 km/74.6 mi.] Link Budget: 32.0 dB

TN-SFP-LX16
1000BASE-LX 1550nm (LC) SM
[160 km/99.4 mi.] Link Budget: 37.0 dB

TN-SFP-FC2XM
OC-48/STM-16/Fibre Channel
1x2x/1000BASE-SX 850nm (LC) MM
[62.5/125µm: 150 m/492 ft.]*
Link Budget: 6.0 dB
[50/125µm: 300 m/984 ft.]*
Link Budget: 6.0 dB

TN-SFP-FC2XS2
Fibre Channel 2x1x / OC-48 / STM-16/
1000BASE-LX 1310nm SM (LC)
[2 km/1.2 miles] Link Budget: 8.5 dB

TN-SFP-FC2XS15
Fibre Channel 2x1x / OC-48 / STM-16/
1000BASE-LX 1310nm SM (LC)
[15 km/9.3 mi.] Link Budget: 13.0 dB

TN-SFP-FC2XS40
Fibre Channel 2x1x / OC-48 / STM-16/
1000BASE-LX 1310nm SM (LC)
[40 km/24.9 mi.] Link Budget: 26.0 dB

*Link distance at 1000BASE-SX and Fibre Channel 1x:
220m/722 ft using 62.5/125µm MMF
550m/1804 ft using 50/125µm MMF

*Link distance at Fibre Channel 2x/OC-48/STM-16:
150m/492 ft using 62.5/125µm MMF
300m/984 ft using 50/125µm MMF

- ▶ Course Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- ▶ Hot-Pluggable SFP Footprint LC Optical Transceiver
- ▶ Digital Diagnostic Function
- ▶ Class 1 Laser International Safety Standard IEC-60825 Compliant
- ▶ Compatible with Small Form Factor Pluggable Multi-Sourcing Agreement (MSA)

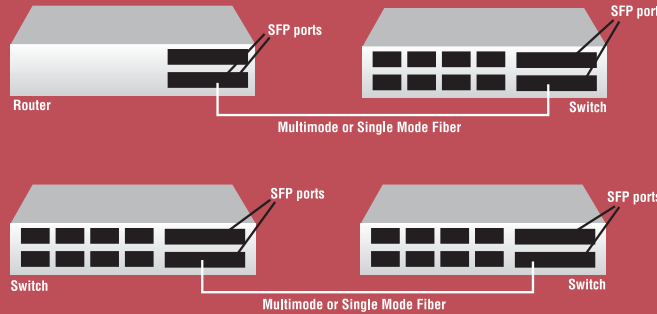
TN-SFP-xxx-Cxx



Note: Per Cisco Systems's 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. Other major SFP switch manufacturers do not indicate in their literature that such restrictions are imposed.

Transition Networks's 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.

Fiber Connections with SFPs



Applications

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

Additional Features

TN-SFP-LX8-Cxx SFP modules:

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

TN-SFP-OC3S8-Cxx SFP modules:

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

TN-SFP-OC12S-Cxx SFP modules:

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

TN-SFP-OC48S-Cxx SFP modules:

- ▶ Compliant with IEEE 802.3z Gigabit Ethernet
- ▶ Compliant with Fiber Channel 1X/2X SM-LC-L FC-PI
- ▶ Compliant with Short-Reach SONET OC-48 / SDH STM-16 (S-16.1)

Ordering Info

TN-SFP-OC3S8-Cxx
SFP 100BASE-FX/OC-3 (LC) SM
[80 km/49.7 mi.] Link Budget: 29.0 dB

TN-SFP-OC12S-Cxx
OC-12/STM-4 (LC) SM
[80 km/49.7 mi.] Link Budget: 29.0 dB

TN-SFP-LX8-Cxx
1000BASE-LX/Fibre Channel 1x (LC) SM
[80 km/49.7 mi.] Link Budget: 24.0 dB

TN-SFP-OC48S-Cxx
OC-48/STM-16/Fibre Channel 2x/1x/1000BASE-LX (LC) SM
[40 km/24.9 mi.] Link Budget: 18.0 dB

xx = center wavelength (λ_c)

27 = 1270nm	45 = 1450nm
29 = 1290nm	47 = 1470nm
31 = 1310nm	49 = 1490nm
33 = 1330nm	51 = 1510nm
35 = 1350nm	53 = 1530nm
37 = 1370nm	55 = 1550nm
39 = 1390nm	57 = 1570nm
41 = 1410nm	59 = 1590nm
43 = 1430nm	61 = 1610nm

Specifications

See pages 171–181 for complete fiber optic connector specs.

Standards	IEEE 802.3 2003; ANSI X3.297-1997 (see additional standards by part number to the left)		
Date Rate (Mb/s)			
Output Wavelength	$-5.5\text{nm} < \lambda_c < +7.5\text{nm}$		
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]		
Power	3.3V		
Power Consumption	0.66 watts		
SKU	Min	Typical	Max
TN-SFP-OC3S8-Cxx	--	155	200
TN-SFP-OC12S-Cxx	--	622	--
TN-SFP-LX8-Cxx	100	1250	--
TN-SFP-OC48S-Cxx	622	2488	2670
Environment	0°C – 70°C		
Compliance	IEC-60825; FDA 21; CFR 1040.10 and 1040.11		
Warranty	Lifetime		