



Optical Devices

Agile Network Technology for Evolving Business
Infrastructure

SFP Product Line Card

Duplex

Fast Ethernet

		Fiber Type	Compatability	Enterprise	Hardened	Distance	CWDM Wavelength
100Base-FX multimode (LC)	TN-JX-GE-100FX	MM	Juniper	X		2KM	
100Base-FX/OC-3 multimode (LC) with DMI	TN-SFP-OC3M Series	MM	MSA	X	X	2KM	
100Base-FX (LC)	TN-GLC-FE-100xX Series	MM / SM	Cisco	X	X	10KM - 120KM	
100Base-FX/OC-3 single mode (LC) with DMI	TN-SFP-OC3Sx Series	SM	MSA	X	X	20KM - 120KM	
100Base-FX/OC-3 single mode (LC) with DMI	TN-SFP-OC3S8-Cxx Series	SM	MSA	X		80KM	X
100Base-LX/SONET OC-3/SDH STM-1 single mode (LC) with DMI	TN-CWDM-100LX-1xx0 Series	SM	Cisco	X		80KM	X

OC-12/OC-3

OC-12/STM-4 SFP (LC) with DMI	TN-SFP-OC12 Series	MM / SM	MSA	X		1KM - 80KM	
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Gigabit Ethernet

1000Base-SX multimode (LC)	TN-SFP-SX Series	MM	MSA	X		220/550m	
1000Base-SX multimode (LC)	TN-GLC-SX-MM Series	MM	Cisco	X	X	220m - 2KM	
1000Base-X (LC)	TN-EX-SFP-1GE Series	MM / SM	Juniper	X		220m - 160KM	
1000Base-X (LC)	TN-J48xxC Series	MM / SM	HP	X		220m - 80KM	
1000Base-X (LC) with DMI	TN-SFP-GE-x Series	MM / SM	Cisco		X	220m - 80KM	
1000Base-SX multimode (LC) with DMI	TN-SFP-ESXx Series	MM	MSA	X		2KM	
1000Base-LX single mode (LC)	TN-GLC-LH-SM Series	SM	Cisco	X	X	10KM - 40KM	
1000Base-LX single mode (LC)	TN-SFP-LX Series	SM	MSA	X	X	10KM - 200KM	
1000Base-LX/ZX Fiber Channel single mode (LC) with DMI	TN-CWDM-SFP-1xx0-40 Series	SM	Cisco	X		40KM	X
1000Base-LX/Fiber Channel 1x single mode (LC) with DMI	TN-SFP-LX8-Cxxx Series	SM	MSA	X	X	80KM	X
1000Base-LX/ZX Fiber Channel single mode (LC) with DMI	TN-CWDM-SFP-1xx0 Series	SM	Cisco	X		80KM	X
1000Base-LX single mode (LC) with DMI	TN-GLC-ZX-SM Series	SM	Cisco	X	X	80KM - 150KM	
1000Base-LX/ZX Fiber Channel single mode (LC) with DMI	TN-CWDM-SFP-1xx0-16 Series	SM	Cisco	X		160KM	X
1000Base-LX/Fiber Channel 1x single mode (LC) with DMI	TN-SFP-LX16-Cxx Series	SM	MSA	X		160KM	X
1000Base-LX/Fiber Channel 1x single mode (LC) with DMI	TN-SFP-LX20-Cxx Series	SM	MSA	X		200KM	X

Gigabit Ethernet Fiber Channel 4x 2x 1x

Fiber Channel 1x/2x/4x/1000Base-X (LC)	TN-SFP-FC4X Series	MM / SM	MSA	X		70m - 80KM	
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Gigabit Ethernet OC-48/OC-12 Fiber Channel 2x 1x

Fiber Channel 2x/1x/OC-48/STM-16/1000Base-X (LC) with DMI	TN-SFP-FC2X Series	MM / SM	MSA	X		150m - 40KM	
OC-48/STM-16/Fiber Channel 2x/1x/1000Base-LX single mode (LC) with DMI	TN-SFP-OC48S-Cxx Series	SM	MSA	X		40KM	X

Gigabit Ethernet / 10 Gigabit Ethernet

10GBase-X/1000Base-X, SFP+ with DMI single mode (LC)	TN-10GSFP-LRxM Series	SM	MSA	X		10KM-80KM	
10GBase-ZR/1000Base-ZX, SFP+ with DMI single mode (LC)	TN-10GSFP-LR8M-Cxx Series	SM	MSA	X		80KM	X

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Fiber Type Note: MM = Multimode Fiber, SM = Single Mode Fiber

SFP Product Line Card

10 Gigabit Ethernet		Fiber Type	Compatability	Enterprise	Hardened	Distance	CWDM Wavelength
10GBase-X, SFP+ with DMI (LC)	TN-10GSFP-xRx Series	MM / SM	MSA	X	X	33m - 10KM	
X2 10GBase-X with DMI (SC)	TN-X2-10GB-xx Series	MM / SM	Cisco	X		33m - 80KM	
10GBase-X Fiber Channel, XFP with DMI (LC)	TN-XFP-xxx Series	MM / SM	MSA	X	X	33m - 100KM	
10GBase-X/ 10G Fiber Channel / OC-192 (LC) with DMI	TN-XFP-10Gxxx Series	MM / SM	Cisco	X		33m - 80KM	
10GBase-X, SFP+ with DMI (LC) for HP X130	TN-JD09xB Series	MM / SM	HP	X		220m - 10KM	
10GBase-X, SFP+ with DMI (LC) for HP X132	TN-J915xA Series	MM / SM	HP	X		220m - 40KM	
10GBase-X, SFP+ with DMI (LC)	TN-SFP-10G-xR Series	MM / SM	Cisco	X		220m - 80KM	
XFP, 10GBase-LR/10G Fiber Channel single mode (LC) with DMI	TN-XFP-LR1-Cxx Series	SM	MSA	X		10KM	X
10GBase-LR/LW/10G Fiber Channel, SFP+ with DMI single mode (LC)	TN-CWDM-10G-1xx0-40 Series	SM	Cisco	X		40KM	X
XFP, 10GBase-ER/10G Fiber Channel single mode (LC) with DMI	TN-XFP-LR4-Cxx Series	SM	MSA	X		40KM	X
XFP, 10GBase-ZR/10G Fiber Channel single mode (LC) with DMI	TN-XFP-LR7-Cxx Series	SM	MSA	X		70KM	X
10GBase-LR/LW/10G Fiber Channel, SFP+ with DMI single mode (LC)	TN-CWDM-10G-1xx0-80 Series	SM	Cisco	X		80KM	X
40 Gigabit Ethernet							
QSFP+ 40GBase-X with DMI	TN-QSFP-40G Series	MM / SM	Cisco	X		400m - 30KM	
Simplex							
Fast Ethernet							
100Base-FX multimode (SC) with DMI	TN-SFP-OC3MB Series	MM	MSA	X		2KM	
100Base-BX single fiber single mode (LC)	TN-GLC-FE-100BX Series	SM	Cisco	X	X	10KM - 120KM	
100Base-FX/OC-3 single mode (LC) with DMI	TN-SFP-OC3SB Series	SM	MSA	X		20KM - 200KM	
Fast Ethernet / Gigabit Ethernet							
100Base-BX/1000Base-BX single mode (LC) with DMI	TN-SFP-LXMB1x Series	SM	MSA	X		10KM	
OTDR SFP, 1000Base-LX/100Base-FX single fiber single mode	TN-SFP-BC55-x Series	SM	MSA		X	40KM	
Gigabit Ethernet							
1000Base-SX multimode (LC) with DMI	TN-SFP-SXB Series	SM	MSA	X		500m	
1000Base-BX single fiber single mode (LC) with DMI	TN-SFP-BXx Series	SM	MSA	X		10KM - 20KM	
1000Base-BX single fiber single mode (LC) with DMI	TN-GLC-BX Series	SM	Cisco	X		10KM - 120KM	
1000Base-LX single mode (LC) with DMI	TN-SFP-LXB Series	SM	MSA	X	X	10KM - 160KM	
10 Gigabit Ethernet							
10GBase-X / 10G Fiber Channel single fiber single mode (LC) with DMI	TN-XFP-10G-x Series	SM	Cisco	X		10KM - 40KM	
10GBase-X, SFP+ with DMI (LC)	TN-SFP-10G-x-xx Series	SM	Cisco	X		220m - 80KM	
10GBase-BX, SFP+ with DMI single mode (LC)	TN-10GSFP-LRB Series	SM	MSA	X		10KM - 60KM	

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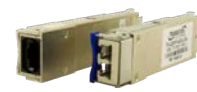
Fiber Type Note: MM = Multimode Fiber, SM = Single Mode Fiber



TN-10GSFP-LRxM Series



TN-SFP-BC55-x Series



TN-QSFP-40G Series

SFPs & CWDM Modules Product Line Card

Copper

Fast Ethernet		Compatability	Enterprise	Hardened	Distance	CWDM Wavelength
100Base-TX (RJ-45)	TN-SFP-TX	MSA	X		100m	
Gigabit Ethernet						
1000Base-T (RJ-45)	TN-GLC-T Series	Cisco	X		100m	
1000Base-T (RJ-45)	TN-SFP-GE-T	Cisco		X	100m	
10/100/1000Base-T (RJ-45)	TN-SFP-T-MG	MSA	X		100m	
Ethernet Extender SFP, 1000Base-X, RJ-45	TN-EOT-xx Series	MSA		X	3000m	

BNC

OC3/STM-1 (mini BNC)	TN-SFP-STM1E	MSA		X	140m	
Gigabit Ethernet						
Ethernet Extender SFP, 1000Base-X, RJ-45	TN-EOT-xx Series	MSA		X	3000m	

CWDM Modules

Add/Drop Mux		Channels	Enterprise	Hardened
1 Channel with E/W lines	CWDM-A2A8xxLCR Series	1	X	
Mux/Demux				
4 Channel + OSC Duplex LC	CWDM-M551LCR	4	X	
8 Channel + OSC Duplex LC	CWDM-M947LCR	8	X	
16 Channel + OSC Duplex LC	CWDM-M1631LCR Series	16	X	X



TN-EOT-xx Series



CWDM-M1631LCR



CWDM-A2A8xxLCR

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Small Form Factor Pluggables offer Agile and Flexible Solutions to Existing Networks

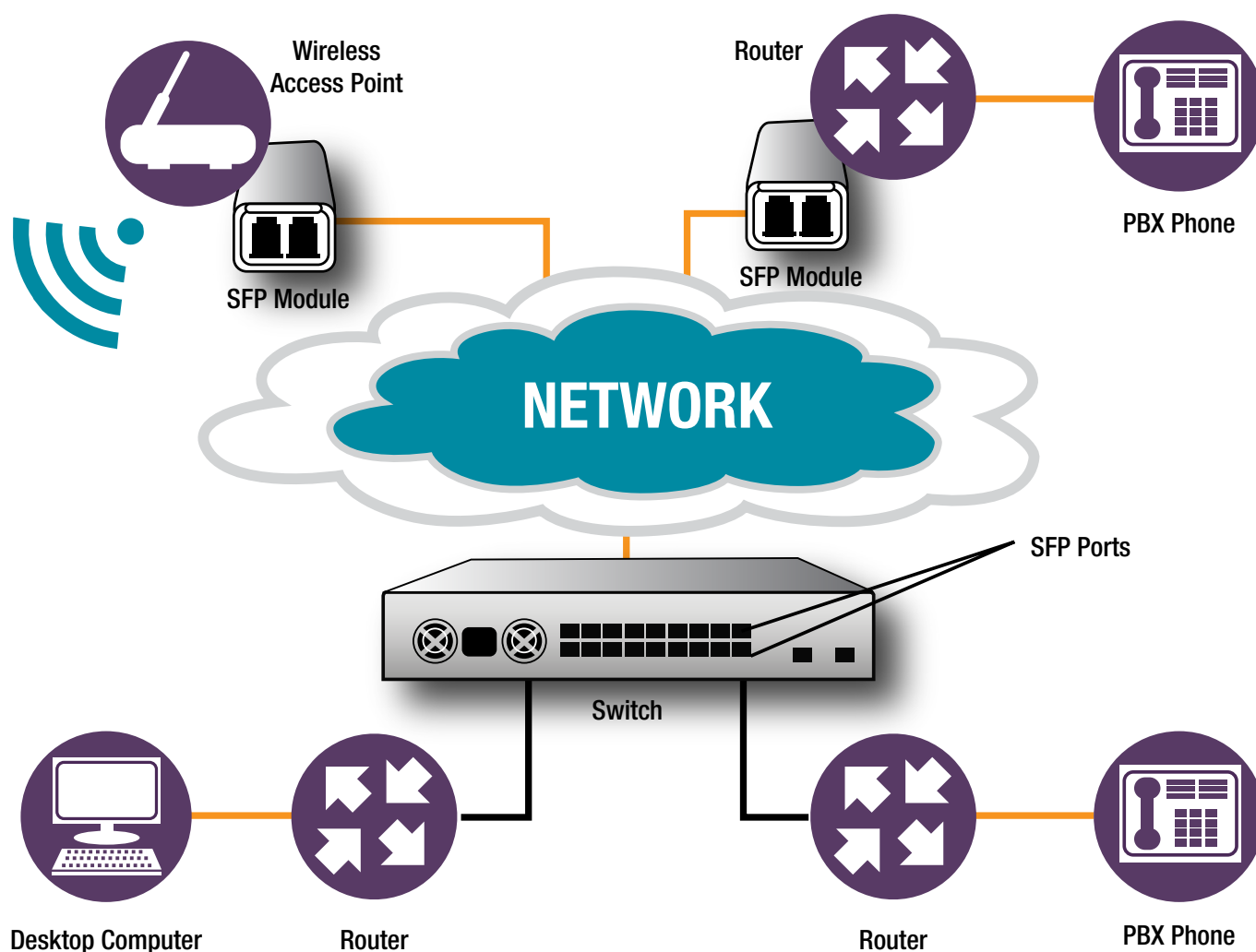


Transition Networks SFPs and XFPs are small form factor, hot-pluggable transceivers which allow for a single piece of network equipment to be connected to a multitude of interfaces, protocols, and transmission media via the SFP/XFP port. Our Small Form Pluggables offer a cost effective and flexible means to accommodate for network modifications and growth, while still using existing network devices.

All of Transition Networks' SFPs and XFPs are compliant with the Multi-Sourcing Agreement (MSA) ensuring interoperability with all other MSA compliant networking devices. Additionally, they are also Cisco, HP and Juniper Compliant and support a variety of data speeds and distance requirements.

Flexible Network Solutions for Big Data and Enterprise Applications

- Data Centers
- Business & Enterprise Operations
- Campus Environments
- Network Service Providers

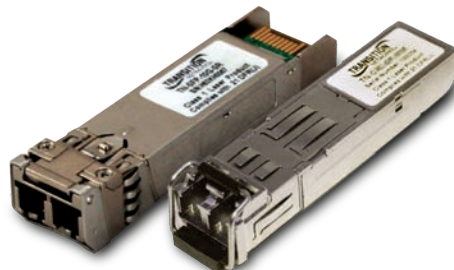


Features:

- Hot-Pluggable SFP Footprint LC Optical Transceiver
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with Small Form Factor Pluggable Multi-Sourcing Agreement (MSA)
- Compliant with IEEE 802.3z Gigabit Ethernet
- Compliant with Fiber Channel 1X SM LC-L FC-PI

Applications:

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



TN-JX-GE-100FX Series

Juniper Compatible SFP Module

100Base-FX Multimode (LC)



Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Small Form-Factor Pluggable (SFP) MSA Compliant
- Compliant with IEEE 802.3z 1000Base-SX/LX
- Compliant with IEEE 802.3 100Base-FX
- Single +3.3V Power Supply
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard EC 60825 Compliant

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.2" [56 mm] Height: 0.33" [8 mm]
Power Input	3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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

Duplex

TN-JX-GE-100FX
100Base-FX 1310nm (LC) multimode
[2 km/1.24 mi.] Link Budget: 8.0 dB

Note: Provides 100Base-FX interface when plugged into a Gigabit SFP slot in Juniper switches

TN-SFP-OC3M Series

MSA Compliant 100Base/OC3/OC12 SFP Modules

100Base-FX/OC-3 Multimode (LC) with DMI



TN-SFP-OC3M

Applications include: Fast Ethernet / OC3 Switches and Routers, xDSL Applications, and Metro Edge Switching.

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C Operating: -40°C to 85°C (TN-SFP-OC3MT)
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Ordering Information

Duplex

TN-SFP-OC3M
100Base-FX/OC-3 1310nm multimode (LC) with DMI [2 km/1.2 mi.] Link Budget: 11.0 dB

Extended Operating Temperature
-40°C to +85°C

TN-SFP-OC3MT
100Base-FX/OC-3 1300nm multimode (LC) with DMI [2 km/1.2 mi.] Link Budget: 11.0 dB

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.

TN-GLC-FE-100xX Series

Cisco Compatible 100Base SFP Modules

100Base-FX (LC)



TN-GLC-FE-100FX

Applications include: Fast Ethernet Switches & Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Hot-Pluggable SFP Footprint Duplex LC Optical Transceiver
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Compliant with IEEE 802.3 100Base-FX
- Compliant with IEEE 802.3ah 100Base-FX
- Compliant with Intermediate-Reach SONET OC-3/SDH STM-1 (S-1.1)
- Can be used on Optical Line Converter xFMFF4040-100

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	1.0 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C Operating: -40°C to 85°C (TN-GLC-xxx-RGD) Storage: -40°C to 85°C Storage: -40°C to 100°C (TN-GLC-xxx-RGD)
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Ordering Information

Duplex

TN-GLC-FE-100FX

100Base-FX 1300nm multimode (LC)
[2 km/1.2 mi.] Link Budget: 8.5 dB

TN-GLC-FE-100LX

100Base-FX 1310nm single mode (LC)
[10 km/6.2 mi.] Link Budget: 19.0 dB

*TN-GLC-FE-100FX

100Base-FX 1300nm multimode (LC)
[2 km/1.2 mi.] Link Budget: 8.5 dB

Extended Operating Temperature
-40°C to +85°C

TN-GLC-FE-100FX-RGD

100Base-FX 1300nm multimode (LC)
with DMI [2 km/1.2 mi.] Link Budget: 8.5 dB

TN-GLC-FE-100LX-RGD

100Base-FX 1310nm single mode (LC)
with DMI [10 km/6.2 mi.] Link Budget: 19.0 dB

TN-GLC-FE-100EX-RGD

100Base-FX 1310nm single mode (LC)
with DMI [40 km/24.9 mi.]
Link Budget: 25.0 dB

*Provides 100Base-FX interface when plugged into a Gigabit SFP slot on Cisco Catalyst 2970, 3560 & 3750 series switches.

Note: The Transition Networks TN-GLC-FE-100xX series small form factor pluggable (SFP) transceiver modules are designed to install in any SFP port allowing for 100Base-FX interfaces to the network through the SFP connector. The TN-GLC-FE-100xX transceivers are Cisco Compliant* and are designed for bi-directional serial-optical data communication such as Fast Ethernet or OC3 at speeds up to 155 Mbps.

*Transition Networks' SFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP modules to be used in all other MSA compliant SFP platforms. In addition, Transition Networks SFP modules are also Compliant with all Cisco SFP-based routers and switches, as well as Cisco's IOS software. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

TN-SFP-OC3Sx Series

MSA Compliant 100Base/OC3 SFP Modules

100Base-FX/OC-3 Single Mode (LC) with DMI



TN-SFP-OC3S

Applications include: Fast Ethernet / OC3 Switches and Routers, xDSL Applications, and Metro Edge Switching.

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: -10°C to 85°C Operating: -40°C to 85°C (TN-SFP-OC3ST)
Compliance	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

Duplex

- TN-SFP-OC3S**
100Base-FX/OC-3 1310nm single mode (LC)
with DMI [20 km/12.4 mi.] Link Budget: 17.0 dB
- TN-SFP-OC3S3**
100Base-FX/OC-3 1310nm single mode (LC)
with DMI [30 km/18.6 mi.] Link Budget: 20.0 dB
- TN-SFP-OC3S8**
100Base-FX/OC-3 1550nm single mode (LC)
with DMI [80 km/49.7 mi.] Link Budget: 29.0 dB
- TN-SFP-OC3S10**
100Base-FX/OC-3 1550nm single mode (LC)
with DMI [100 km/62.1 mi.] Link Budget: 31.0 dB
- TN-SFP-OC3S12**
100Base-FX/OC-3 1550nm single mode (LC)
with DMI [120 km/74.6 mi.] Link Budget: 34.0 dB
- TN-SFP-OC3S20**
100Base-FX/OC-3 1550nm single mode (LC)
with DMI [200km/124.3 mi.] Link Budget: 46.0 dB
- Extended Operating Temperature**
-40°C to +85°C
- TN-SFP-OC3ST**
100Base-FX/OC-3 1310nm single mode (LC)
with DMI [20 km/12.4 mi.] Link Budget: 17.0 dB

TN-SFP-OC3S8-Cxx Series

MSA Compatible CWDM SFP Modules

100Base-FX/OC-3 Single Mode (LC) With DMI



Applications include: 10G Ethernet Switches and Routers, Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Footprint Duplex LC Optical Transceiver
- Digital Diagnostic Function (DMI)
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Compliant with 100Base-FX
- Compliant with Intermediate-Reach SONET OC-3/SDH STM-1 (S-1.1)

Specifications

Standards	IEEE 802.3 2003 ANSI X3.297-1997 (see additional standards by part number to the left)
Output Wavelength	$-5.5\text{nm} < \lambda_c < +7.5\text{nm}$
Typical Data Rate	155Mbps
Maximum Data Rate	200Mbps
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Ordering Information

Duplex

TN-SFP-OC3S8-Cxx

SFP 100Base-FX/OC-3 single mode (LC) with DMI [80 km/49.7 mi.] Link Budget: 29.0 dB

xx = center wavelength (nm)

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

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.

TN-CWDM-100LX-1xx0 Series

Cisco Compatible CWDM SFP Modules

100Base-LX/SONET OC-3/SDH STM-1 Single Mode (LC) With DMI



Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Optical Transceiver With Duplex LC Connector
- Digital Diagnostic Function (DMI)
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Single +3.3V Power Supply
- RoHS Compliant
- Compliant with IEEE 802.3z 1000Base-LX/ZX
- Compliant with Fiber Channel 1x SM-LC-L FC-PI
- Compliant with IEEE 802.3 100Base-FX

Specifications

Standards	IEEE 802.3 IEEE 802.3z
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 Input	3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-CWDM-100LX-1xx0 small form factor pluggables (SFPs) are Cisco Compliant* and are designed for bi-directional serial-optical data communications such as Gigabit Ethernet, or Fiber Channel 1x. Each SFP operates at a nominal CWDM wavelength. There are 18 wavelengths available in 20nm steps from 1270nm to 1610nm.

*Transition Networks' SFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP modules to be used in all other MSA compliant SFP platforms. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

Ordering Information

Duplex

TN-CWDM-100LX-1xx0

100Base-LX/SONET OC-3/SDH STM-1
single mode (LC) with DMI
[80 km/49.7 mi.] Link Budget: 29.0 dB

xx = center wavelength (nm)

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

TN-SFP-OC12 Series

MSA Compliant 100Base/OC3/OC12 SFP Modules

OC-12/STM-4 SFP (LC) With DMI



TN-SFP-OC12M

Applications include: Fast Ethernet / OC3 Switches and Routers, xDSL Applications, and Metro Edge Switching.

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	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

Duplex

- TN-SFP-OC12M**
OC-12/STM-4 SFP 1300nm multimode (LC) with DMI [1 km/0.6 mi.] Link Budget: 7.0 dB
- TN-SFP-OC12S**
OC-12/STM-4 SFP 1310nm single mode (LC) with DMI [20 km/12.4 mi.] Link Budget: 14.0 dB
- TN-SFP-OC12S4**
OC-12/STM-4 SFP 1310nm single mode (LC) with DMI [40 km/24.9 mi.] Link Budget: 28.0 dB
- TN-SFP-OC12S8**
OC-12/STM-4 SFP 1310nm single mode (LC) with DMI [80 km/49.7 mi.] Link Budget: 29.0 dB

TN-SFP-SX Series

MSA Compliant 1000Base Fiber Channel SFP Modules

1000Base-SX Multimode (LC)



Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: -10°C to 85°C
Compliance	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

Duplex

TN-SFP-SX
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

TN-SFP-SXD
1000Base-SX 850nm multimode (LC) with DMI
[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

TN-GLC-SX-MM Series

Cisco Compatible Gigabit SFP Modules

1000Base-SX Multimode (LC)



Features

- Extended operating temperature
-40°C to +85°C (TN-GLC-xxx-RGD
Module Only)

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C Operating: -40°C to 85°C (TN-GLC-SX-MM-xx-RGD) Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-GLC-SX-MM series small form factor pluggable (SFP) transceiver modules are designed to install in any SFP port allowing for 1000Base-SX interfaces to the network through the SFP connector. The TN-GLC-SX-MM transceivers are Cisco Compliant* and are designed for bi-directional serial-optical data communication such as Gigabit Ethernet or fiber channel at speeds up to 1.25 Gbps.

*Transition Networks' SFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP modules to be used in all other MSA compliant SFP platforms. In addition, Transition Networks SFP modules are also Compliant with all Cisco SFP-based routers and switches, as well as Cisco's IOS software. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

Ordering Information

Duplex

TN-GLC-SX-MM

1000Base-SX 850nm multimode (LC)
[62.5/125 μ m: 220 m/722 ft.]
[50/125 μ m: 550 m/1804 ft.]
Link Budget: 8.5 dB

TN-GLC-SX-MM-PK

Pack of (20) TN-GLC-SX-MM

TN-GLC-SX-MMD

1000Base-SX 850nm multimode (LC) with DMI
[6.25/125 μ m: 220m/722ft.]
[50/125 μ m: 550m/1804 ft.]
Link Budget: 8.5 dB

TN-GLC-SX-MM-2K

1000Base-SX 1300nm Ext. multimode (LC)
[2 km/1.2 mi.] Link Budget: 10.0 dB

Extended Operating Temperature
-40°C to +85°C

TN-GLC-SX-MM-RGD

1000Base-SX 850nm multimode (LC) with DMI
[62.5/125 μ m: 220 m/722 ft.]
Link Budget: 8.5 dB
[50/125 μ m: 550 m/1804 ft.]
Link Budget: 8.5 dB

TN-GLC-SX-MM-2K-RGD

1000Base-SX 1300nm Ext. multimode (LC)
with DMI [2 km/1.2 mi.]
Link Budget: 10.0 dB

TN-EX-SFP-1GE Series

Juniper Compatible SFP Module

1000Base-X (LC)



TN-EX-SFP-1GE-LX

Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Small Form-Factor Pluggable (SFP) MSA Compliant
- Compliant with IEEE 802.3z 1000Base-SX/LX
- Compliant with IEEE 802.3 100Base-FX
- Single +3.3V Power Supply
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard EC 60825 Compliant

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.2" [56 mm] Height: 0.33" [8 mm]
Power Input	3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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

Duplex

TN-EX-SFP-1GE-SX

1000Base-SX 850nm (LC) multimode
[62.5/125 um: 220 m/722 ft.]
[50/125 um: 550 m/1804 ft.]
Link Budget: 9.0 dB

TN-EX-SFP-1GE-LX

1000Base-LX 1310nm (LC) single mode
[10 km/6.2 mi.] Link Budget: 9.0 dB

TN-EX-SFP-1GE-LX40K

1000Base-LX 1310nm (LC) single mode with
DMI [40 km/24.9 mi.] Link Budget: 20.0 dB

TN-EX-SFP-1GE-LH

1000Base-LX 1550nm(LC) single mode with
DMI [80 km/49.7 mi.] Link Budget: 27.0 dB

TN-EX-SFP-1GE-LH12

1000Base-LX 1550nm (LC) single mode with
DMI [120 km/74.6 mi.] Link Budget: 32.0 dB

TN-EX-SFP-1GE-LH16

1000Base-LX 1550nm (LC) single mode with
DMI [160 km/99.4 mi.] Link Budget: 37 dB

TN-J48xxC Series

HP Compatible SFP Modules

1000Base-X (LC)



Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Hot-Pluggable SFP Optical Transceiver with Duplex LC Connector
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Compliant with IEEE 802.3z 1000Base-SX (TN-J4858C Module Only)
- Compliant with IEEE 802.3 1000Base-LX (TN-J4859C Module Only)
- Compliant with IEEE 802.3z 1000Base-ZX (TN-J4860C Module Only)

Specifications

Standards	IEEE 802.3z
Dimensions	Width: 0.52" [13 mm] Depth: 2.2" [56 mm] Height: 0.33" [8 mm]
Power Input	3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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

Duplex

- TN-J4858C**
1000Base-SX 850nm (LC) multimode
[62.5/125 μ m fiber: 220 m/722 ft.]
[50/125 μ m fiber: 550 m/1804 ft.]
Link Budget: 9.0 dB
- TN-J4859C**
1000Base-LX 1310nm (LC) single mode
[20 km/12.4 mi.] Link Budget: 16.0 dB
- TN-J4860C**
1000Base-LX/ZX 1550nm (LC) single mode
[80 km/49.7 mi.] Link Budget: 24.0 dB

TN-SFP-GE-x Series

Cisco Compatible Gigabit SFP Modules

1000Base-X (LC) With DMI



Features

- Extended operating temperature
-40°C to +85°C

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Ordering Information

Duplex

TN-SFP-GE-S
1000Base-SX 850nm multimode (LC) with DMI
[62.5/125 μ m: 220 m/722 ft.]
Link Budget: 8.5 dB
[50/125 μ m: 550 m/1804 ft.]
Link Budget: 8.5 dB

TN-SFP-GE-L
1000Base-LX 1310nm single mode (LC)
with DMI [10 km/6.2 mi.] Link Budget: 10.5 dB

TN-SFP-GE-Z
1000Base-LX 1550nm single mode (LC)
with DMI [80 km/49.7 mi.]
Link Budget: 24.0 dB

Note: The Transition Networks TN-SFP-GE-x series small form factor pluggable (SFP) transceiver modules are designed to install in any SFP port allowing for 1000Base-SX or 1000Base-LX interfaces to the network through the SFP connector. The TN-SFP-GE-x transceivers are Cisco Compliant* and are designed for bi-directional serial-optical data communication such as Gigabit Ethernet or fiber channel at speeds up to 1.25 Gbps.

*Transition Networks' SFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP modules to be used in all other MSA compliant SFP platforms. In addition, Transition Networks SFP modules are also Compliant with all Cisco SFP-based routers and switches, as well as Cisco's IOS software. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

TN-SFP-ESXx Series

MSA Compliant 1000Base Fiber Channel SFP Modules

1000Base-SX Multimode (LC) With DMI



Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: -10°C to 85°C
Compliance	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

Duplex

- TN-SFP-ESX5**
1000Base-SX 1300nm Ext. multimode (LC)
[50/125 μm fiber only: up to 2 km/1.2 mi.]
with DMI Link Budget: 8.0 dB
- TN-SFP-ESX6**
1000Base-SX 1300nm Ext. multimode (LC)
[62.5/125 μm fiber only: up to 2 km/1.2 mi.]
with DMI Link Budget: 8.0 dB

TN-GLC-LH-SM Series

Cisco Compatible Gigabit SFP Modules

1000Base-LX Single Mode (LC)



TN-GLC-LH-SM

Features

- Extended operating temperature -40°C to +85°C (TN-GLC-xxx-RGD Module Only)

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C Operating: -40°C to 85°C (TN-GLC-xxx-RGD) Storage: -40°C to 85°C Storage: -40°C to 100°C (TN-GLC-xxx-RGD)
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-GLC-LH-SM series small form factor pluggable (SFP) transceiver modules are designed to install in any SFP port allowing for 1000Base-LX interfaces to the network through the SFP connector. The TN-GLC-LH-SM transceivers are Cisco Compliant* and are designed for bi-directional serial-optical data communication such as Gigabit Ethernet or fiber channel at speeds up to 1.25 Gbps.

*Transition Networks' SFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP modules to be used in all other MSA compliant SFP platforms. In addition, Transition Networks SFP modules are also Compliant with all Cisco SFP-based routers and switches, as well as Cisco's IOS software. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

Ordering Information

Duplex

- TN-GLC-LH-SM**
1000Base-LX 1310nm single mode (LC)
[10 km/6.2 mi.] Link Budget: 10.5 dB
- TN-GLC-LH-SM-PK**
Pack of (20) TN-GLC-LH-SM
- TN-GLC-LH-SMD**
1000Base-LX 1310nm single mode (LC) with DMI [10km/6.2 mi.] Link Budget: 10.5 dB
- TN-GLC-LH-SMD-PK**
Pack of (20) TN-GLC-LH-SMD
- TN-GLC-LHX-SM**
1000Base-LX 1310nm single mode (LC)
[40 km/24.9 mi.] Link Budget: 22.0 dB
- Extended Operating Temperature**
-40°C to +85°C
- TN-GLC-LX-SM-RGD**
1000Base-LX 1310nm single mode (LC) with DMI [10 km/6.2 mi.] Link Budget: 10.5 dB
- TN-GLC-LHX-SM-RGD**
1000Base-LX 1310nm single mode (LC) with DMI [40km/24/9 mi.] Link Budget: 22.0 dB

TN-SFP-LX Series

MSA Compliant 1000Base Fiber Channel SFP Modules

1000Base-LX Single Mode (LC)



TN-SFP-LX1

Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C Operating: -10°C to 85°C (TN-SFP-LX1) Operating: -40°C to 85°C (TN-SFP-LX1T)
Compliance	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

Duplex

TN-SFP-LX1

1000Base-LX 1310nm single mode (LC)
with DMI [10 km/6.2 mi.] Link Budget: 11.5 dB

TN-SFP-ELX1

1000Base-LX 1310nm single mode (LC)
[10 km/6.2 mi.] Link Budget: 11.5 dB

TN-SFP-ELX1-PK

Pack of (20) TN-SFP-ELX1

TN-SFP-LX3

1000Base-LX 1310nm single mode (LC) with
DMI [30 km/18.6 mi.] Link Budget: 19.0 dB

TN-SFP-LX5

1000Base-LX 1550nm single mode (LC) with
DMI [50 km/31.1 mi.] Link Budget: 19.0 dB

TN-SFP-LX8

1000Base-LX 1550nm single mode (LC)
with DMI [80 km/49.7 mi.] Link Budget: 24.0 dB

TN-SFP-LX12

1000Base-LX 1550nm single mode (LC)
with DMI [120 km/74.6 mi.] Link Budget: 32.0 dB

TN-SFP-LX16

1000Base-LX 1550nm single mode (LC)
with DMI [160 km/99.4 mi.] Link Budget: 37.0 dB

TN-SFP-LX20

1000Base-LX 1550 nm (LC) single mode
with DMI [200 km/124.3 mi.] Link Budget: 41.0 dB

Extended Operating Temperature
-40°C to +85°C

TN-SFP-LX1T

1000Base-LX 1310nm single mode (LC) with
DMI [10 km/6.2 mi.] Link Budget: 11.5 dB

TN-SFP-LX3T

1000Base-LX 1310nm single mode (LC) with
DMI [30 km/18.6 mi.] Link Budget: 19.0 dB

TN-CWDM-SFP-1xx0-40 Series

Cisco Compatible CWDM SFP Modules

1000Base-LX/ZX Fiber Channel Single Mode (LC) With DMI



TN-CWDM-SFP-1430-40

Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Optical Transceiver With Duplex LC Connector
- Digital Diagnostic Function (DMI)
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Single +3.3V Power Supply
- RoHS Compliant
- Compliant with IEEE 802.3z 1000Base-LX/ZX
- Compliant with Fiber Channel 1x SM-LC-L FC-PI
- Compliant with IEEE 802.3z 1000Base-LX/ZX
- Compliant with Fiber Channel
- 1x SM-LC-L FC-PI

Specifications

Standards	IEEE 802.3 IEEE 802.3z
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 Input	3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-CWDM-SFP-1xx0-40 small form factor pluggables (SFPs) are Cisco Compliant* and are designed for bi-directional serial-optical data communications such as Gigabit Ethernet, or Fiber Channel 1x. Each SFP operates at a nominal CWDM wavelength. There are 18 wavelengths available in 20nm steps from 1270nm to 1610nm.

*Transition Networks' SFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP modules to be used in all other MSA compliant SFP platforms. In addition, TN-CWDM-SFP-1xx0-40 modules are also Compliant with all Cisco SFP-based equipment, as well as Cisco's IOS software. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

Ordering Information

Duplex

TN-CWDM-SFP-1xx0-40

1000Base-LX/ZX Fiber Channel
single mode (LC) with DMI
[40 km/24.9 mi.] Link Budget: 19.0 dB

xx = center wavelength (nm)

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

TN-SFP-LX8-Cxxx Series

MSA Compatible CWDM SFP Modules

1000Base-LX/Fiber Channel 1x Single Mode (LC) With DMI



Applications include: 10G Ethernet Switches and Routers, Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Footprint Duplex LC Optical Transceiver
- Digital Diagnostic Function (DDMI)
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- 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)

Specifications

Standards	IEEE 802.3 2003 ANSI X3.297-1997 (see additional standards by part number to the left)
Output Wavelength	$-5.5\text{nm} < \lambda_c < +7.5\text{nm}$
Typical Data Rate	1250Mbps
Minimum Data Rate	100Mbps
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C Operating: -40°C to +85°C (TN-SFP-LX8-CxxT)
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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

Duplex

TN-SFP-LX8-Cxx

1000Base-LX/Fiber Channel 1x single mode (LC) with DMI
[80 km/49.7 mi.] Link Budget: 24.0 dB

Extended Operating Temperature
(-40°C to +85°C)

**TN-SFP-LX8-CxxT

1000Base-LX/Fiber Channel 1x single mode (LC) with DMI
[80 km/49.7 mi.] Link Budget: 24.0 dB

**Note: TN-SFP-LX8-CxxT:
xx = 47, 49, 51, 53, 55, 57, 59, 61

xx = center wavelength (nm)

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

TN-CWDM-SFP-1xx0 Series

Cisco Compatible CWDM SFP Modules

1000Base-LX/ZX Fiber Channel Single Mode (LC) With DMI



Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Optical Transceiver With Duplex LC Connector
- Digital Diagnostic Function (DMI)
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Single +3.3V Power Supply
- RoHS Compliant
- Compliant with IEEE 802.3z 1000Base-LX/ZX
- Compliant with Fiber Channel 1x SM-LC-L FC-PI
- Compliant with IEEE 802.3z 1000Base-LX/ZX
- Compliant with Fiber Channel
- 1x SM-LC-L FC-PI

Specifications

Standards	IEEE 802.3 IEEE 802.3z
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 Input	3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-CWDM-SFP-1xx0 small form factor pluggables (SFPs) are Cisco Compliant* and are designed for bi-directional serial-optical data communications such as Gigabit Ethernet, or Fiber Channel 1x. Each SFP operates at a nominal CWDM wavelength. There are 18 wavelengths available in 20nm steps from 1270nm to 1610nm.

*Transition Networks' SFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP modules to be used in all other MSA compliant SFP platforms. In addition, TN-CWDM-SFP-1xx0 modules are also Compliant with all Cisco SFP-based equipment, as well as Cisco's IOS software. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

Ordering Information

Duplex

TN-CWDM-SFP-1xx0

1000Base-LX/ZX Fiber Channel
single mode (LC) with DMI
[80 km/49.7 mi.] Link Budget: 24.0 dB

xx = center wavelength (!)

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

TN-GLC-ZX-SM Series

Cisco Compatible Gigabit SFP Modules

1000Base-LX Single Mode (LC) With DMI



Features

- Extended operating temperature
-40°C to +85°C (TN-GLC-xxx-RGD
Module Only)

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C Operating: -40°C to 85°C (TN-GLC-ZX-SM-RGD) Storage: -40°C to 85°C Storage: -40°C to 100°C (TN-GLC-ZX-SM-RGD)
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-GLC-ZX-SM series small form factor pluggable (SFP) transceiver modules are designed to install in any SFP port allowing for 1000Base-LX interfaces to the network through the SFP connector. The TN-GLC-ZX-SM transceivers are Cisco Compliant* and are designed for bi-directional serial-optical data communication such as Gigabit Ethernet or fiber channel at speeds up to 1.25 Gbps.

*Transition Networks' SFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP modules to be used in all other MSA compliant SFP platforms. In addition, Transition Networks SFP modules are also Compliant with all Cisco SFP-based routers and switches, as well as Cisco's IOS software. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

Ordering Information

Duplex

- TN-GLC-ZX-SM**
1000Base-LX 1550nm single mode (LC) with
DMI [80 km/49.7 mi.] Link Budget: 24.0 dB
- TN-GLC-ZX-SM-12**
1000Base-LX 1550nm single mode (LC) with
DMI [120 km/74.6 mi.] Link Budget: 31.0 dB
- TN-GLC-ZX-SM-15**
1000Base-LX 1550nm single mode (LC) with
DMI [150 km/93.2 mi.] Link Budget: 37.0 dB
- Extended Operating Temperature
-40°C to +85°C
- TN-GLC-ZX-SM-RGD**
1000Base-LX 1550nm single mode (LC) with
DMI [80 km/49.7 mi.] Link Budget: 24.0 dB

TN-CWDM-SFP-1xx0-16 Series

Cisco Compatible CWDM SFP Modules

1000Base-LX/ZX Fiber Channel Single Mode (LC) With DMI



Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Optical Transceiver With Duplex LC Connector
- Digital Diagnostic Function (DMI)
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Single +3.3V Power Supply
- RoHS Compliant
- Compliant with IEEE 802.3z 1000Base-LX/ZX
- Compliant with Fiber Channel 1x SM-LC-L FC-PI
- Compliant with IEEE 802.3z 1000Base-LX/ZX
- Compliant with Fiber Channel
- 1x SM-LC-L FC-PI

Specifications

Standards	IEEE 802.3 IEEE 802.3z
Output Wavelength	-5.5nm < λ_c < +7.5nm
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Input	3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-CWDM-SFP-1xx0-16 small form factor pluggables (SFPs) are Cisco Compliant* and are designed for bi-directional serial-optical data communications such as Gigabit Ethernet, or Fiber Channel 1x. Each SFP operates at a nominal CWDM wavelength. There are 18 wavelengths available in 20nm steps from 1270nm to 1610nm.

*Transition Networks' SFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP modules to be used in all other MSA compliant SFP platforms. In addition, TN-CWDM-SFP-1xx0-16 modules are also Compliant with all Cisco SFP-based equipment, as well as Cisco's IOS software. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

Ordering Information

Duplex

TN-CWDM-SFP-1xx0-16

1000Base-LX/ZX Fiber Channel
single mode (LC) with DMI
[160 km/99.4 mi.] Link Budget: 36.0 dB

xx = center wavelength (nm)

47 = 1470nm
49 = 1490nm
51 = 1510nm
53 = 1530nm
55 = 1550nm
57 = 1570nm
59 = 1590nm
61 = 1610nm

TN-SFP-LX16-Cxx Series

MSA Compatible CWDM SFP Modules

1000Base-LX/Fiber Channel 1x Single Mode (LC) With DMI



Applications include: 10G Ethernet Switches and Routers, Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Footprint Duplex LC Optical Transceiver
- Digital Diagnostic Function (DDM)
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- 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)

Specifications

Standards	IEEE 802.3 2003 ANSI X3.297-1997 (see additional standards by part number to the left)
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 Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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

Duplex

TN-SFP-LX16-Cxx

1000Base-LX/Fiber Channel 1x
single mode (LC) with DMI
[160 km/99.4 mi.] Link Budget: 37.0 dB

xx = center wavelength (nm)

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

TN-SFP-LX20-Cxx Series

MSA Compatible CWDM SFP Modules

1000Base-LX/Fiber Channel 1x Single Mode (LC) With DMI



Applications include: 10G Ethernet Switches and Routers, Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Footprint Duplex LC Optical Transceiver
- Digital Diagnostic Function (DDM)
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)

Specifications

Standards	IEEE 802.3 2003 ANSI X3.297-1997 (see additional standards by part number to the left)
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 Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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

Duplex

TN-SFP-LX20-Cxx

1000Base-LX/Fiber Channel 1x
single mode (LC) with DMI
[200 km/124.2 mi.] Link Budget: 37.0 dB

xx = center wavelength (nm)

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

TN-SFP-FC4X Series

MSA Compliant 1000Base Fiber Channel SFP Modules

Fiber Channel 1x/2x/4x/1000Base-X (LC)



Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	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

Duplex

TN-SFP-FC4XM

Fiber Channel 1x/2x/4x/1000Base-SX
850nm (LC) multimode with DMI
[62.5/125 µm: 70m/246 ft.]
[50/125 µm: 150m/492 ft.]
Link Budget: 6.0 dB

TN-SFP-FC4XS5

Fiber Channel 1x/2x/4x/1000Base-LX
1310 nm (LC) single mode with DMI
[5 km/3.1 mi.] Link Budget: 10.0 dB

TN-SFP-FC4XS10

Fiber Channel 1x/2x/4x/1000Base-LX
1310 nm (LC) single mode [10 km/6.2 mi.]
Link Budget: 10.0 dB

TN-SFP-FC4XS20

Fiber Channel 1x/2x/4x/1000Base-LX
1310 nm (LC) single mode with DMI
[20 km/12.4 mi.] Link Budget: 13.0 dB

TN-SFP-FC4XS40

Fiber Channel 1x/2x/4x/1000Base-LX
1550 nm (LC) single mode with DMI
[40 km/24.9 mi.] Link Budget: 18.0 dB

TN-SFP-FC4XS80

Fiber Channel 1x/2x/4x/1000Base-LX
1550 nm (LC) single mode with DMI
[80 km/49.7 mi.] Link Budget: 26.0dB

TN-SFP-FC2X Series

MSA Compliant 1000Base Fiber Channel SFP Modules

Fiber Channel 2x/1x/OC-48/STM-16/1000Base-X (LC) With DMI



Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C Operating: -10°C to 85°C (TN-SFP-FC2XM, TN-SFP-FC2XS2)
Compliance	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

Duplex

TN-SFP-FC2XM

OC-48/STM-16/Fiber Channel 1x/2x /1000Base-SX 850nm (LC) multimode with DMI [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

TN-SFP-FC2XS2

Fiber Channel 2x/1x/OC-48/STM-16/1000Base-LX 1310nm single mode (LC) with DMI [2 km/1.2 mi.] Link Budget: 8.5 dB

TN-SFP-FC2XS15

Fiber Channel 2x/1x/OC-48/STM-16/1000Base-LX 1310nm single mode (LC) with DMI [15 km/9.3 mi.] Link Budget: 13.0 dB

TN-SFP-FC2XS40

Fiber Channel 2x/1x/OC-48/STM-16/1000Base-LX 1310nm single mode (LC) with DMI [40 km/24.9 mi.] Link Budget: 26.0 dB

TN-SFP-OC48S-Cxx Series

MSA Compatible CWDM SFP Modules

OC-48/STM-16/Fiber Channel 2x/1x/1000Base-LX Single Mode (LC) With DMI



Applications include: 10G Ethernet Switches and Routers, Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Footprint Duplex LC Optical Transceiver
- Digital Diagnostic Function (DMI)
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Compliant with IEEE 802.3z Gigabit Ethernet
- Compliant with Fiber Channel 1X SM-LC-L FC-PI
- Compliant with Short-Reach SONET OC-48/SDH STM-16 (S-16.1)

Specifications

Standards	IEEE 802.3 2003 ANSI X3.297-1997 (see additional standards by part number to the left)
Output Wavelength	$-5.5\text{nm} < \lambda_c < +7.5\text{nm}$
Typical Data Rate	2488Mbps
Minimum Data Rate	622Mbps
Maximum Data Rate	2670Mbps
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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

Duplex

TN-SFP-OC48S-Cxx

OC-48/STM-16/Fiber Channel
2x/1x/1000Base-LX single mode (LC) with DMI
[40 km/24.9 mi.] Link Budget: 18.0 dB

xx = center wavelength (nm)

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

TN-10GSFP-LRxM Series

MSA Compliant Multi-rate 1G/10GBase SFP+ Modules

10GBase-X/1000Base-X, SFP+ With DMI Single Mode (LC)



TN-10GSFP-LR4MTN-10GSFP-LR8M

Features

- SFP+ Optical Transceiver
- 10G Small Form-Factor Pluggable (SFP+) MSA Compliant
- SFF-8472 Digital Diagnostic Function (DDI)
- SFF-8431 and SFF-8432 Compliant
- Maximum link length of 80km
- Single +3.3 V Power Supply
- Up to 10.5 Gbps bidirectional data links
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard IEC 60825 Compliant
- Compliant with IEEE 802.3ae 10GBase-LR
- Compliant with IEEE 802.3z 1000Base-LX/ZX

Specifications

Standards	IEEE 802.3ae IEEE 802.3z
Data Rates	10.3 Gbps / 1.25 Gbps
Dimensions	Width: 0.52" [13 mm] Depth: 2.2" [56 mm] Height: 0.33" [8 mm]
Power Supply	+3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FAD 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Ordering Information

Duplex

- TN-10GSFP-LR1M**
10Gbase-LR/1000Base-LX, SFP+ with DMI
1310nm single mode (LC) [10km/6.2 mi.]
Link Budget: 9.0 dB
- TN-10GSFP-LR4M**
10Gbase-LR/1000Base-LX, SFP+ with DMI
1550nm single mode (LC) [40km/24.9 mi.]
Link Budget: 15.0 dB
- TN-10GSFP-LR8M**
10Gbase-ZR/1000Base-ZX, SFP+ with DMI
1550nm single mode (LC) [80km/49.7 mi.]
Link Budget: 24.0 dB

TN-10GSFP-LR8M-Cxx Series

CWDM MSA Compliant Multi-rate 1G/10GBase SFP+ Modules

10GBase-ZR/1000Base-ZX, SFP+ With DMI Single Mode (LC)



Features

- SFP+ Optical Transceiver
- 10G Small Form-Factor Pluggable (SFP+) MSA Compliant
- SFF-8472 Digital Diagnostic Function (DDI)
- SFF-8431 and SFF-8432 Compliant
- Maximum link length of 80km
- Single +3.3 V Power Supply
- Up to 10.5 Gbps bidirectional data links
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard IEC 60825 Compliant
- Compliant with IEEE 802.3ae 10GBase-LR
- Compliant with IEEE 802.3z 1000Base-LX/ZX

Specifications

Standards	IEEE 802.3ae IEEE 802.3z
Data Rates	10.3 Gbps / 1.25 Gbps
Dimensions	Width: 0.52" [13 mm] Depth: 2.2" [56 mm] Height: 0.33" [8 mm]
Power Supply	+3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FAD 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Ordering Information

Duplex

*TN-10GSFP-LR8M-Cxx

10Gbase-ZR/1000Base-ZX, SFP+ with DMI
single mode (LC) [80km/49.7 mi.]
Link Budget: 24.0 dB

* Note: TN-10GSFP-LR8M-Cxx:

xx = 47, 49, 51, 53, 55, 57, 59, 61

xx = center wavelength (lc)

47 = 1470nm

49 = 1490nm

51 = 1510nm

53 = 1530nm

55 = 1550nm

57 = 1570nm

59 = 1590nm

61 = 1610nm

TN-10GSFP-xRx Series

MSA Compliant 10GBase SFP+ Modules

10GBase-X, SFP+ With DMI (LC)



TN-10GSFP-LR1

Features

- SFP+ Optical Transceiver
- 10G Small Form-Factor Pluggable (SFP+) MSA Compliant
- SFF-8472 Digital Diagnostic Function (DDI)
- Single +3.3 V Power Supply
- Up to 10.5 Gbps bidirectional data links
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard IEC 60825 Compliant
- Compliant with IEEE 802.3ae 10GBase-SR/SW (TN-10GSFP-SR Module Only)
- Link Length up to 300 m with OM3 multimode fiber; 82m with OM2 multimode fiber; 33m with OM1 multimode fiber (TN-10GSFP-SR Module Only)
- Compliant with IEEE 802.3ae 10GBase-LR/LW
- Maximum Link Length of 70KM

Specifications

Standards	IEEE 802.3ae
Data Rates	10.3 Gbps
Dimensions	Width: 0.52" [13 mm] Depth: 2.2" [56 mm] Height: 0.33" [8 mm]
Power Supply	+3.3V
Environment	Operating: 0°C to 70°C Operating: -40°C to +85°C (TN-10GSFP-xxT) Storage: -40°C to 85°C
Compliance	IEC-60825, FAD 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Ordering Information

Duplex

*TN-10GSFP-SR

10GBase-SR/SW, SFP+ with DMI 850nm multimode (LC) [300/82/33 m; 985/269/108 ft.] Link Budget: 2.6 dB

TN-10GSFP-LR1

10GBase-LR/LW, SFP+ with DMI 1310nm single mode (LC) [10 km/6.2 mi.] Link Budget: 6.4 dB

TN-10GSFP-LR2

10GBase-LR/LW, SFP+ with DMI 1310nm single mode (LC) [20 km/12.4 mi.] Link Budget: 11.4 dB

TN-10GSFP-LR4

10GBase-LR/LW, SFP+ with DMI 1310nm single mode (LC) [40 km/24.9 mi.] Link Budget: 16.5 dB

TN-10GSFP-LR7

10GBase-LR/LW, SFP+ with DMI 1310nm single mode (LC) [70 km/43.4 mi.] Link Budget: 25 dB

Extended Operating Temperature
-40°C to +85°C

TN-10GSFP-SRT

10GBase-SR/SW, SFP+ with DMI 850nm multimode (LC) [300/82/33 m; 985/269/108 ft.] Link Budget: 2.6 dB

TN-10GSFP-LR1T

10GBase-LR/LW, SFP+ with DMI 1310nm single mode (LC) [10 km/6.2 mi.] Link Budget: 9.0 dB

*Distance up to 300m on 50/125 OM3 multimode fiber, up to 82 m for 50/125 um multimode fiber with model.

Bandwidth 500 MHz-km at 850nm, and up to 33m for 62.5/125 um multimode fiber with model bandwidth 200 MHzkm at 850nm.

TN-X2-10GB-xx Series

Cisco Compliant 10GBase X2 Modules

X2 10GBase-X With DMI (SC)



TN-X2-10GB-SR

Features

- X2 Optical Transceiver with duplex SC connector
- 10G X2 MSA Release10.b Compliant
- SFF8472 Digital Diagnostic Function (DMI)
- XAUI Electrical Interface: 4 Lanes at 3.125 Gbps
- Support +5V, +3.3V Power Supply
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard IEC 60825 Compliant
- Compliant with IEEE 802.3ae 10GBase-SR (TN-X2-10GB-SR Module Only)
- Compliant with IEEE 802.3aq 10GBase-LRM (TN-X2-10GB-LRM Module Only)
- Compliant with IEEE 802.3ae 10GBase-LR (TN-X2-10GB-LR Module Only)
- Compliant with IEEE 802.3ae 10GBase-ER (TN-X2-10GB-ER Module Only)
- Compliant with IEEE 802.3ae 10GBase-ZR (TN-X2-10GB-ZR Module Only)

Specifications

Standards	IEEE 802.3ae
Dimensions	Width: 1.42" [36 mm] Depth: 3.58" [91 mm] Height: 0.53" [13.46 mm]
Power Consumption	4.0 Watts
Power Input	+5 V, +3.3 V
Environment	Operating: 0°C to 70°C Storage: -40°C to 80°C
Compliance	IEC-60825, FDA21, CFR 1040.10 & 1040.11
Warranty	Lifetime

Note: The Transition Networks' TN-X2-10GB-xx series X2 modules are designed to install in any X2 port allowing for 10GBase-SR, 10GBase-LR or 10GBase-ER interfaces to the network through X2 connector. The TN-X2-10GB-xx modules are Cisco Compliant* and are designed for bi-directional serial-optical data communication such as 10G Ethernet at speeds up to 10.3 Gbps.

*Transition Networks' X2 modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our X2 modules to be used in all other MSA compliant X2 platforms. In addition, Transition Networks X2 modules are also Compliant with all Cisco X2-based routes and switches, as well as Cisco's IOS software. Transition Networks X2 modules ARE NOT Cisco OEM brand Modules.

Ordering Information

Duplex

TN-X2-10GB-SR

10GBase-SR X2 with DMI
850nm multimode (SC)
[62.5/125 uM (OM1): 33 m/108 ft.]
[50/125 uM (OM2): 82 m/269 ft.]
[50/125 uM (OM3): 300 m/985 ft.]
Link Budget: 4.1dB

TN-X2-10GB-LRM

10GBase-LRM X2 with DMI
1310nm multimode (SC)
[220 m/722 ft.] Link Budget: 2.0dB

TN-X2-10GB-LR

10GBase-LR X2 with DMI
1310nm single mode (SC)
[10 km/6.2 mi.] Link Budget: 9.4dB

TN-X2-10GB-ER

10GBase-ER X2 with DMI
1550nm single mode (SC)
[40 km/24.9 mi.] Link Budget: 15.5dB

TN-X2-10GB-ZR

10GBase-ZR X2 with DMI
1550nm single mode (SC)
[80 km/49.7 mi.] Link Budget: 24.0dB

TN-XFP-xxx Series

MSA Compliant XFP Modules

10GBase-X Fiber Channel, XFP With DMI (LC)



TN-XFP-SR

Applications include: 10G Ethernet Switches and Routers, 10G Fiber Channel Switch Infrastructure, and Metro Edge Switching.

Features

- Hot-Pluggable XFP Footprint LC Optical Transceiver
- Digital Diagnostic Function
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with XFP Multi-Sourcing Agreement (MSA)
- XFP Optical Transceiver with duplex LC connector
- 10G Small Form-Factor Pluggable (XFP) MSA Compliant
- INF-8077i Digital Diagnostic Function (DMI)
- Maximum Link Length of 100 km
- Single +3.3V Power Supply
- Low Power Dissipation < 2 Watts
- RoHS Compliant (all models)
- Compliant with IEEE 802.3ae 10GBase-SR/SW (TN-XFP-SR Module Only)
- Compliant with 10G Fiber Channel 1200-MX-SN-I (TN-XFP-SR Module Only)
- Low power Dissipation < 1.2 Watts (TN-XFP-SR Module Only)
- Compliant with IEEE 802.3ae 10GBase-LR/LW//ER/ZR (TN-XFP-LRx & TN-XFP-ER & TN-XFP-ZR Only)
- Compliant with 10G Fiber Channel 1200-SM-LL-L (TN-XFP-LRx & TN-XFP-ER & TN-XFP-ZR Only)
- Compliant with XFI 10G Serial Electrical Interface (TN-XFP-LRx & TN-XFP-ER & TN-XFP-ZR Only)
- Low power Dissipation < 2 Watts (TN-XFP-LRx & TN-XFP-ER & TN-XFP-ZR Only)

Specifications

Standards	IEEE 802.3ae
Output Wavelength	-5.5nm < λ_c < +7.5nm
Dimensions	Width: 0.71" [18 mm] Depth: 3.07" [78 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C (TN-XFP-SR, TN-XFP-ZR) Operating: -5°C to 70°C (TN-XFP-LR1, TN-XFP-ER) Operating: -45°C to 80°C (TN-XFP-LR1-T) Humidity: 10% to 90% (non-condensing)
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: Per Cisco Systems' literature, the Cisco switches with XFP slots do not accept modules other than Cisco's own XFPs. The Cisco switch identifies the manufacturer ID along with the part number and blocks operations to this port for non-Cisco interfaces. Other major XFP switch manufacturers do not indicate in their literature that such restrictions are imposed.

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

Ordering Information

Duplex

TN-XFP-SR

10GBase-SR/SW/10G Fiber Channel, XFP with DMI 850nm multimode (LC)
[62.5/125 μ m (OM1): 33 m/108 ft.]
[50/125 μ m (OM2): 82 m/269 ft.]
[50/125 μ m (OM3): 300 m/985 ft.]
Modal dispersion: 3.9 dB

TN-XFP-LR1

10GBase-LR/LW/10G Fiber Channel, XFP with DMI 1310nm single mode (LC)
[10 km/6.2 mi.] Link Budget: 6.2 dB

TN-XFP-ER

10GBase-LR/ER/10G Fiber Channel, XFP with DMI 1310nm single mode (LC)
[40 km/24.9 mi.] Link Budget: 16.5 dB

TN-XFP-ZR

10GBase-ZR/10G Fiber Channel, XFP with DMI 1550nm single mode (LC)
[80 km/49.7 mi.] Link Budget: 23.0 dB

TN-XFP-LR10

10GBase-LR/10G Fiber Channel, XFP with DMI single mode 1550nm (LC)
[100 km/62.1 mi.] Link Budget: 25.0 dB

TN-XFP-LRM

10GBase-LRM, XFP with DMI 1310nm multimode (LC)
[300m/985 ft.] Link Budget: 4.5 dB

Extended Operating Temperature
-40°C to +85°C

TN-XFP-LR1-T

10GBase-LR/LW/10G Fiber Channel, XFP with DMI 1310nm single mode (LC)
[10 km/6.2 mi.] Link Budget: 6.2 dB

TN-XFP-10Gxxx Series

Cisco Compatible 10GBase XFP Modules

10GBase-X/10G Fiber Channel/OC-192 (LC) With DMI



Applications include: 10G Ethernet Switches and Routers, 10G Fiber Channel Switch Infrastructure, SONET / SDH Application, and Metro Edge Switching.

Features

- Hot-Pluggable XFP Optical Transceiver with LC connector
- 10G Small Form-Factor Pluggable (XFP) MSA Compliant
- Compliant with XFP Multi-Sourcing Agreement (MSA)
- INF-8077i Digital Diagnostic Function (DMI)
- Maximum Link Length of 80KM
- Support both +3.3V and +5V Power Supply
- Low Power Dissipation < 3 Watts
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard IEC 60825 Compliant
- Compliant with IEEE 802.3ae (TN-XFP-10G-MM-SR Module Only)
- 10GBase-SR/SW (TN-XFP-10G-MM-SR Module Only)
- Compliant with 10G Fiber Channel 1200-MX-SN-I (TN-XFP-10G-MM-SR Module Only)
- Compliant with IEEE 802.3ae (TN-XFP-10G-MM-SR Module Only)
- 10Base-LR/LW/ER/EW/ZR/ZW (TN-XFP-10G-MM-SR Module Only)
- Compliant with 10G Fiber Channel (TN-XFP-10G-MM-SR Module Only)
- 1200-SM-LL-L Compliant with SONET (TN-XFP-10G-MM-SR Module Only)
- OC-192 / SDH STM-64 (TN-XFP-10G-MM-SR Module Only)

Specifications

Standards	IEEE 802.3ae
Output Wavelength	-5.5nm < λ_c < +7.5nm
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Input	3.3V, 5V
Environment	Operating: -5°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-XFP-10Gxxx 10G small form factor pluggables (XFPs) are Cisco Compliant* and are designed for bi-directional serial-optical data communications such as 10G Ethernet, or 10G Fiber Channel.

*Transition Networks' XFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our XFP modules to be used in all other MSA compliant XFP platforms. In addition, TN-XFP-10Gxxx modules are also Compliant with all Cisco XFP-based equipment, as well as Cisco's IOS software. Transition Networks XFP modules ARE NOT Cisco OEM brand modules.

Ordering Information

Duplex

TN-XFP-10G-MM-SR

10GBase-SR/SW / 10G Fiber Channel / OC-192 850nm multimode (LC) with DMI
[62.5/125 μ M (OM1): 33 m/108 ft.]
[50/125 μ M (OM2): 82 m/269 ft.]
[50/125 μ M (OM3): 300 m/985 ft.]
Link Budget: 4.5 dB

TN-XFP-10GLR-OC192SR

10GBase-LR/LW 10G Fiber Channel OC-192 1310nm single mode (LC) with DMI
[10 km/6.2 mi.] Link Budget: 9.4 dB

TN-XFP-10GER-OC192LR

10GBase-ER/EW 10G Fiber Channel OC-192 1550nm single mode (LC) with DMI
[40 km/24.9 mi.] Link Budget: 15.5 dB

TN-XFP-10GZR-OC192LR

10GBase-ZR/ZW / 10G Fiber Channel OC-192 1550nm single mode (LC) with DMI
[80 km/49.7 mi.] Link Budget: 24.0 dB

TN-XFP-10GLR2-OC192S

10GBase-LR/LW / 10G Fiber Channel OC-192 1310nm single mode (LC) with DMI
[20 km/12.4 mi.] Link Budget: 9.0 dB

TN-JD09xB Series

HP Compatible 10GBase SFP+ Modules

10GBase-X, SFP+ With DMI (LC) for HP X130



Applications include: 10G Ethernet Switches and Routers and Metro Edge Switching.

Features

- SFP+ Optical Transceiver with LC connector
- 10G Small Form-Factor Pluggable (SFP+) MSA Compliant
- Compliant with IEEE 802.3ae 10GBase-SR/LR/LW
- SFF-8472 Digital Diagnostic Function (DDM)
- Single +3.3V Power Supply
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard IEC 60825 Compliant

Specifications

Standards	IEEE 802.3z IEEE 802.3
Output Wavelength	-5.5nm < λ _o < +7.5nm
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Input	3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Transition Networks' SFP+ modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP+ modules to be used in all other MSA compliant SFP+ platforms. In addition, Transition Networks SFP modules are also Compliant with all Cisco SFP+ based routers and switches, as well as Cisco's IOS software. Transition Networks SFP+ modules ARE NOT Cisco OEM brand module.

Ordering Information

Duplex

- TN-JD092B**
10Gbase-SR, SFP+ with DMI multimode 850nm (LC) [300/82/33 m; 985/269/108 ft.]
Link Budget: 4.0 dB
- TN-JD093B**
10Gbase-LRM, SFP+ with DMI multimode 1310nm (LC) [220m; 722 ft.]
Link Budget: 1.5 dB
- TN-JD094B**
10Gbase-LR, SFP+ with DMI single mode 1310nm (LC) [10 km/6.2 mi.]
Link Budget: 9.0 dB

TN-J915xA Series

HP Compatible 10GBase SFP+ Modules

10GBase-X, SFP+ With DMI (LC) for HP X132



TN-J9152A

Applications include: 10G Ethernet Switches and Routers and Metro Edge Switching.

Features

- SFP+ Optical Transceiver with LC connector
- 10G Small Form-Factor Pluggable (SFP+) MSA Compliant
- Compliant with IEEE 802.3ae 10GBase-SR/LR/LW
- SFF-8472 Digital Diagnostic Function (DMI)
- Single +3.3V Power Supply
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard IEC 60825 Compliant

Specifications

Standards	IEEE 802.3z IEEE 802.3
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 Input	3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Transition Networks' SFP+ modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP+ modules to be used in all other MSA compliant SFP+ platforms. In addition, Transition Networks SFP modules are also Compliant with all Cisco SFP+ based routers and switches, as well as Cisco's IOS software. Transition Networks SFP+ modules ARE NOT Cisco OEM brand module.

Ordering Information

Duplex

*TN-J9150A

10GBase-SR, SFP+ with DMI multimode 850nm (LC) [300/82/33 m; 985/269/108 ft.]
Link Budget: 4.0 dB

TN-J9152A

10Gbase-LRM, SFP+ with DMI multimode 1310nm (LC) [220m/722 ft.]
Link Budget: 1.5 dB

TN-J9151A

10Gbase-LR, SFP+ with DMI single mode 1310nm (LC) [10 km/6.2 mi.]
Link Budget: 9.0 dB

TN-J9153A

10Gbase-ER, SFP+ with DMI single mode 1550nm (LC) [40 km/24.9 mi.]
Link Budget: 14.1 dB

**Distance up to 300m on 50/125 OM3 multi-mode fiber, up to 82 m for 50/125 um multi-mode fiber with model.*

Bandwidth 500 MHz-km at 850nm, and up to 33 m for 62.5/125 um multi-mode fiber with model bandwidth 200 MHzkm at 850nm.

TN-SFP-10G-xR Series

Cisco Compatible 10GBase SFP+ Modules

10GBase-X, SFP+ With DMI (LC)



TN-SFP-10G-LRM

Applications include: 10G Ethernet Switches and Routers and Metro Edge Switching.

Features

- SFP+ Optical Transceiver with LC connector
- 10G Small Form-Factor Pluggable (SFP+) MSA Compliant
- Compliant with IEEE 802.3ae 10GBase-SR/LR/LW
- SFF-8472 Digital Diagnostic Function (DDF)
- Maximum Link Length of 100KM
- Single +3.3V Power Supply
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard IEC 60825 Compliant

Specifications

Standards	IEEE 802.3z IEEE 802.3
Output Wavelength	-5.5nm < λ_c < +7.5nm
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Input	3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-SFP-10G-xR series 10G SFP+ transceiver modules are designed to install in any SFP+ port allowing for 10GBase-X interfaces to the network through the SFP+ connector. The TN-SFP-10G-xR transceivers are Cisco Compliant* and are designed for bi-directional serial-optical data communication such as 10G Ethernet at speeds up to 10.3 Gbps.

*Transition Networks' SFP+ modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP+ modules to be used in all other MSA compliant SFP+ platforms. In addition, Transition Networks SFP modules are also Compliant with all Cisco SFP+ based routers and switches, as well as Cisco's IOS software. Transition Networks SFP+ modules ARE NOT Cisco OEM brand module



Ordering Information

Duplex

*TN-SFP-10G-SR

10GBase-SR, SFP+
with DMI 850nm multimode (LC)
[300/82/33 m; 985/269/108 ft.]
Link Budget: 4.0 dB

TN-SFP-10G-LRM

10GBase-LRM, SFP+
with DMI 1310nm multimode (LC)
[220m; 722 ft.] Link Budget: 1.5 dB

TN-SFP-10G-LR

10GBase-LR, SFP+
with DMI 1310nm single mode (LC)
[10 km/6.2 mi.] Link Budget: 9.0 dB

TN-SFP-10G-ER

10GBase-ER, SFP+
with DMI 1550nm single mode (LC)
[40 km/24.9 mi.] Link Budget: 15.8 dB

TN-SFP-10G-ZR

10GBase-ZR, SFP+
with DMI 1550nm single mode (LC)
[80 km/49.7 mi.] Link Budget: 24.0 dB

TN-SFP-10G-ZR-10

10GBase-ZR, SFP+ with DMI
1550nm single mode (LC)
[100 km/62.1 mi.] Link Budget: 26.0 dB

TN-SFP-10G-LR-PK

Pack of (20) TN-SFP-10G-LR

TN-SFP-10G-SR-PK

Pack of (20) TN-SFP-10G-SR

*Distance up to 300m on 50/125 OM3 multi-mode fiber, up to 82 m for 50/125 um multi-mode fiber with model.

Bandwidth 500 MHz-km at 850nm, and up to 33 m for 62.5/125 um multi-mode fiber with model bandwidth 200 MHzkm at 850nm.

TN-XFP-LR1-Cxx Series

MSA Compatible CWDM XFP Modules

XFP, 10GBase-LR/10G Fiber Channel Single Mode (LC) With DMI



TN-XFP-LR1-C51

Applications include: 10G Ethernet Switches and Routers, Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Footprint Duplex LC Optical Transceiver
- Digital Diagnostic Function (DMI)
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)

Specifications

Standards	IEEE 802.3 2003 ANSI X3.297-1997 (see additional standards by part number to the left)
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 Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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

Duplex

TN-XFP-LR1-Cxx

XFP 10GBase-LR/10G Fiber Channel single mode (LC) with DMI
[10 km/6.2 mi.] Link Budget: 11.4 dB

xx = center wavelength (nm)

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

TN-CWDM-10G-1xx0-40 Series

Cisco Compatible CWDM SFP+ Modules

10GBase-LR/LW/10G Fiber Channel, SFP+ With DMI Single Mode (LC)



TN-CWDM-10G-1470-40

Applications include: 10G Ethernet Switches and Routers, xDSL Applications, and Metro Edge Switching.

Features

- Compliant with IEEE 802.3ae 10GBase-ER/EW
- SFF-8472 Digital Diagnostic Function (DDI)
- Maximum Link Length of 80KM
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard IEC 60825 Compliant
- SFP+ Optical Transceiver with duplex LC connector
- Single +3.3 V Power Supply

Specifications

Standards	IEEE 802.3ae
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 Input	+5V, 3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-CWDM-10G-1xx0-40 10G modules are Cisco Compliant* and are designed for bi-directional serial-optical data communications such as 10G Ethernet. Each X2/XFP/SFP+ operates at a nominal CWDM wavelength. There are 8 wavelengths available in 20nm steps from 1470nm to 1610nm.

*Transition Networks' X2/XFP/SFP+ modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our X2/XFP/SFP+ modules to be used in all other MSA compliant XFP platforms. In addition, TN-CWDM-10G-1xx0-40 modules are also Compliant with all Cisco X2/XFP/SFP+-based equipment, as well as Cisco's IOS software. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

Ordering Information

Duplex

TN-CWDM-10G-1xx0-40

10GBase-ER/EW/10G Fiber Channel, SFP+ with DMI single mode (LC)
[40 km/24.9 mi.] Link Budget: 14.1 dB

xx = center wavelength (nm)

27 = 1270nm	49 = 1490nm
29 = 1290nm	51 = 1510nm
31 = 1310nm	53 = 1530nm
33 = 1330nm	55 = 1550nm
35 = 1350nm	57 = 1570nm
37 = 1370nm	59 = 1590nm
47 = 1470nm	61 = 1610nm

TN-XFP-LR4-Cxx Series

MSA Compatible CWDM XFP Modules

XFP, 10GBase-ER/10G Fiber Channel Single Mode (LC) With DMI



Applications include: 10G Ethernet Switches and Routers, Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Footprint Duplex LC Optical Transceiver
- Digital Diagnostic Function (DDM)
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)

Specifications

Standards	IEEE 802.3 2003 ANSI X3.297-1997 (see additional standards by part number to the left)
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 Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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

Duplex

TN-XFP-LR4-Cxx

XFP 10GBase-ER/10G Fiber Channel single mode (LC) with DMI
[40 km/24.9 mi.] Link Budget: 15.0 dB

xx = center wavelength (nm)

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

TN-XFP-LR7-Cxx Series

MSA Compatible CWDM XFP Modules

XFP, 10GBase-ZR/10G Fiber Channel Single Mode (LC) With DMI



TN-XFP-LR7-C55

Applications include: 10G Ethernet Switches and Routers, Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Footprint Duplex LC Optical Transceiver
- Digital Diagnostic Function (DMI)
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)

Specifications

Standards	IEEE 802.3 2003 ANSI X3.297-1997 (see additional standards by part number to the left)
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 Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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

Duplex

TN-XFP-LR7-Cxx

XFP 10GBase-ZR single mode (LC) with DMI
[70 km/43.6 mi.] Link Budget: 23.0 dB

xx = center wavelength (nm)

47 = 1470nm
49 = 1490nm
51 = 1510nm
53 = 1530nm
55 = 1550nm
57 = 1570nm
59 = 1590nm
61 = 1610nm

TN-CWDM-10G-1xx0-80 Series

Cisco Compatible CWDM SFP+ Modules

10GBase-LR/LW/10G Fiber Channel, SFP+ With DMI Single Mode (LC)



TN-CWDM-10G-1550-80

Applications include: 10G Ethernet Switches and Routers, xDSL Applications, and Metro Edge Switching.

Features

- Compliant with IEEE 802.3ae 10GBase-ZR/ZW
- SFF-8472 Digital Diagnostic Function (DMI)
- Maximum Link Length of 80KM
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard IEC 60825 Compliant
- SFP+ Optical Transceiver with duplex LC connector
- Single +3.3 V Power Supply

Specifications

Standards	IEEE 802.3ae
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 Input	+5V, 3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-CWDM-10G-1xx0-80 10G modules are Cisco Compliant* and are designed for bi-directional serial-optical data communications such as 10G Ethernet. Each X2/XFP/SFP+ operates at a nominal CWDM wavelength. There are 8 wavelengths available in 20nm steps from 1470nm to 1610nm.

*Transition Networks' X2/XFP/SFP+ modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our X2/XFP/SFP+ modules to be used in all other MSA compliant XFP platforms. In addition, TN-CWDM-10G-1xx0-80 modules are also Compliant with all Cisco X2/XFP/SFP+-based equipment, as well as Cisco's IOS software. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

Ordering Information

Duplex

TN-CWDM-10G-1xx0-80

10GBase-ZR/ZW/10G Fiber Channel, SFP+ with DMI single mode (LC)
[80 km/49.8 mi.] Link Budget: 24.0 dB

xx = center wavelength (nm)

47 = 1470nm
49 = 1490nm
51 = 1510nm
53 = 1530nm
55 = 1550nm
57 = 1570nm
59 = 1590nm
61 = 1610nm

TN-QSFP-40G Series

Cisco Compliant 40G QSFP+

QSFP+ 40GBase-X With DMI



The Transition Networks TN-QSFP-40G series 40G QSFP+ optical transceivers are designed to install in any QSFP+ port allowing for 40GBase-X interfaces to the network through the QSFP+ connector. The TN-QSFP-40G transceivers are Cisco Compliant* and are designed for bi-directional serial-optical data communication such as 40G Ethernet.

Applications include: 40G Ethernet, 10G Ethernet, and Data Center Aggregation Connection.

Features

- High capacity: up to 44.4 Gbps per module
- Compliant with SFF 8436 QSFP+ MSA
- Single +3.3 V Power Supply
- RoHS Compliant (all models)
- Low Power Dissipation : SR4 < 1.5 Watts, LR4 < 3.5w
- **40GBase-SR4: 4 lanes, up to 11.1Gbps per lane, Standard MPO connector**
- **40GBase-LR4: 4 wavelength CWDM Mux/Demux design, up to 11.1Gbps per wavelength, Duplex LC connector**
- Digital Diagnostic Monitoring
- Class 1 Laser International Safety Standard IEC 60825 Compliant

Specifications

Standards	IEEE 802.3ba SFF 8436
Dimensions	Width: 0.71" [18 mm] Depth: 2.83" [72 mm] Height: 0.33" [8.5 mm]
Power Input	3.3V
Environment	Operating: 0°C to +70°C Storage: -40°C to +85°C
Compliance	IEC 60825-1, FDA CDRH 21-CFR 1040.10 Class 1
Warranty	Lifetime

*Transition Networks' QSFP+ modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our QSFP+ modules to be used in all other MSA compliant QSFP+ platforms. In addition, TN QSFP+ modules are also Compliant with all Cisco QSFP+ based routers and switches, as well as Cisco's IOS software. TN QSFP+ modules ARE NOT Cisco OEM brand modules.



Ordering Information

Duplex

TN-QSFP-40G-SR4

QSFP+ 40GBase-SR4, 850nm multimode (MPO)
[400m/1313ft. on OM4, 300m/985ft. on OM3]
with DMI Link Budget: 2.3 dB

TN-QSFP-40G-LR4

QSFP+ 40GBase-LR4, 1271nm, 1291nm,
1311nm, 1331nm, single mode (LC)
[10km/6.2mi.] with DMI Link Budget: 7.0 dB

TN-QSFP-40G-LR4-3

QSFP+ 40GBase-LR4, 1271nm, 1291nm,
1311nm, 1331nm single mode (LC)
[30km/18.7mi.] with DMI Link Budget: 9.0 dB

TN-SFP-OC3MB Series

MSA Compliant 100Base/OC3 SFP Modules

100Base-FX Multimode (SC) with DMI



Applications include: Fast Ethernet / OC3 Switches and Routers, xDSL Applications, and Metro Edge Switching.

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	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

Simplex

TN-SFP-OC3MB1

100Base-FX 1310nm TX/1550nm RX
multimode (SC) with DMI
[2 km/1.2 mi.] Link Budget: 15.0 dB

TN-SFP-OC3MB2

100Base-FX 1550nm TX/1310nm RX
multimode (SC) with DMI
[2 km/1.2 mi.] Link Budget: 15.0 dB

TN-GLC-FE-100BX Series

Cisco Compatible 100Base SFP Modules

100Base-BX Single Fiber Single Mode (LC)



TN-GLC-FE-100BX-U

Applications include: Fast Ethernet Switches & Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

- Hot-Pluggable SFP Footprint Duplex LC Optical Transceiver
- Class 1 Laser International Safety Standard IEC-60825 Compliant
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Compliant with IEEE 802.3 100Base-FX
- Compliant with IEEE 802.3ah 100Base-FX
- Compliant with Intermediate-Reach SONET OC-3/SDH STM-1 (S-1.1)
- Can be used on Optical Line Converter xFMFF4040-100

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	1.0 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C Operating: -40°C to 85°C (TN-GLC-xxx-RGD) Storage: -40°C to 85°C Storage: -40°C to 100°C (TN-GLC-xxx-RGD)
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Ordering Information

Simplex

TN-GLC-FE-100BX-U

100Base-BX 1310nm TX/1550nm RX
single fiber single mode (LC)
[10 km/6.2 mi.] Link Budget: 14.0 dB

TN-GLC-FE-100BX-U-20

100Base-BX 1310nm TX/1550nm RX
single fiber single mode (LC)
[20 km/12.4 mi.] Link Budget: 14.0 dB

TN-GLC-FE-100BX-U-40

100Base-BX 1310nm TX/1550nm RX
single fiber single mode (LC)
[40 km/24.9 mi.] Link Budget: 26.0 dB

TN-GLC-FE-100BX-U-80

100Base-BX 1310nm TX/1550nm RX
single fiber single mode (LC)
[80 km/49.7 mi.] Link Budget: 32.0 dB

TN-GLC-FE-100BX-U-12

100Base-BX 1490nm TX/1550nm RX
single fiber single mode (LC) with DMI
[120 km/74.6 mi.] Link Budget: 32.0 dB

TN-GLC-FE-100BX-D

100Base-BX 1550nm TX/1310nm RX
single fiber single mode (LC)
[10 km/6.2 mi.] Link Budget: 14.0 dB

TN-GLC-FE-100BX-D-20

100Base-BX 1550nm TX/1310nm RX
single fiber single mode (LC)
[20 km/12.4 mi.] Link Budget: 14.0 dB

TN-GLC-FE-100BX-D-40

100Base-BX 1550nm TX/1310nm RX
single fiber single mode (LC)
[40 km/24.9 mi.] Link Budget: 26.0 dB

TN-GLC-FE-100BX-D-80

100Base-BX 1550nm TX/1310nm RX
single fiber single mode (LC)
[80 km/49.7 mi.] Link Budget: 32.0 dB

TN-GLC-FE-100BX-D-12

100Base-BX 1550nm TX/1490nm RX
single fiber single mode (LC) with DMI
[120 km/74.6 mi.] Link Budget: 32.0 dB

Extended Operating Temperature
-40°C to +85°C

TN-GLC-FE-100BX-URGD

100Base-BX 1310nm TX/1550nm RX
single fiber single mode (LC) with DMI
[20 km/12.4 mi.] Link Budget: 14.0 dB

TN-GLC-FE-U-40-RGD

100Base-BX 1310nm TX/1550nm RX
single fiber single mode (LC) with DMI
[40 km/24.9 mi.] Link Budget: 26.0 dB

TN-GLC-FE-100BX-DRGD

100Base-BX 1550nm TX/1310nm RX
single fiber single mode (LC) with DMI
[20 km/12.4 mi.] Link Budget: 14.0 dB

TN-GLC-FE-D-40-RGD

100Base-BX 1550nm TX/1310nm RX
single fiber single mode (LC) with DMI
[40 km/24.9 mi.] Link Budget: 26.0 dB

Note: The Transition Networks TN-GLC-FE-100BX series small form factor pluggable (SFP) transceiver modules are designed to install in any SFP port allowing for 100Base-BX interfaces to the network through the SFP connector. The TN-GLC-FE-100BX transceivers are Cisco Compliant* and are designed for bi-directional serial-optical data communication such as Fast Ethernet or OC3 at speeds up to 155 Mbps.

*Transition Networks' SFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP modules to be used in all other MSA compliant SFP platforms. In addition, Transition Networks SFP modules are also Compliant with all Cisco SFP-based routers and switches, as well as Cisco's IOS software. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

TN-SFP-OC3SB Series

MSA Compliant 100Base/OC3 SFP Modules

100Base-FX/OC-3 Single Mode (LC) with DMI

Applications include: Fast Ethernet / OC3 Switches and Routers, xDSL Applications, and Metro Edge Switching.

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	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

Simplex

TN-SFP-OC3SB21

100Base-FX 1310nm TX/1550nm RX
single mode (LC) with DMI
[20 km/12.4 mi.] Link Budget: 19.0 dB

TN-SFP-OC3SB22

100Base-FX 1550nm TX/1310nm RX
single mode (LC)
[20 km/12.4 mi.] Link Budget: 19.0 dB

TN-SFP-OC3SB41

100Base-FX 1310nm TX/1550nm RX
single mode (LC) with DMI
[40 km/24.9 mi.] Link Budget: 25.0 dB

TN-SFP-OC3SB42

100Base-FX 1550nm TX/1310nm RX
single mode (LC) with DMI
[40 km/24.9 mi.] Link Budget: 25.0 dB

TN-SFP-OC3SB61

100Base-FX 1310nm TX/1550nm RX
single mode (LC) with DMI
[60 km/37.3 mi.] Link Budget: 29.0 dB

TN-SFP-OC3SB62

100Base-FX 1550nm TX/1310nm RX
single mode (LC) with DMI
[60 km/37.3 mi.] Link Budget: 29.0 dB

TN-SFP-OC3SB81

100Base-FX 1310nm TX/1550nm RX
single mode (LC) with DMI
[80 km/49.7 mi.] Link Budget: 31.0 dB

TN-SFP-OC3SB82

100Base-FX 1550nm TX/1310nm RX
single mode (LC) with DMI
[80 km/49.7 mi.] Link Budget: 31.0 dB

TN-SFP-OC3SB121

100Base-FX 1510nm TX/1590nm RX
single mode (LC) with DMI
[120 km/74.6 mi.] Link Budget: 32.0 dB

TN-SFP-OC3SB122

100Base-FX 1590nm TX/1510nm RX
single mode (LC) with DMI
[120 km/74.6 mi.] Link Budget: 32.0 dB

TN-SFP-OC3SB161

100Base-FX 1510nm TX/1590nm RX
single mode (LC) with DMI
[160 km/99.4 mi.] Link Budget: 36.0 dB

TN-SFP-OC3SB162

100Base-FX 1590nm TX/1510nm RX
single mode (LC) with DMI
[160 km/99.4 mi.] Link Budget: 36.0 dB

TN-SFP-OC3SB201

100Base-FX 1510nm TX/1590nm RX
single mode (LC) with DMI
[200 km/124.3 mi.] Link Budget: 46.0 dB

TN-SFP-OC3SB202

100Base-FX 1590nm TX/1510nm RX
single mode with DMI
[200 km/124.3 mi.] Link Budget: 46.0 dB

TN-SFP-LXMB1x Series

MSA Compliant 100Base/1000Base SFP Modules

100Base-BX/1000Base-BX Singe Mode (LC) with DMI



Applications include: Fast Ethernet or Gigabit Ethernet Switches and Routers, xDSL Applications, and Metro Edge Switching.

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Ordering Information

Simplex

TN-SFP-LXMB11
100Base-BX/1000Base-BX 1310nm
TX/1550nm RX single mode (LC)
with DMI [10 km/6.2 mi.] Link Budget: 11.0 dB

TN-SFP-LXMB12
100Base-BX/1000Base-BX 1550nm
TX/1310nm RX single mode (LC)
with DMI [10 km/6.2 mi.] Link Budget: 11.0 dB

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.

TN-SFP-BC55-x Series

SFP with Integrated Network Monitoring Capability

OTDR SFP, 1000Base-LX/100Base-FX Single Fiber Single Mode



The TN-SFP-BC55-x is an intelligent device in Small Form Factor (SFP) with integrated OTDR (Optical Time-Domain Reflectometer) function. As a part of Transition Networks Smart SFP family, it offers the simple way of assessment or monitoring the status of the physical fiber infrastructure. The deployment of this capability could be in a single-ended manner, or both ends as required.

Transition Networks switches, NIDs and Media converters* have started to offer the function of monitoring and reporting the fiber fault by simply plugging in the TN-SFP-BC55-x optical transceivers. Whenever a disconnect or breakage occurs in the fiber connected to one of the Transition Networks devices equipped with TN-SFP-BC55-x, the device can automatically alert the loss of signal or distance to the fault to the IT administrator.

Applications include: Gigabit Ethernet Switches & Routers, Fast Ethernet Switches and Routers, Business Class Service, and Center Office Cross-Connect.

Major Benefits include: small footprint with integrated network monitoring, single wavelength operation in legacy and UPC connector networks, physical layer fault detection, distributed remote fiber monitoring, and no additional special equipment is necessary.

Features

- 1.25Gbps/125Mbps bi-directional data link
- Compliant with IEEE 802.3z 1000Base-LX & IEEE 802.3 100Base-FX
- Single +3.3V Power Supply
- RoHS Compliant (all models)
- MSA Compliant
- Integrated OTDR (Optical Time-Domain Reflectometer) function
- Integrated Reflection Immune Operation – Any Network Type
- SFF-8472 Digital Diagnostic Function (DDMI)
- 55 dB Dynamic Range for the OTDR
- Dead Zone of 30 meters or less
- Resolution of 10 meters or Better
- Accuracy of 50 meters or Better
- Class 1 Laser International Safety Standard IEC 60825 Compliant

Specifications

Standards	IEEE 802.3 IEEE 802.3z
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Input	3.3V
Environment	Operating: -20°C to +70°C Storage: -40°C to +85°C
Compliance	IEC 60825-1, FDA CDRH 21-CFR 1040.10 Class 1
Warranty	1 Year



Ordering Information

Simplex

TN-SFP-BC55-I

SFP w/OTDR 1000Base-LX/100Base-FX
1550nm single fiber single mode (LC)
[40km/24.9mi.] Link Budget: 20.0dB

TN-SFP-BC55

SFP w/ Reflection Immune Operation,
1000Base-LX/100Base-FX, 1550nm single fiber
single mode (SC) [40km/24.9mi.]
Link Budget: 20.0dB

Note: Other wavelengths, Duplex, and other distance options are available upon request.

*Note: Supported by S4224 and S3290 Series currently

TN-SFP-SXB Series

MSA Compliant 1000Base Fiber Channel SFP Modules

1000Base-SX Multimode (LC) With DMI



Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Ordering Information

Simplex

- TN-SFP-SXB1**
1000Base-SX 1310nm TX/1550nm RX multimode (LC) with DMI
[500 m/1640 ft.] Link Budget: 7.0 dB
- TN-SFP-SXB2**
1000Base-SX 1550nm TX/1310nm RX multimode (LC) with DMI
[500 m/1640 ft.] Link Budget: 7.0 dB

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.

TN-SFP-BXx Series

MSA Compliant 1000Base Fiber Channel SFP Modules

1000Base-BX Single Fiber Single Mode (LC) With DMI



Ordering Information

Simplex

TN-SFP-BXU
1000Base-BX 1310nm TX/1490nm RX
single mode (LC) with DMI
[10 km/6.2 mi.] Link Budget: 11.0 dB

TN-SFP-BXU2
1000Base-BX 1310nm TX/1490nm RX
single mode (LC) with DMI
[20 km/12.4 mi.] Link Budget: 14.0 dB

TN-SFP-BXD
1000Base-BX 1490nm TX/1310nm RX
single mode (LC) with DMI
[10 km/6.2 mi.] Link Budget: 11.0 dB

TN-SFP-BXD2
1000Base-BX 1490nm TX/1310nm RX
single mode (LC) with DMI
[20 km/12.4 mi.] Link Budget: 14.0 dB

Features

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

Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	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.

TN-GLC-BX Series

Cisco Compatible Gigabit SFP Modules

1000Base-BX Single Fiber Single Mode (LC) With DMI



TN-GLC-BX-D

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-GLC-BX series small form factor pluggable (SFP) transceiver modules are designed to install in any SFP port allowing for 1000Base-BX interfaces to the network through the SFP connector. The TN-GLC-BX transceivers are Cisco Compliant* and are designed for bi-directional serial-optical data communication such as Gigabit Ethernet or fiber channel at speeds up to 1.25 Gbps.

*Transition Networks' SFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP modules to be used in all other MSA compliant SFP platforms. In addition, Transition Networks SFP modules are also Compliant with all Cisco SFP-based routers and switches, as well as Cisco's IOS software. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

Ordering Information

Simplex

TN-GLC-BX-U

1000Base-BX 1310nm TX/1490nm RX
single fiber single mode (LC) with DMI
[10 km/6.2 mi.] Link Budget: 12.0 dB

TN-GLC-BX-D

1000Base-BX 1490nm TX/1310nm RX
single fiber single mode (LC) with DMI
[10 km/6.2 mi.] Link Budget: 12.0 dB

TN-GLC-BX-U-20

1000Base-BX 1310nm TX/1490nm RX
single fiber single mode (LC) with DMI
[20 km/12.4 mi.] Link Budget: 10.5 dB

TN-GLC-BX-D-20

1000Base-BX 1490nm TX/1310nm RX
single fiber single mode (LC) with DMI
[20 km/12.4 mi.] Link Budget: 11.0 dB

TN-GLC-BX-U-40

1000Base-BX 1310nm TX/1490nm RX
single fiber single mode (LC) with DMI
[40 km/24.9 mi.] Link Budget: 20.0 dB

TN-GLC-BX-D-40

1000Base-BX 1490nm TX/1310nm RX
single fiber single mode (LC) with DMI
[40 km/24.9 mi.] Link Budget: 20.0 dB

TN-GLC-BX-U-80

1000Base-BX 1490nm TX/1550nm RX
single fiber single mode (LC) with DMI
[80 km/49.7 mi.] Link Budget: 26.0 dB

TN-GLC-BX-D-80

1000Base-BX 1550nm TX/1490nm RX
single fiber single mode (LC) with DMI
[80 km/49.7 mi.] Link Budget: 26.0 dB

TN-GLC-BX-U-120

1000Base-BX 1490nm TX/1550nm RX
single fiber single mode (LC) with DMI
[120 km/74.6 mi.] Link Budget: 31.0 dB

TN-GLC-BX-D-120

1000Base-BX 1550nm TX/1490nm RX
single fiber single mode (LC) with DMI
[120 km/74.6 mi.] Link Budget: 31.0 dB

TN-SFP-LXB Series

MSA Compliant 1000Base Fiber Channel SFP Modules

1000Base-LX Single Mode (LC) With DMI



TN-SFP-LXB11

Applications include: Gigabit Ethernet Switches and Routers, Fiber Channel Switch Infrastructure, xDSL Applications, and Metro Edge Switching.

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C Operating: -40°C to 85°C (TN-SFP-LXBxxT)
Compliance	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

Simplex

TN-SFP-LXB11

1000Base-LX 1310nm TX/1550nm RX
single mode (LC) with DMI
[10 km/6.2 mi.] Link Budget: 11.0 dB

TN-SFP-LXB12

1000Base-LX 1550nm TX/1310nm RX
single mode (LC) with DMI
[10 km/6.2 mi.] Link Budget: 11.0 dB

TN-SFP-LXB21

1000Base-LX 1310nm TX/1550nm RX
single mode (LC) with DMI
[20 km/12.4 mi.] Link Budget: 14.0 dB

TN-SFP-LXB22

1000Base-LX 1550nm TX/1310nm RX
single mode (LC) with DMI
[20 km/12.4 mi.] Link Budget: 14.0 dB

TN-SFP-LXB41

1000Base-LX 1310nm TX/1550nm RX
single mode (LC) with DMI
[40 km/24.9 mi.] Link Budget: 20.0 dB

TN-SFP-LXB42

1000Base-LX 1550nm TX/1310nm RX
single mode (LC) with DMI
[40 km/24.9 mi.] Link Budget: 20.0 dB

TN-SFP-LXB61

1000Base-LX 1310nm TX/1550nm RX
single mode (LC) with DMI
[60 km/37.3 mi.] Link Budget: 23.0 dB

TN-SFP-LXB62

1000Base-LX 1550nm TX/1310nm RX
single mode (LC) with DMI
[60 km/37.3 mi.] Link Budget: 23.0 dB

TN-SFP-LXB81

1000Base-LX 1510nm TX/1590nm RX
single mode (LC) with DMI
[80 km/49.7 mi.] Link Budget: 24.0 dB

TN-SFP-LXB82

1000Base-LX 1590nm TX/1510nm RX
single mode (LC) with DMI
[80 km/49.7 mi.] Link Budget: 24.0 dB

TN-SFP-LXB161

1000Base-LX 1510nm TX/1590nm RX
single mode (LC) with DMI
[160 km/99.4 mi.] Link Budget: 37.0 dB

TN-SFP-LXB162

1000Base-LX 1590nm TX/1510nm RX
single mode (LC) with DMI
[160 km/99.4 mi.] Link Budget: 37.0 dB

Extended Operating Temperature
-40°C to +85°C

TN-SFP-LXB11T

1000Base-LX 1310nm TX/1550nm RX
single mode (LC) with DMI
[10 km/6.2 mi.] Link Budget: 11.0 dB

TN-SFP-LXB12T

1000Base-LX 1550nm TX/1310nm RX
single mode (LC) with DMI
[10 km/6.2 mi.] Link Budget: 11.0 dB

TN-SFP-LXB21T

1000Base-LX 1310nm TX/1550nm RX
single mode (LC) with DMI
[20 km/12.4 mi.] Link Budget: 14.0 dB

TN-SFP-LXB22T

1000Base-LX 1550nm TX/1310nm RX
single mode (LC) with DMI
[20 km/12.4 mi.] Link Budget: 14.0 dB

TN-XFP-10G-x Series

Cisco Compatible 10GBase XFP Modules

10GBase-X/10G Fiber Channel Single Fiber Single Mode (LC) With DMI



Applications include: 10G Ethernet Switches and Routers, 10G Fiber Channel Switch Infrastructure, SONET / SDH Application, and Metro Edge Switching.

Features

- Hot-Pluggable XFP Optical Transceiver with LC connector
- 10G Small Form-Factor Pluggable (XFP) MSA Compliant
- Compliant with XFP Multi-Sourcing Agreement (MSA)
- INF-8077i Digital Diagnostic Function (DMI)
- Maximum Link Length of 80KM
- Support both +3.3V and +5V Power Supply
- Low Power Dissipation < 3 Watts
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard IEC 60825 Compliant

Specifications

Standards	IEEE 802.3ae
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 Input	3.3V, 5V
Environment	Operating: -5°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-XFP-10G-x 10G small form factor pluggables (XFPs) are Cisco Compliant* and are designed for bi-directional serial-optical data communications such as 10G Ethernet, or 10G Fiber Channel.

*Transition Networks' XFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our XFP modules to be used in all other MSA compliant XFP platforms. In addition, TN-XFP-10G-x modules are also Compliant with all Cisco XFP-based equipment, as well as Cisco's IOS software. Transition Networks XFP modules ARE NOT Cisco OEM brand modules.

Ordering Information

Simplex

TN-XFP-10G-U

10GBase-LR/LW / 10G Fiber Channel
1270nm TX/1330nm RX single fiber
single mode (LC) with DMI
[10 km/6.2 mi.] Link Budget: 9.0 dB

TN-XFP-10G-D

10GBase-LR/LW / 10G Fiber Channel
1330nm TX/1270nm RX single fiber
single mode (LC) with DMI
[10 km/6.2 mi.] Link Budget: 9.0 dB

TN-XFP-10G-U-40

10GBase-BX / 10G Fiber Channel
1270nm TX/1330nm RX single fiber
single mode (LC) with DMI
[40 km/24.9 mi.] Link Budget: 15.0 dB

TN-XFP-10G-D-40

10GBase-BX / 10G Fiber Channel
1330nm TX/1270nm RX single fiber
single mode (LC) with DMI
[40 km/24.9 mi.] Link Budget: 15.0 dB

TN-SFP-10G-x-xx Series

Cisco Compatible 10GBase SFP+ Modules

10GBase-X, SFP+ With DMI (LC)



Applications include: 10G Ethernet Switches and Routers and Metro Edge Switching.

Features

- SFP+ Optical Transceiver with LC connector
- 10G Small Form-Factor Pluggable (SFP+) MSA Compliant
- Compliant with IEEE 802.3ae 10GBase-SR/LR/LW
- SFF-8472 Digital Diagnostic Function (DDI)
- Maximum Link Length of 100KM
- Single +3.3V Power Supply
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard IEC 60825 Compliant

Specifications

Standards	IEEE 802.3z IEEE 802.3
Output Wavelength	-5.5nm < λ_c < +7.5nm
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Input	3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC 60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-SFP-10G-x-xx series 10G SFP+ transceiver modules are designed to install in any SFP+ port allowing for 10GBase-X interfaces to the network through the SFP+ connector. The TN-SFP-10G-x-xx transceivers are Cisco Compliant* and are designed for bi-directional serial-optical data communication such as 10G Ethernet at speeds up to 10.3 Gbps.

*Transition Networks' SFP+ modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP+ modules to be used in all other MSA compliant SFP+ platforms. In addition, Transition Networks SFP modules are also Compliant with all Cisco SFP+ based routers and switches, as well as Cisco's IOS software. Transition Networks SFP+ modules ARE NOT Cisco OEM brand module

Ordering Information

Simplex

TN-SFP-10G-U-10

10GBase-BX, SFP+ with DMI
1270nm TX/1330nm RX single mode (LC)
[10 km/6.2 mi.] Link Budget: 5.9 dB

TN-SFP-10G-D-10

10GBase-BX, SFP+ with DMI
1330nm TX/1270nm RX single mode (LC)
[10 km/6.2 mi.] Link Budget: 5.9 dB

TN-SFP-10G-U-20

10GBase-BX, SFP+ with DMI
1270nm TX/1330nm RX single mode (LC)
[20 km/12.4 mi.] Link Budget: 12.1 dB

TN-SFP-10G-D-20

10GBase-BX, SFP+ with DMI
1330nm TX/1270nm RX single mode (LC)
[20 km/12.4 mi.] Link Budget: 12.1 dB

TN-SFP-10G-U-40

10GBase-BX, SFP+ with DMI
1270nm TX/1330nm RX single mode (LC)
[40 km/24.9 mi.] Link Budget: 16.0 dB

TN-SFP-10G-D-40

10GBase-BX, SFP+ with DMI
1330nm TX/1270nm RX single mode (LC)
[40 km/24.9 mi.] Link Budget: 16.0 dB

TN-SFP-10G-U-60

10GBase-BX, SFP+ with DMI
1270nm TX/1330nm RX single mode (LC)
[60 km/37.3 mi.] Link Budget: 20.0 dB

TN-SFP-10G-D-60

10GBase-BX, SFP+ with DMI
1330nm TX/1270nm RX single mode (LC)
[60 km/37.3 mi.] Link Budget: 20.0 dB

TN-SFP-10G-U-80

10GBase-BX, SFP+ with DMI
1490nm TX/1550nm RX single mode (LC)
[80 km/49.7 mi.] Link Budget: 23.0 dB

TN-SFP-10G-D-80

10GBase-BX, SFP+ with DMI
1550nm TX/1490nm RX single mode (LC)
[80 km/49.7 mi.] Link Budget: 23.0 dB

TN-10GSFP-LRB Series

MSA Compliant 10GBase SFP+ Modules

10GBase-BX, SFP+ With DMI Single Mode (LC)



TN-10GSFP-LRB11

Features

- SFP+ Optical Transceiver
- 10G Small Form-Factor Pluggable (SFP+) MSA Compliant
- SFF-8472 Digital Diagnostic Function (DDI)
- Single +3.3 V Power Supply
- Up to 10.5 Gbps bidirectional data links
- RoHS Compliant (all models)
- Class 1 Laser International Safety Standard IEC 60825 Compliant

Specifications

Standards	IEEE 802.3ae
Data Rates	10.3 Gbps
Dimensions	Width: 0.52" [13 mm] Depth: 2.2" [56 mm] Height: 0.33" [8 mm]
Power Supply	+3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FAD 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Ordering Information

Simplex

TN-10GSFP-LRB11

10GBase-BX, SFP+ with DMI 1270nm TX
/1330nm RX single mode (LC)
[10 km/6.2 mi.] Link Budget: 9.0 dB

TN-10GSFP-LRB12

10GBase-BX, SFP+ with DMI 1330nm TX
/1270nm RX single mode (LC)
[10 km/6.2 mi.] Link Budget: 9.0 dB

TN-10GSFP-LRB21

10GBase-BX, SFP+ with DMI 1270nm TX
/1330nm RX single mode (LC)
[20 km/12.4 mi.] Link Budget: 12.0 dB

TN-10GSFP-LRB22

10GBase-BX, SFP+ with DMI 1330nm TX
/1270nm RX single mode (LC)
[20 km/12.4 mi.] Link Budget: 12.0 dB

TN-10GSFP-LRB41

10GBase-BX, SFP+ with DMI 1270nm TX
/1330nm RX single mode (LC)
[40 km/24.9 mi.] Link Budget: 16.0 dB

TN-10GSFP-LRB42

10GBase-BX, SFP+ with DMI 1330nm TX
/1270nm RX single mode (LC)
[40 km/24.9 mi.] Link Budget: 16.0 dB

TN-10GSFP-LRB61

10GBase-BX, SFP+ with DMI 1270nm TX
/1330nm RX single mode (LC)
[60 km/37.3 mi.] Link Budget: 23.0 dB

TN-10GSFP-LRB62

10GBase-BX, SFP+ with DMI 1330nm TX
/1270nm RX single mode (LC)
[60 km/37.3 mi.] Link Budget: 23.0 dB

MSA Compliant 100Base SFP Modules



Applications include: Fast Ethernet / OC3 Switches and Routers, xDSL Applications, and Metro Edge Switching.

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C Operating: -20°C to 85°C (TN-SFP-STM1E)
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Ordering Information

Duplex

TN-SFP-TX
100Base-TX (RJ-45) [100 m/328 ft.]

TN-SFP-STM1E
OC3/STM1 (Mini BNC) [140m]

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.

TN-GLC-T Series

Cisco Compatible Gigabit SFP Modules

1000Base-T (RJ-45)



TN-GLC-T-MG

Ordering Information

TN-GLC-T	1000Base-T (RJ-45) [100 m/328 ft.]
TN-GLC-T-MG	10/100/1000Base-T (RJ-45) [100 m/328 ft.]

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.95" [24 mm] Depth: 2.8" [71 mm] Height: 0.54" [14 mm]
Power Consumption	1.0 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-GLC-T series small form factor pluggable (SFP) transceiver modules are designed to install in any SFP port allowing for 1000Base-T interfaces to the network through the SFP connector. The TN-GLC-T transceivers are Cisco Compliant* and are designed for bi-directional serial-optical data communication such as Gigabit Ethernet or fiber channel at speeds up to 1.25 Gbps.

*Transition Networks' SFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP modules to be used in all other MSA compliant SFP platforms. In addition, Transition Networks SFP modules are also compliant with all Cisco SFP-based routers and switches, as well as Cisco's IOS software. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

TN-SFP-GE-T

Hardened Cisco Compatible Gigabit SFP Modules

1000Base-T (RJ-45)



Ordering Information

TN-SFP-GE-T

1000Base-T (RJ-45) [100 m/328 ft.]

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.95" [24 mm] Depth: 2.8" [71 mm] Height: 0.54" [14 mm]
Power Consumption	1.0 Watts
Power Input	3.3V
Environment	Operating: -10°C to 80°C
Compliance	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-SFP-GE-T series small form factor pluggable (SFP) transceiver modules are designed to install in any SFP port allowing for 1000Base-T interfaces to the network through the SFP connector. The TN-SFP-GE-T transceivers are Cisco Compliant* and are designed for bi-directional serial-optical data communication such as Gigabit Ethernet or fiber channel at speeds up to 1.25 Gbps.

*Transition Networks' SFP modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP modules to be used in all other MSA compliant SFP platforms. In addition, Transition Networks SFP modules are also Compliant with all Cisco SFP-based routers and switches, as well as Cisco's IOS software. Transition Networks SFP modules ARE NOT Cisco OEM brand modules.

TN-SFP-T-MG

MSA Compliant 10/100/1000Base Copper SFP Module

10/100/1000Base-T (RJ-45)



Ordering Information

Duplex

TN-SFP-T-MG

10/100/1000Base-T (RJ-45)

[100 m/328 ft.]

Features

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

Specifications

Standards	IEEE 802.3
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Consumption	0.66 Watts
Power Input	3.3V
Environment	Operating: 0°C to 70°C
Compliance	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.

TN-EOT-xx Series

Ethernet Over 2-Wire / Coax Gigabit Ethernet SFP Extender

MSA Compliant 1000Base-X, RJ-45



The TN-EOT-xx Series is an Ethernet Extender in a standard SFP form factor, it provides the ability to leverage the existing 2-Wire or Coax cable infrastructure to extend the Ethernet service. It can extend the Ethernet service on 2-wire with distances up to 400 meters at 200Mbps bi-directional data rate or extend Ethernet on Coax cabling with distances up to 500 meters at 300Mbps bi-directional data rate.

The TN-EOT-xx Series complies with MSA standards and can quickly enable any switch or media converter with a Gigabit SFP slot to connect beyond typical Ethernet distances (100 meters).

Ordering Information

TN-EOT-CO

SFP, Ethernet Extender, Server, 1000Base-X, RJ-45, (includes RJ to BNC and RJ to Terminal Block adapters)

TN-EOT-RT

SFP, Ethernet Extender, CPE, 1000Base-X, RJ-45, (includes RJ to BNC and RJ to Terminal Block adapters)

*Note: Product must be purchased in pairs.

Features

- MSA Compliant Gigabit SFP
- Plug and Play
- Based on VDSL2 technology
- Support maximum PHY rate up to 300Mbps per line
- Industrial rate operating temperature -40°C to +75°C
- 2KV ESD Class

Specifications

Standards	IEEE 802.3z ITU-T VDSL2
Connectors	(1) RJ-45
Status LEDs	LED1: ORANGE: On: Server; Off: CPE LED2: GREEN: Link Status
Dimensions	Width: 0.52" [13 mm] Depth: 3.1" [79 mm] Height: 0.67" [17 mm]
Power Input	3.3V, 700mA
Environment	Operating: -40°C to +75°C Humidity: 10% to 90% (non-condensing)
Weight	0.07 lbs. [.03 kg]
ESD	2KV
Compliance	Safety: CE/FCC
Warranty	1 Year

DAC-10G-SFP-0xM Series

Direct Attached Copper Cable Assemblies for 10G Networks



The SFP+ copper cable assemblies were developed specifically as a cost-effective and low power alternative to optical cables and optical SFP+ modules for short reach links in high-speed interconnect applications.

Applications include: InfiniBand SDR, DDR, and QDR, Ethernet 1G and 10G, Fiber Channel 8G and 10G, FCoE 10G, Networking, Storage, and hubs, switches, routers, servers, and NICs.

Features

- Supports data transfer rates from 1Gbps up to 10+ Gbps
- Ideal for high speed interconnects in enterprise networking, storage area networks, and at service provider customer hand-off points
- Combines twin-axial shielded cable configurations with robust die cast housings for enhanced support of high frequency data rates
- Impedances matched to ensure interoperability and minimize EMI leakage through their fully-shielded design
- Standard SFP+ latch interoperable with all compliant interfaces

Specifications

Standards	Electrical: SFF-8431, SFF-8083 Mechanical: SFF-8432 EEPROM: SFF-8472 IEEE: 10GBase-CR
Electrical	Min. Dielectric Withstand Voltage: 300VDC Insulation Resistance: 1000Mohms Current Rating: 0.5 Amp Min/Signal Contact
Flammability Rating	UL 94 V-0
Green Features	RoHS, Lead Free
Shield	Braid/Foil
Plug	Backshell Material: Nickel-Plated Zinc Diecast Contact material: PCB with Gold-Plated Pads Plastic Material: LCP Latch: Positive Latching w/ Lanyard Pull
Cable	Conductor: Solid Wire Gauge: 30 AWG to 24 AWG Impedance: 100+/- 5 ohms Construction: Twin axial Cable ODCable 30 AWG = 4.45mm (0.175 in) 28 AWG = 4.7mm (0.185 in) 24 AWG = 5.7mm (0.255 in) Jacket Type: PVC Bend Radius: 5x Cable OD
Compatibility	MSA Compliant: Cables are compliant with Multi-Sourcing Agreement compliant SFP ports Cisco Compliant: Starting with Cisco NX-OS Software release 4.1(3)N2.1, these cables are Compliant with the Nexus 2000 and 5000 series switches
Environment	Operating: -10°C to 70°C
Weight	1 lb. [0.45 kg]
Warranty	Lifetime

Ordering Information

DAC-10G-SFP-01M

10Gig Direct Attached SFP+ copper cable, 30 AWG, 1 meter

DAC-10G-SFP-03M

10Gig Direct Attached SFP+ copper cable, 30 AWG, 3 meter

DAC-10G-SFP-05M

10Gig Direct Attached SFP+ copper cable, 28 AWG, 5 meter

DAC-10G-SFP-07M

10Gig Direct Attached SFP+ copper cable, 24 AWG, 7 meter

CWDM-A2A8xxLCR Series

Add/Drop Mux Coarse Wavelength Division Multiplexing (CWDM)

1 Channel With E/W Lines



CWDM Add/Drop

Transition Networks CWDM products use a passive technology that allows for any protocol to be transported over the fiber link, as long as it is at a specific wavelength. Transition Networks' CWDM Mux/Demux and Add/Drop Mux can provide a simple and affordable method to maximize existing fiber capacity with little or no increased cost.

Features

- Increase bandwidth on existing fiber infrastructure
- Alleviate fiber exhaustion
- Transmit multiple protocols over an existing duplex fiber link by combining the fiber outputs of multiple media converters
- Provide scalable bandwidth of up to 10 Gbps per channel over existing fiber links
- Plug-and-Play, no configuration of CWDM components
- Use existing standard optical ports on switches and routers
- Utilize Optical Line Converter as transponder

Specifications

Operating Wavelength	1303.5nm ~ 1616.5nm
Center Wavelength (λ_c)	1470nm ~ 1610nm
Add/Drop Ch. Max Insertion Loss*	1.1 dB *Note: All Insertion Loss values include one connector pair
CWDM Channel Spacing	20nm
CWDM Channel Passband	-5.5nm < λ_c < +7.5nm
Passband Ripple	0.5 dB (max)
Adjacent Channel Isolation	30 dB (min)
Non-adjacent Channel Isolation	40 dB (min)
Directivity	50 dB (min)
Return Loss	45 dB (min)
Polarization Dependent Loss (PDL)	0.2 dB (max)
Optical Operating Power	300 mW (max)
Fiber Type	Corning SMF-28
Dimensions	Module Rack Width: 8.3" [212 mm] Depth: 7.6" [192 mm] Height: 1.7" [43 mm] Mount Bracket Width: 18.9" [481 mm] Depth: 1.6" [40 mm] Height: 1.7" [44 mm]
Environment	Operating: 0°C to +70°C Storage: -40°C to +85°C
Warranty	Lifetime



Ordering Information

Add/Drop Mux

CWDM-A2A831LCR

1 Channel 1310 port with E/W lines

CWDM-A2A833LCR

1 Channel 1330 port with E/W lines

CWDM-A2A835LCR

1 Channel 1350 port with E/W lines

CWDM-A2A837LCR

1 Channel 1370 port with E/W lines

CWDM-A2A839LCR

1 Channel 1390 port with E/W lines

CWDM-A2A841LCR

1 Channel 1410 port with E/W lines

CWDM-A2A843LCR

1 Channel 1430 port with E/W lines

CWDM-A2A845LCR

1 Channel 1450 port with E/W lines

CWDM-A2A847LCR

1 Channel 1470 port with E/W lines

CWDM-A2A849LCR

1 Channel 1490 port with E/W lines

CWDM-A2A851LCR

1 Channel 1510 port with E/W lines

CWDM-A2A853LCR

1 Channel 1530 port with E/W lines

CWDM-A2A855LCR

1 Channel 1550 port with E/W lines

CWDM-A2A857LCR

1 Channel 1570 port with E/W lines

CWDM-A2A859LCR

1 Channel 1590 port with E/W lines

CWDM-A2A861LCR

1 Channel 1610 port with E/W lines

Optional Accessories (sold separately)

CWDM-MB19R1

19" Rack Mount Bracket, 1RU High, holds 2 CWDM Modules

*Note: 1310nm Channel is wideband (+/-50nm)

Other channel configurations may be available upon request.

CWDM-M551LCR

Coarse Wavelength Division Multiplexing (CWDM)

4 Channel + OSC Duplex LC



Transition Networks CWDM products use a passive technology that allows for any protocol to be transported over the fiber link, as long as it is at a specific wavelength. Transition Networks' CWDM Mux/Demux and Add/Drop Mux can provide a simple and affordable method to maximize existing fiber capacity with little or no increased cost.

Features

- Increase bandwidth on existing fiber infrastructure
- Alleviate fiber exhaustion
- Transmit multiple protocols over an existing duplex fiber link by combining the fiber outputs of multiple media converters
- Provide scalable bandwidth of up to 10 Gbps per channel over existing fiber links
- Plug-and-Play, no configuration of CWDM components
- Use existing standard optical ports on switches and routers
- Utilize Optical Line Converter as transponder

Specifications

CWDM Operating Wavelength	1500nm ~ 1620nm
CWDM Center Wavelength (λ_c)	1510nm ~ 1610nm
1310nm Ch. Operating Wavelength	1260nm ~ 1360nm
1310nm Ch. Center Wavelength (λ_c)	1310nm
CWDM Max. Insertion Loss*	2.0 dB/channel
1310nm Ch. Max Insertion Loss*	1.0 dB/channel
*Note: All Insertion Loss values include one connector pair	
1310nm Ch. Port Isolation	30 dB (min) (at CWDM bands)
CWDM Channel Spacing	20nm
CWDM Channel Passband	$-5.5\text{nm} < \lambda_c < +7.5\text{nm}$
Passband Ripple	0.5 dB (max)
Adjacent Channel Isolation	30 dB (min)
Non-adjacent Channel Isolation	40 dB (min)
Directivity	50 dB (min)
Return Loss	45 dB (min)
Polarization Dependent Loss (PDL)	0.2 dB (max)
Optical Operating Power	300 mW (max)
Fiber Type	Corning SMF-28
Dimensions	Module Rack Width: 8.3" [212 mm] Depth: 7.6" [192 mm] Height: 1.7" [43 mm] Mount Bracket Width: 18.9" [481 mm] Depth: 1.6" [40 mm] Height: 1.7" [44 mm]
Environment	Operating: 0°C to +70°C Storage: -40°C to +85°C
Warranty	Lifetime

Ordering Information

Mux/Demux

CWDM-M551LCR

4 Ch. + OSC, 1510/1530/1550/1570 + 1310nm, Duplex LC

Optional Accessories (sold separately)

CWDM-MB19R1

19" Rack Mount Bracket, 1RU High, holds 2 CWDM Modules

*Note: 1310nm Channel is wideband (+/-50nm)

Other channel configurations may be available upon request.

CWDM-M947LCR

Coarse Wavelength Division Multiplexing (CWDM)

8 Channel + OSC Duplex LC



Transition Networks CWDM products use a passive technology that allows for any protocol to be transported over the fiber link, as long as it is at a specific wavelength. Transition Networks' CWDM Mux/Demux and Add/Drop Mux can provide a simple and affordable method to maximize existing fiber capacity with little or no increased cost.

Features

- Increase bandwidth on existing fiber infrastructure
- Alleviate fiber exhaustion
- Transmit multiple protocols over an existing duplex fiber link by combining the fiber outputs of multiple media converters
- Provide scalable bandwidth of up to 10 Gbps per channel over existing fiber links
- Plug-and-Play, no configuration of CWDM components
- Use existing standard optical ports on switches and routers
- Utilize Optical Line Converter as transponder

Specifications

CWDM Operating Wavelength	1460nm ~ 1620nm
CWDM Center Wavelength (λ_c)	1470nm ~ 1610nm
1310nm Ch. Operating Wavelength	1260nm ~ 1360nm
1310nm Ch. Center Wavelength (λ_c)	1310nm
CWDM Max. Insertion Loss*	3.3 dB/channel
1310nm Ch. Max Insertion Loss*	1.0 dB/channel
*Note: All Insertion Loss values include one connector pair	
1310nm Ch. Port Isolation	30 dB (min) (at CWDM bands)
CWDM Channel Spacing	20nm
CWDM Channel Passband	-5.5nm < λ_c < +7.5nm
Passband Ripple	0.5 dB (max)
Adjacent Channel Isolation	30 dB (min)
Non-adjacent Channel Isolation	40 dB (min)
Directivity	50 dB (min)
Return Loss	45 dB (min)
Polarization Dependent Loss (PDL)	0.2 dB (max)
Optical Operating Power	300 mW (max)
Fiber Type	Corning SMF-28
Dimensions	Module Rack Width: 8.3" [212 mm] Depth: 7.6" [192 mm] Height: 1.7" [43 mm] Mount Bracket Width: 18.9" [481 mm] Depth: 1.6" [40 mm] Height: 1.7" [44 mm]
Environment	Operating: 0°C to +70°C Storage: -40°C to +85°C
Warranty	Lifetime

Ordering Information

Mux/Demux

CWDM-M947LCR

8 Ch. + OSC, 1470-1610 + 1310nm, Duplex LC

Optional Accessories (sold separately)

CWDM-MB19R1

19" Rack Mount Bracket, 1RU High, holds 2 CWDM Modules

*Note: 1310nm Channel is wideband (+/-50nm)

Other channel configurations may be available upon request.

CWDM-M1631LCR Series

Coarse Wavelength Division Multiplexing (CWDM)

16 Channel + OSC Duplex LC



Transition Networks CWDM products uses a passive technology that allows for any protocol to be transported over the fiber link, as long as it is at a specific wavelength. Transition Networks' CWDM Mux/Demux and Add/Drop Mux can provide a simple and affordable method to maximize existing fiber capacity with little or no increased cost.

Features

- Increase bandwidth on existing fiber infrastructure
- Alleviate fiber exhaustion
- Transmit multiple protocols over an existing duplex fiber link by combining the fiber outputs of multiple media converters
- Provide scalable bandwidth of up to 10 Gbps per channel over existing fiber links
- Plug-and-Play, no configuration of CWDM components
- Use existing standard optical ports on switches and routers
- Utilize Optical Line Converter as transponder

Specifications

Operating Wavelength	1300nm ~ 1620nm
Center Wavelength (λ_c)	1310nm ~ 1610nm
Max Insertion Loss*	3.7 dB/channel *Note: All Insertion Loss values include one connector pair
CWDM Channel Spacing	20nm
CWDM Channel Passband	$-5.5\text{nm} < \lambda_c < +7.5\text{nm}$
Passband Ripple	0.5 dB (max)
Adjacent Channel Isolation	30 dB (min)
Non-adjacent Channel Isolation	40 dB (min)
Directivity	50 dB (min)
Return Loss	45 dB (min)
Polarization Dependent Loss (PDL)	0.2 dB (max)
Optical Operating Power	300 mW (max)
Fiber Type	Corning SMF-28
Dimensions	Module Rack Width: 8.3" [212 mm] Depth: 7.6" [192 mm] Height: 1.7" [43 mm] Mount Bracket Width: 18.9" [481 mm] Depth: 1.6" [40 mm] Height: 1.7" [44 mm]
Environment	Operating: 0°C to +70°C Operating: -40°C to +85°C (CWDM-M1631LCR-H) Storage: -40°C to +85°C
Warranty	Lifetime

Ordering Information

Mux/Demux

CWDM-M1631LCR

16 Ch. , 1310-1610nm, Duplex LC

CWDM-M1631LCR-H

Hardened 16 Ch. , 1310-1610nm, Duplex LC

Optional Accessories (sold separately)

CWDM-MB19R1

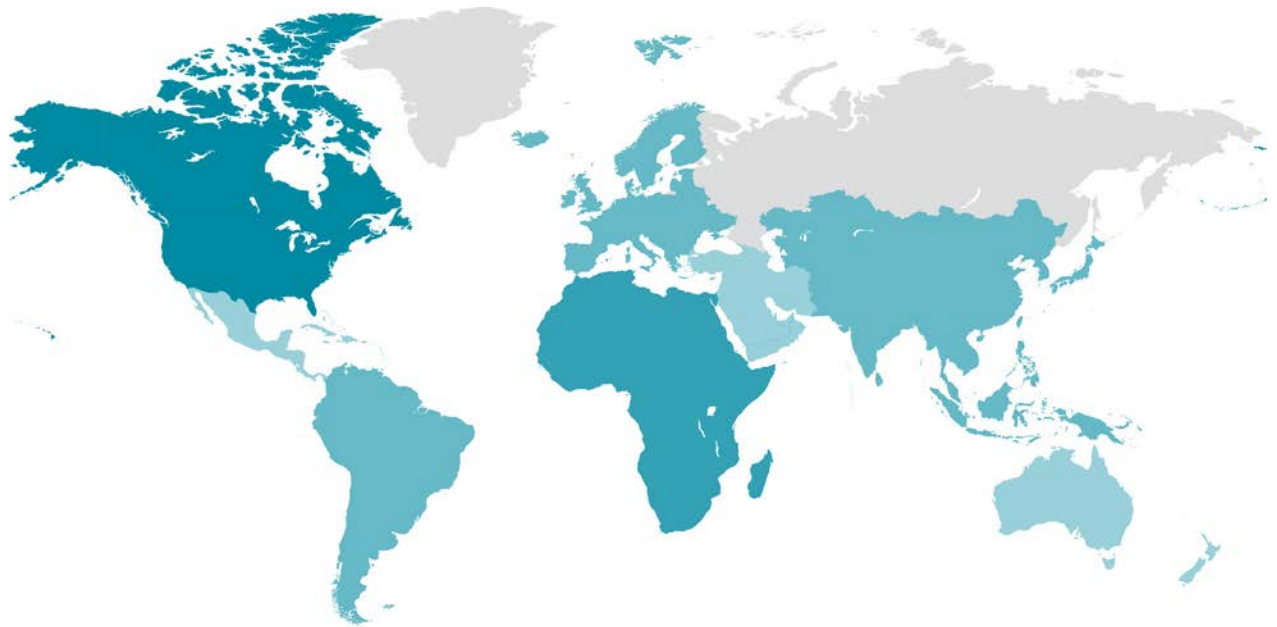
19" Rack Mount Bracket, 1RU High, holds 2 CWDM Modules

*Note: 1310nm Channel is wideband (+/-50nm)

Other channel configurations may be available upon request.

Global Presence

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