Transition Networks Catalog

Intelligently Transforming Networks

TRANSITION
NETWORKS®

About Transition Networks

Is your network flexible enough to meet rapidly evolving business needs and emerging technologies for business? We help companies advance their networks by providing built-to-perform hybrid fiber/copper network integration solutions that increase bandwidth, extend distance, improve security and simplify management of networks. We transition networks to perform better, quicker, and more securely.

We are known for delivering high quality products and exceptional customer service to distributors, integrators and end users in over 71 countries. We are proud to have long standing relationships with many large distributors. Together, we support integrators, end users, the Federal government, state and local education, and utility customers worldwide.

With over 30 years of experience, Transition Networks, a Minneapolis company, has delivered over three million devices to customers worldwide including 67 of the Fortune 100 companies. Transition Networks is a Communications Systems Inc. company (NASDAQ: JCS).

Transition Networks Stats

- Founded: 1987
- Type: Public company. A Communications Systems Inc. company (NASDAQ: JCS)
- Industry: Data Networking, Information & Communications Technology
- Main Office: Minneapolis, Minnesota, USA
- Countries Serviced: 71
- Employees: 106
- Customers Served: Thousands of customer worldwide including 67 of the Fortune 100 companies
- Devices Distributed: Millions of devices deployed to customers globally
- Customer Acceptance Rating: 99.5%
- Government Approved Supplier: TAA Compliant Products – 96.7% of total products
- Technologies: Fast Ethernet, Gigabit Ethernet, 10Gb Ethernet SFPs, Wireless LAN/WAN connectivity, PoE, Carrier Ethernet, CWDM, NIDs

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Media Converters Product Line Card

Ethernet	Slide-in Card	Stand-Alone	Mini	PoE Stand-Alone	Hardened Stand-Alone	Hardened Mini
10Base-T to 10Base-FL		E-TBT-FRL-05 Series				
10Base-5 AUI to 10Base-T RJ-45		E-TBT-MC05				
Fast Ethernet						
100Base-TX to 100Base-FX	C2110 Series	E-100BTX-FX-06 Series	M/E-TX Series		E-100BTX-FX-05(HT) Series	
Ethernet / Fast Ethernet						
10/100Base-TX to 100Base-FX	C2210 Series	SBFTF Series	M/E-PSW Series	SPOEB Series		M/E-ISW Series
10/100Base-TX to 100Base-FX with OAM/IP-Based Management	C2220 Series	S2220 Series				
10/100Base-TX Fault-Tolerant Redundant Link Protector		SBFTF1010-130				
Gigabit Ethernet						
1000Base-T to 1000Base-SX/LX	C3110 Series	SGETF Series	M/GE-T Series			
Ethernet / Fast Ethernet / Gigabit Ethernet						
10/100/1000Base-T to 1000Base-SX/LX	C3210 Series	SGFEB Series	M/GE-PSW Series	SGPOE Series	SISTG10xx-211-LRT-B Series	M/GE-ISW Series M/GE-ISW-SFP-01-PD
Unidirectional 10/100/1000Base-T to 1000Base-X SFP Slot			M/GE-xSW-SFP-01-xx-UxX Series			M/GE-xSW-SFP-01-xx-UxX Series
10/100/1000Base-T PoE+ PSE to 1000Base-X				SGPAT Series		
100/1000Base-X + 10/100/1000Base-T PoE+				SI-IES-111D-LRT	SI-IES-111D-LRT	
100/1000Base-X + (2) 10/100/1000Base-T PoE+				SI-IES-121D-LRT	SI-IES-121D-LRT	
10/100/1000Base-T to 1000Base-X with 802.3ah OAM/IP-Based Management	C3220 Series	S3220 Series			S3220 Series	
10/100/1000Base-T to 1000Base-X with 802.1ag OAM/IP-Based Management	C3230 Series	S3230 Series				
10 Gigabit Ethernet						
10GBase-T Copper to Fiber	C4120-1048	S4120-1048				
10GBase-X to 10GBase-X + 10/100/1000Base-T with Remote Layer 2 Management	C4221-4848					
Fiber to Fiber Multi-Rate						
SFP to SFP for Data Rates from 100Mbps to 2.5 Gbps	C3100-4040	S3100-4040				
Fiber to Fiber for Data Rates from 100Mbps to 155Mbps		F-SM-MM-02				
Fiber to Fiber for 1000Base-X or 1000Base Fiber Channel		SFMFF1314-220				
SFP+ to SFP+ for Data Rates from 1 Gbps to 11.5 Gbps	C4110-4848	S4110-4848				

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Media Conversion Platform

Media Converters Continued

Ethernet Extenders	Slide-in Card	Stand-Alone	Mini	PoE Stand-Alone	Hardened Stand-Alone	Hardened Mini
10/100/1000Base-X + 1000Base-T RJ-45 or 2-Wire Terminal Block				EO2PSE4052-111 & EO2PD4052-111	EO2PSE4052-111 & EO2PD4052-111	
100/1000Base-X + 1000Base Coax BNC				EOCPSE4020-110 & EOCPD4020-110	EOCPSE4020-110 & EOCPD4020-110	
Ethernet Extender SFP, 1000Base-X, RJ-45					TN-EOT-xx Series	
DS3 - T3/E3						
DS3 – T3/E3 Coax over Fiber	C6210 Series				S6210 Series	
DS1 - T1/E1/J1						
T1/E1 over Fiber	C6010 Series				S6010 Series	
4 x T1/E1/J1 over Fiber	C6110 Series				S6110 Series	
4 x T1/E1/J1 + 10/100 Ethernet over Fiber	C6120 Series				S6120 Series	
Serial						
RS232 Copper to Fiber Media Converter		J/R232 Series				
RS-232/422/485 + (2) 10/100Base-TX Slim					SDSTX3110-121S-LRT	
(4) RS-232/422/485 + (2) 10/100Base-TX					SDSTX3110-124-LRT-B	
PacketBand TDM1						
(1) DB15 + (2) 10/100/1000Base-T + (1) 100/1000Base-X SFP Slot		PB-TDM1-CONTRA Series				
PoE Mid-span Injectors *Note: For more PoE options, view Power-over-Ethernet Products.*						
10/100Base-T 1-Port PoE Mid-Span Injector				MIL-L100i		
10/100/1000Base-T PoE+ Injector				L1000i-at		
10/100/1000Base-T + 10/100/1000Base-T PoE+				SI-IES-1200-LRT	SI-IES-1200-LRT	

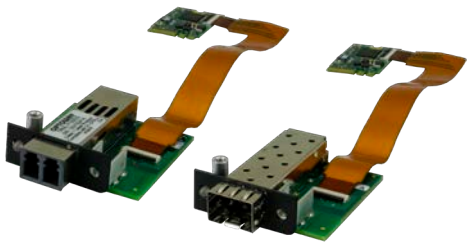
Chassis	Chassis	Accessories	AC Power Supply	DC Power Supply		
1-Slot ION Chassis	ION001-A					
2-Slot ION Chassis	ION002-AD					
6-Slot ION Chassis	ION106		IONPS6-A	IONPS6-D		
19-Slot ION Chassis	ION219		IONPS-A-R1	IONPS-D-R1		
ION Management Module		IONMM Series				
ION Adapter Card		IONADP				
18-Slot Mini Media Converter Chassis	M-MCR-01					
12-Slot Media Converter Rack	E-MCR-05					
4-Slot Media Converter Shelf	RMS19-SA4-02					
2-Slot Shelf for S3290 Series NID	RMS19-NID2-01					

ION219

ION106

Network Adapters Product Line Card

M.2	Fast Ethernet	Gigabit Ethernet	10 Gigabit Ethernet	PoE
100Base-FX for Dell OptiPlex™ 7040/7050 & Wyse 7000	NM2-FXS-2230-SFP-01			
100Base-FX for Dell OptiPlex™ 7070 & 7060/5060/3060 Micro PCs	NM2-FXS-2230-SFP-201			
1000Base-SX/X for Dell OptiPlex™ 7040/7050 & Wyse 7000		NM2-GXE-2230-xx-01 Series		
1000Base-X for Dell OptiPlex™ 7070 & 7060/5060/3060 Micro PCs		NM2-GXE-2230-xx-201 Series		
PCIe				
100Base-FX	N-FXE-xx-02 Series			
1000Base-X and 10/100/1000Base-T PoE+		N-GXE-PoE-xx-01 Series		X
1000Base-SX with Windows 10 Support and Wake-on-LAN		N-GXE-xx-02 Series		
(2) 1000Base-X/10GBase-SR/LR SFP+			N-TGE-SFP-02	
USB				
100Base-FX	TN-USB-FX-01 Series			
1000Base-SX		TN-USB3-SX-01 Series		



NM2-GXE-2230-xx-201 Series

TN-USB3-SX-01 Series

N-TGE-SFP-02

N-GXE-POE-xx-01 Series

Switches Product Line Card

Enterprise

Gigabit Ethernet	7 or Less Ports	8 to 12 Ports	13-18 Ports	19 or More Ports	Managed	PoE	PoE+	PoE++	APR
(2) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Slots	LIB-304				X				
(4) 10/100/1000Base-T Ports + (1) 100/1000Base-X SFP slots + (1) LTE Modem	N2E-ATLAS Series				X				
(2 or 4) 10/100/1000Base-T Ports + (4 or 2) 100/1000Base-X SFP slots	S3290 Series				X				
(2 or 4) 10/100/1000Base-T Ports + (4 or 2) 100/1000Base-X SFP slots	LIB-306 Series				X				
(4) 10/100/1000Base-T Ports + (4) 100/1000Base-X SFP Slots		SM4T4DPA			X				
(8) 10/100/1000Base-T Ports		S8TB							
(8) 10/100/1000Base-T Ports + (2) 100/1000 SFP Slots		SM8TAT2SA			X	X	X		X
(8) 10/100/1000Base-T Ports + (2) 100/1000 SFP Slots, DC-Powered		SM8TAT2SA-DC			X	X	X		X
(8) 10/100/1000Base-T Ports + (2) 100/1000 SFP/RJ-45 Ports		SM10T2DPA			X				
(12) 100/1000Base-X SFP Slots + (2) 1G/10GBase-X SFP+ Slots + (2) 10/100/1000Base-T RJ-45 Ports			SM12DP2XA		X				
(16) 10/100/1000Base-T Ports + (2) 100/1000 SFP Slots			SM16TAT2SA		X	X	X		X
(24) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP/RJ-45 Combo Ports				SM24TBT2DPA	X	X	X	X	X
(24) 10/100/1000Base-T Ports + (2) 100/1000 SFP Slots				SM24TAT2SA	X	X	X		X
(20) 10/100/1000Base-T Ports + (4) 100/1000 SFP/RJ-45 Combo Ports + (2) 100/1000 SFP Slots				SM24T6DPA	X				
(20) 100/1000Base-X SFP Slots + (4) 100/1000Base SFP/RJ-45 Combo Ports + (4) 1G/10GBase-X SFP+ Slots				SM24DP4XA	X				
(24) 100/1000Base-X SFP Slots + (4) 10GBase-X SFP+ Slots				LIB-4424 Series	X				
(24) 10/100/1000Base-T Ports + (4) 1G/10GBase SFP+ Slots				SM24TAT4XB	X	X	X		X
(48) 10/100/1000Base-T Ports + (4) 1G/10GBase SFP+ Slots				SM48TAT4XA-RP	X	X	X		X

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SM8TAT2SA, SM16TAT2SA, SM24TAT2SA

SM48TAT4XA-RP

Note: APR - Auto Power Reset - is a unique feature offered on our PoE Devices to remotely reboot and power-cycle unresponsive PoE powered devices, saving time and money.

Switches Continued

Hardened

Fast Ethernet	7 or Less Ports	8 to 12 Ports	13-18 Ports	19 or More Ports	Managed	PoE	PoE+	PoE++	APR
(16) 10/100Base-TX Ports + (2) 10/100/1000Base-T Ports or (2) 100/1000Base-X SFP Combo Ports			SISTM1040-262D-LRT-B		X				
Gigabit Ethernet									
(4) 10/100/1000Base-T PoE++ Ports + (1) 10/100/1000Base-T or 100/1000Base-X SFP/RJ-45 Combo Port	SESPM1040-541-LT-xx Series				X	X	X	X	X
(4) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Slots	SISTG1040-242-LRT								
(4) 10/100/1000Base-T PoE+ Ports + (2) 100/1000Base-X SFP Slots	SISTP1040-342-LRT					X	X		
(4) 10/100/1000Base-T PoE+ Ports + (2) 10/100/1000Base-T RJ-45 Ports + (2) 100/1000Base-X SFP Slots		SISPM1040-362-LRT			X	X	X		X
(8) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Slots		SISTG1040-282-LRT							
(8) 10/100/1000Base-T PoE+ Ports + (2) 100/1000Base-X SFP Slots		SISTP1040-382-LRT				X	X		
(8) 10/100/1000Base-T PoE+ Ports + (2) 100/1000Base-X SFP Slots, Low Voltage Input		SISTP1040-382B-LRT				X	X		
(8) 10/100/1000Base-T PoE++ Ports + (2) 100/1000Base-X SFP Slots		SISPM1040-582-LRT			X	X	X	X	X
(8) 10/100/1000Base-T Ports + (4) 100/1000Base-X SFP Slots		SISGM1040-284-LRT			X				
(8) 10/100/1000Base-T PoE+ Ports + (4) 100/1000Base-X SFP Slots		SISPM1040-384-LRT-C			X	X	X		X
10 Gigabit Ethernet									
(16) 10/100/1000Base-T PoE+ Ports + (4) 100/1000Base-X SFP Slots + (4) 1G/10GBase-X SFP+ Slots			SISPM1040-3166-L		X	X	X		X
(24) 10/100/1000Base-T PoE+ Ports + (4) 100/1000Base-X SFP Slots + (4) 1G/10GBase-X SFP+ Slots				SISPM1040-3248-L	X	X	X		X
Outdoor Cabinet Assembly									
18 x 16 x 10” Polycarbonate Enclosure for Outdoor Switches		OCA-P181610							

SISPM1040-362-LRT & SISPM1040-384-LRT-C

SISPM1040-3248-L

SISPM1040-582-LRT

SFPs Product Line Card

Duplex

Fast Ethernet		Fiber Type	Compatability	Hardened	Distance	CWDM Wavelength
100Base-FX multimode (LC)	TN-JX-GE-100FX	MM	Juniper		2KM	
100Base-FX/OC-3 multimode (LC) with DMI	TN-SFP-OC3M Series	MM	MSA		500m - 2KM	
100Base-FX (LC)	TN-GLC-FE-100xX Series	MM / SM	Cisco	X	10KM - 120KM	
100Base-FX/OC-3 single mode (LC) with DMI	TN-SFP-OC3Sx Series	SM	MSA		20KM - 80KM	
100Base-FX/OC-3 single mode (LC) with DMI	TN-SFP-OC3S8-Cxx Series	SM	MSA		80KM	X
Gigabit Ethernet						
1000Base-SX multimode (LC)	TN-SFP-SX Series	MM	MSA		220/550m	
1000Base-SX multimode (LC)	TN-GLC-SX-MM Series	MM	Cisco	X	220m - 2KM	
1000Base-X (LC)	TN-EX-SFP-1GE Series	MM / SM	Juniper		220m - 10KM	
1000Base-X (LC)	TN-J48xxC Series	MM / SM	HP		220m - 80KM	
1000Base-X (LC) with DMI	TN-SFP-GE-x Series	MM / SM	Cisco	X	220m - 80KM	
1000Base-X (LC) with DMI with Conformal Coating	TN-SFP-GE-x-C Series	MM / SM	Cisco	X	220m - 80KM	
1000Base-SX multimode (LC) with DMI	TN-SFP-ESXx Series	MM	MSA		2KM	
1000Base-LX single mode (LC)	TN-GLC-LH-SM Series	SM	Cisco	X	10KM - 40KM	
1000Base-LX single mode (LC)	TN-SFP-LX Series	SM	MSA	X	10KM - 200KM	
1000Base-LX/ZX Fiber Channel single mode (LC) with DMI	TN-CWDM-SFP-1xx0-40 Series	SM	Cisco		40KM	X
1000Base-LX/Fiber Channel 1x single mode (LC) with DMI	TN-SFP-LX8-Cxxx Series	SM	MSA	X	80KM	X
1000Base-LX/ZX Fiber Channel single mode (LC) with DMI	TN-CWDM-SFP-1xx0 Series	SM	Cisco		80KM	X
1000Base-LX single mode (LC) with DMI	TN-GLC-ZX-SM Series	SM	Cisco	X	80KM - 150KM	
1000Base-LX/Fiber Channel 1x single mode (LC) with DMI	TN-SFP-LX16-Cxx Series	SM	MSA		160KM	X
Gigabit Ethernet / 10 Gigabit Ethernet						
10GBase-X/1000Base-X, SFP+ with DMI single mode (LC)	TN-10GSFP-LRxM Series	SM	MSA		10KM-80KM	
10GBase-ZR/1000Base-ZX, SFP+ with DMI single mode (LC)	TN-10GSFP-LR8M-Cxx Series	SM	MSA		80KM	X

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

TN-JX-GE-100FX

TN-GLC-FE-100FX

TN-CWDM-10G-1xx0-40

SFPs Continued

10 Gigabit Ethernet		Fiber Type	Compatability	Hardened	Distance	CWDM Wavelength
10GBase-SR/1000Base-SX, SFP+ With DMI Multimode (LC)	TN-10GSFP-SRM	MM	MSA		33m - 300m	
10GBase-X, SFP+ with DMI (LC)	TN-10GSFP-xRx Series	MM / SM	MSA	X	33m - 10KM	
10GBase-X, SFP+ with DMI (LC) for HP X130	TN-JD09xB Series	MM / SM	HP		220m - 10KM	
10GBase-X, SFP+ with DMI (LC) for HP X132	TN-J915xA Series	MM / SM	HP		220m - 40KM	
10GBase-X, SFP+ with DMI (LC)	TN-SFP-10G-xR Series	MM / SM	Cisco		220m - 80KM	
10GBase-LR/LW/10G Fiber Channel, SFP+ with DMI single mode (LC)	TN-CWDM-10G-1xx0-40 Series	SM	Cisco		40KM	X
XFP, 10GBase-ER/10G Fiber Channel single mode (LC) with DMI	TN-XFP-LR4-Cxx Series	SM	MSA		40KM	X
10GBase-ER/ZR or 1000Base-LX/ZX, SFP+ With DMI Single Mode (LC)	TN-10GSFP-LRxM-Dxx Series	SM	MSA		40KM - 80KM	DWDM
10GBase-LR/LW/10G Fiber Channel, SFP+ with DMI single mode (LC)	TN-CWDM-10G-1xx0-80 Series	SM	Cisco		80KM	X
10 Gigabit Ethernet / 25 Gigabit Ethernet						
10G/25GBase-X, SFP28 with DMI (LC)	TN-SFP-xx25G-xR-S Series	MM / SM	Cisco		100m - 10KM	
40 Gigabit Ethernet						
QSFP+ 40GBase-X with DMI	TN-QSFP-40G Series	MM / SM	Cisco		100m - 30KM	
100 Gigabit Ethernet						
QSFP+ 100GBase-X with DMI	TN-QSFP-100G Series	MM / SM	Cisco		70m - 10KM	
Simplex						
Fast Ethernet						
100Base-FX multimode (SC) with DMI	TN-SFP-OC3MB Series	MM	MSA		2KM	
100Base-BX single fiber single mode (LC)	TN-GLC-FE-100BX Series	SM	Cisco		10KM - 40KM	
100Base-FX/OC-3 single fiber single mode (LC) with DMI	TN-SFP-OC3SB Series	SM	MSA		20KM - 200KM	
Gigabit Ethernet						
1000Base-SX multimode (LC) with DMI	TN-SFP-SXB Series	SM	MSA		500m	
1000Base-LX/100Base-FX single fiber (LC / SC) with OTDR	Ax6-155G1-xU-NE Series	SM	MSA		40KM	
1000Base-BX single fiber single mode (LC) with DMI	TN-GLC-BX Series	SM	Cisco		10KM - 120KM	
1000Base-LX single fiber single mode (LC) with DMI	TN-SFP-LXB Series	SM	MSA	X	10KM - 80KM	
10 Gigabit Ethernet						
10GBase-X, SFP+ With DMI, Single Fiber Single Mode (LC)	TN-SFP-10G-x-xx Series	SM	Cisco		220m - 80KM	

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

TN-10GSFP-LRxM Series

TN-QSFP-100G Series

TN-QSFP-40G Series

SFPs & CWDM Mux/Demux Product Line Card

Copper

Fast Ethernet		Compatability	Hardened	Distance
100Base-TX (RJ-45)	TN-SFP-TX	MSA		100m
Gigabit Ethernet				
1000Base-T (RJ-45)	TN-GLC-T Series	Cisco		100m
1000Base-T (RJ-45)	TN-SFP-GE-T	Cisco	X	100m
10/100/1000Base-T (RJ-45)	TN-SFP-T-MG	MSA		100m
10 Gigabit Ethernet				
10GBase-T (RJ-45)	TN-SFP-10G-T	Cisco		30m

CWDM Mux/Demux

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

TN-GLC-T Series

TN-SFP-TX

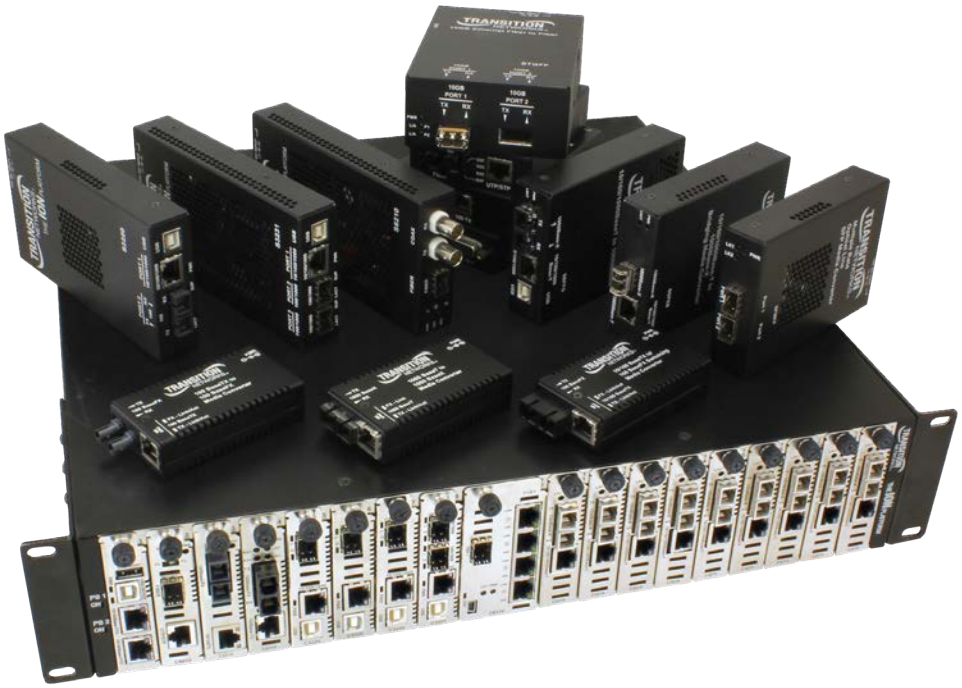
CWDM-M551LCR-B & CWDM-M947LCR-B

Fiber Integration Technology that Leverages Existing Network Infrastructure for Future Growth

Transition Networks' full line of feature-rich media converters transparently connect one type of media, or cabling, to another – typically copper to fiber. By bridging the gap between legacy copper infrastructures and fiber growth, our media converters provide an economical path towards extending the distance of an existing network, extending the life of non-fiber based equipment, or extending the distance between two like devices.

Available in stand-alone or modular chassis-based configurations, Transition Networks' media converters offer copper to fiber and fiber to fiber media conversion in the following supported protocols: Ethernet, Fast Ethernet, Gigabit Ethernet, 10 Gigabit Ethernet, Power-over-Ethernet, 10/100, 10/100/1000, DS1 - T1/E1, DS3- T3/E3, POTS, RS232, RS485 and more.

With industry leading advanced features such as Auto-Negotiation, Auto-MDI/MDIX, Link Pass Through, Active Link Pass Through, Far End Fault, and Automatic Link Restoration – Transition Networks' media converters make an invisible component in the physical layer "visible" to network managers; allowing more efficient troubleshooting and less on-site maintenance. These cost and time saving features have made Transition Networks' media converters the #1 choice among industry IT professionals.



19-Slot Chassis for ION Slide-in Modules

The ION219 is an intelligent, high-density, multi-protocol system supporting a variety of network interface devices. Designed for both carrier class and enterprise network applications where multiple points of fiber integration and secure network management of the fiber interface devices is essential. An end-to-end fiber integration solution can be achieved by pairing the modules in a high density ION chassis with the modules in another ION chassis, or a Transition Networks' stand-alone device. To take full advantage of all the features and functions available with the ION Chassis, an ION Management Module is required. The ION Management Module connects to the chassis backplane and communicates with the individual cards in the ION Chassis. Each slide-in module for the ION Chassis has specific features and functions that are controlled via the ION Management Module. A network administrator can configure, monitor and troubleshoot ION slide-in modules remotely via the ION Management Module.

Transition Networks understands that no network is managed in the same manner and that different security levels and management interfaces are often required depending on the deployment of the ION Chassis. With that in mind, the ION Platform has been designed to be one of the most versatile and secure fiber integration systems available today.

Security Features

When the optional management module is used, the following security features are available, allowing you to control access to the ION Chassis via the ION Management Module, ensuring that only authorized personnel are able to view and change the settings to the slide-in modules.

- Management VLAN
- SSL
- SSH
- IEEE 802.1X
- SNMPv1 & V2c, +V3

Management Features

- Variety of management access methods including; telnet, web, SNMP
- Single slot management module design allows for more slide-in modules to be inserted in the ION Chassis
- Management VLAN
- Based on Public MIBs
- (2) 10/100 Ethernet interfaces
- USB console port
- TFTP upgrade/backup of slide-in modules
- Import/Export configuration files in human readable/editable format
- Multiple community strings

Specifications

Slots	(19) Slots in front for ION slide-in modules (2) Slots in rear for power supply modules
Status LEDs	Power On LED for each installed power supply module
Dimensions	Width: 17" [430 mm] Depth: 15.8" [401 mm] Height: 3.5" [89 mm]
Power Consumption	Up to 150 watts
Power Input	*Two open bays for ION power supply modules supporting: AC: 100 - 240VAC DC: -48VDC
Power Output	12VDC rated at 200 Watts (max)
Environment	Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	19 lbs. [8.6 kg]
MTBF	ION219-A: Greater than 23,570 Hours (MIL-HDBK-217F) Greater than 64,800 Hours (Bellcore) ION219-D: Greater than 42,900 Hours (MIL-HDBK-217F) Greater than 118,000 Hours (Bellcore)
Certifications	UL listed, EN55022, EN55024, CE Mark, FCC Class A, CISPR Class A
Warranty	Lifetime

*Note: Power supply module supplies +12 VDC maximum to each slot in the chassis. Only one power supply module is required to power the chassis and the installed modules, the optional second power supply module provides redundancy for instant fail-over.

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: ION219-A-NA
Note: Only for ION219-A and ION219-AAMB
-NA = Country Code
-NA = North America, -LA = Latin America , -EU = Europe, -UK = United Kingdom -SA = South Africa, -JP = Japan, -OZ = Australia, -BR = Brazil

Ordering Information

ION219-A
19-Slot Chassis for the ION Platform with (1) AC Power Supply

ION219-D
19-Slot Chassis for the ION Platform with (1) DC Power Supply

ION219-AAMB
19-Slot Chassis for the ION Platform with (2) AC power supplies and (1) ION Management Module

Optional Accessories

IONPS-A-R1
ION Power Supply Module
Universal Input 100 - 240 VAC

IONPS-D-R1
-48 VDC Power Supply Module

IONMM
ION Management Module

IONFP
ION Face Plate (required for all empty slots)
(10 face plates included with the ION219)

WMBC-2RU
Wall mount brackets for 2RU Chassis

IONRE-23
ION 23" Rack Mount Ears for ION 19-Slot Chassis (19" ears included with the ION219)

Access Method

- Web-browser: Access the ION Management Module using a standard web browser
- Command Line Interface (CLI): CLI access can be done via telnet remotely or via the local console port on the ION Management Module
- SNMP: Since the ION platform is based on public MIBs you can easily manage the ION with a standard network management system (NMS) such as SNMPc, HPOV or any other standard SNMP platform
- Focal Point: Transition Networks offers a free SNMP graphical user interface (GUI) software for management purposes. Focal Point offers full read and read/write capabilities in a user friendly GUI

6-Slot Chassis for ION Slide-in Modules

The ION106 is an intelligent, multi-service integration platform that offers first-rate solutions for integrating, optimizing and navigating networks, all in a 19" rack mountable 1RU form factor.

By cost-effectively integrating copper-based equipment into a fiber infrastructure, the ION Platform equips networks for the bandwidth, distance, and security demands of today, tomorrow, and every point in between. Designed for service providers, data centers, and core network applications, the ION Platform provides the secure network management of fiber interface points required for both carrier-class and enterprise-class services.

Media conversion technology allows for the integration of fiber optic cabling into environments with copper-based equipment. Transition Networks' ION media converters provide a quick, inexpensive method for connecting new or embedded fiber with copper-based networking devices. The ION Platform accommodates a variety of modules and interface devices supporting multiple protocols and networking environments, including Ethernet and TDM networks. With optimum flexibility built in, ION is equally suited for either single-unit network edge or high-density applications within enterprises or central offices. The ION Platform provides simple navigation of all the connected network interfaces, allowing various components to be easily configured, monitored and managed remotely while providing a high level of secure access to the management data. Transition Networks' ION solutions allow users to easily integrate copper and fiber in order to extend networks within a building, between buildings, or throughout a campus where multiple points of fiber integration and secure network management of the fiber interface devices is essential.

An end-to-end fiber integration solution can be achieved by pairing the modules in an ION chassis with the modules in another ION chassis or an ION stand-alone device. To take full advantage of all the features and functions available with the ION Chassis, an ION Management Module is required. The ION Management Module connects to the chassis backplane and communicates with the individual cards in the ION Chassis. Each slide-in module for the ION Chassis has specific features and functions that are controlled via the ION Management Module. A network administrator can configure, monitor and troubleshoot ION slide-in modules remotely via the ION Management Module.

Ordering Information

ION106-A
6-Slot ION Chassis with (1) AC power supply

ION106-D
6-Slot ION Chassis with (1) DC power supply

ION106-AAB
6-Slot ION Chassis with (2) AC power supplies

ION106-AAMB
6-Slot ION Chassis with (2) AC power supplies and (1) ION Management Module

Optional Accessories

IONPS6-A
Redundant ION Power Supply Module for ION 6-Slot Chassis, Universal input 100 – 250 VAC

IONPS6-D
Redundant ION Power Supply Module for ION 6-Slot Chassis, -21 to -72VDC and +21 to +72VDC input

IONMM
ION Management Module

IONFP
ION Face Plate (required for all empty slots) (4 face plates included with the ION106)

IONRE6-23
23" Rack Mount Ears for ION 6-Slot Chassis (19" ears included with the ION106)

Management Features

- Variety of management access methods including; telnet, web, SNMP
- The single slot management module design allows for more slide-in modules to be inserted in the ION Chassis
- Management VLAN
- Based on Public MIBs
- (2) 10/100 Ethernet interfaces
- USB console port
- TFTP upgrade/backup of slide-in modules
- Import/Export configuration files in human readable/editable format
- Multiple community strings

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: ION106-A-NA
Note: Only for ION106-A, ION106-AAB, and ION106-AAMB

-NA = Country Code
-NA = North America, -LA = Latin America, -EU = Europe, -UK = United Kingdom-SA = South Africa, -JP = Japan, -OZ = Australia, -BR = Brazil

Specifications

Slots	(6) Slots in front for ION slide-in modules (2) Slots in front for power supply modules
Status LEDs	Power On LED for each installed power supply module
Dimensions	Width: 17" [430 mm] Depth: 10" [254 mm] Height: 1.75" [44.45 mm]
Power Consumption	10 Watts
Power Supply	*Two open bays for ION 6-slot power supply modules supporting: AC: 100-240VAC DC: -21 to -72VDC and +21 to +72VDC
Environment	Operating: 0°C to 50°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Shipping Weight	10 lbs. [4.5 kg]
MTBF	No power supply: Greater than 250,000 Hours (MIL-HDBK-217F) Greater than 687,500 Hours (Bellcore) 1 power supply: Greater than 165,000 hrs. (Bellcore) 2 power supplies: Greater than 82,500 hrs. (Bellcore)
Certifications	UL listed, EN55022 Class A, EN55024, CE Mark, FCC Class A, CISPR Class A
Warranty	Lifetime

*Note: Power supply module supplies +12VDC maximum to each card slot in the chassis. Only one power supply module is required to power the chassis and the installed modules, the optional second power supply module provides redundancy for instant fail-over.

Security Features

When the optional management module is used, the following security features are available, allowing you to control access to the ION Chassis via the ION Management Module, ensuring that only authorized personnel are able to view and change the settings to the slide-in modules.

- Management VLAN
- SSL
- SSH
- IEEE 802.1X
- SNMPv1 & V2c, +V3

Access Method

- Web-browser: Access the ION Management Module using a standard web browser
- Command Line Interface (CLI): CLI access can be done via telnet remotely or via the local console port on the ION Management Module
- SNMP: Since the ION platform is based on public MIBs you can easily manage the ION with a standard network management system (NMS) such as SNMPc, HPOV or any other standard SNMP platform
- Focal Point: Transition Networks offers a free SNMP graphical user interface (GUI) software for management purposes. Focal Point offers full read and read/write capabilities in a user friendly GUI

1-Slot and 2-Slot Chassis for ION Modules

ION001-A

ION002-AD

The ION Platform consists of a 19-slot, 6-slot, 2-slot, and 1-slot chassis, along with a variety of slide-in media converter modules. The higher density chassis are designed for core network and Data Center applications where there is a need for high volume and centralized points of media conversion. While at the network edge, the 1-slot and 2-slot ION chassis' are designed to allow a single card, two cards, or one double-wide card to be deployed as a stand-alone media converter.

Ordering Information

ION001-A
1-Slot Chassis for the ION Platform
AC Powered

ION002-AD
2-Slot Chassis for the ION Platform with AC or DC power options

Optional Accessories (sold separately)

IONFP
ION Blank Face Plate

WMBP
Wall Mount Bracket: 5" [127 mm]

WMBD
DIN Rail Mount Bracket

Features

- Desktop installation
- Supports WMBP wall mount brackets
- Unmanaged Chassis
- Supports any ION slide-in card that consume 6 Watts or less of power (C4120-1048 is not supported in either chassis, C4221-4848 is not supported in the 2-Slot Chassis)
- Fan-less design
- External AC power
- DC power input is an option on the 2 slot chassis
- Support IP addressable managed ION slide-in cards

Specifications

Slots	ION001-A ION002-AD	(1) Slot in front for ION slide-in modules (2) Slot in front for ION slide-in modules
Status LEDs		None, Power indicator is on the slide-in card
Dimensions	ION001-A ION002-AD	Width: 4" [102 mm] Depth: 7.1" [180 mm] Height: 1.2" [30.48 mm] Width: 4" [102 mm] Depth: 7.1" [180 mm] Height: 2.2" [55.88 mm]
Power Supply	ION001-A ION002-AD	External AC/DC power supply included, 120-240VAC input, 12VDC Output External AC/DC power supply included, 120-240VAC input, 12VDC Output or an optional two-wire 21-60 VDC input terminal block
Environment		Operating: 0°C to 50°C Storage: -40°C to +85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight		ION001-A: 2 lbs. [0.9 kg] ION002-AD: 3 lbs. [1.35 kg]
MTBF	ION001-A ION002-AD	With Power Supply: 191,800 hours (MIL-HDBK-217F) 527,500 hours (Bellcore7 V5.0) Without Power Supply: 5,600,000 hours (MIL-HDBK-217F) 15,500,000 hours (Bellcore7 V5.0) With Power Supply: Greater than 191,800 Hours (MIL-HDBK-217F) Greater than 527,500 Hour (Bellcore) Without Power Supply: Greater than 4,700,000 Hours (MIL-HDBK-217F) Greater than 13,000,000 Hours (Bellcore)
Certifications		UL listed, EN55022, EN55024, CE Mark, FCC Class A, CISPR Class A
Warranty		Lifetime

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: ION001-A-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

AC Power Supply Module For the ION 19-Slot Chassis

The ION Platform is an intelligent, high-density, multi-protocol system supporting a variety of network interface devices. Designed for both carrier class and enterprise network applications where multiple points of fiber integration and secure network management of the fiber interface devices is essential.

The ION 19-slot chassis can support up to two power supply modules which mount in the rear of the chassis. A single power supply can be used to power all the devices installed in the chassis; however the system can be made redundant with the use of a second power supply. In this configuration, the power supplies operate in an instant fail-over mode and can be installed in either an AC or DC powered chassis.

Specifications

Application	Up to 2 power supply modules can be used in the 19-slot ION chassis, ION219-A
Dimensions	Width: 8.3" [211 mm] Depth: 9" [229 mm] Height: 3.4" [86 mm]
Power Consumption	Up to 10 Watts
Power Input	100 – 240 VAC, 47 – 63 Hz, 3.5 A @ 100 VAC, and 120 - 250 VDC
Environment	Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	3.4 lbs. [1.5 kg]
MTBF	Greater than 25,000 hours (MIL-HDBK-217F) Greater than 68,750 hours (Bellcore7 V5.0)
Certifications	UL Listed (UL60950), FCC Class A, CISPR Class A, CE Mark
Warranty	Lifetime

Ordering Information

IONPS-A-R1
Redundant AC Power Supply for 19-Slot ION Chassis

Power Cord Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: IONPS-A-R1-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

DC Power Supply Module For the ION 19-Slot Chassis

The ION Platform is an intelligent, high-density, multi-protocol system supporting a variety of network interface devices. Designed for both carrier class and enterprise network applications where multiple points of fiber integration and secure network management of the fiber interface devices is essential.

The ION chassis can support up to two power supply modules which mount in the rear of the chassis. A single power supply can be used to power all the devices installed in the chassis; however the system can be made redundant with the use of a second power supply. Configuration options include an instant fail-over mode as well as a load-sharing mode.

Specifications

Application	Up to 2 power supply modules can be used in the 19-slot ION chassis, ION219-D
Status LEDs	PWR(Power): Indicates the power supply module is providing power to the ION chassis
Dimensions	Width: 8.3" [211 mm] Depth: 9" [229 mm] Height: 3.4" [86 mm]
Power Input	48 VDC (40-60 VDC) @ 5A
Environment	Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.98 kg]
MTBF	40,00 MIL-HDBK-217F hours 110,000 Bellcore hours
Certifications	UL Listed (UL60950), FCC Class A, CISPR Class A, CE Mark
Warranty	Lifetime

Ordering Information

IONPS-D-R1
Redundant -48 VDC Power Supply Module for 19-Slot ION Chassis

Optional Accessories (sold separately)

IONDCR-R1
Dry contact relay module for DC Power Supply - See Below

IONDCR-R1

Dry Contact Relay Module

The IONDCR-R1 is a field installable dry contact relay module for the IONPS-D-R1 power supply. This module mounts in the lower right-hand corner of the IONPS-D-R1 face-plate, allowing the power supply to be tied into a separate alarm circuit. Contacts will be activated on the loss of power, enabling an external visual or audible alarm.

Applications for this type of fault alarm output would include enterprise networks as well as in industrial applications. The dry contact relay modules provides another layer of fault indicators, complementing network management software by providing a signal to either a local or remote alarm system.

Ordering Information

IONDCR-R1
Dry contact relay module for DC Power Supply

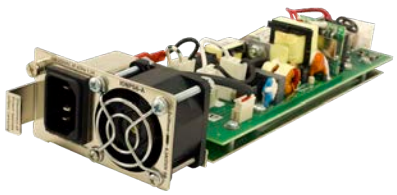
Specifications

MTBF

Greater than 250,000 Hours (MIL-HDBK-217F)

Greater than 687,500 Hours (Bellcore)

AC Power Supply Module for the ION 6-Slot Chassis



The IONPS6-A is a redundant AC power supply module for use in the ION106 chassis, which is an intelligent, multi-service integration platform that offers first-rate solutions for integrating, optimizing and navigating networks. By cost-effectively integrating copper-based equipment into a fiber infrastructure, the ION Platform equips networks for the bandwidth, distance, and security demands of today, tomorrow, and every point in between. Designed for service providers, data centers, and core network applications, the ION Platform provides the secure network management of fiber interface points required for both carrier-class and enterprise-class services.

The ION 6-Slot Chassis can support up to two hot-swappable power supply modules which mount in the front of the chassis. A single power supply can be used to power all of the slide-in modules installed in the chassis, additionally; the system can be made redundant with the use of a second AC or DC power supply. In this configuration, the power supplies operate in an instant fail-over mode.

Management and configuration of the power supply modules is available when the IONMM management module card is installed in the ION106 chassis.

Ordering Information

IONPS6-A
Redundant AC power supply for ION 6-Slot Chassis, 100 to 240 VDC input

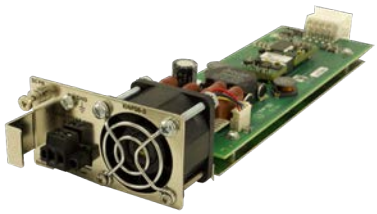
Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: IONPS6-A-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Specifications

Application	Up to 2 power supply modules can be used in the 6-Slot ION Chassis, ION106
Status LEDs	Power On LEDs for each installed power supply module are installed on the frame of the ION106 chassis
Dimensions	Width: 1.63" [41.4 mm] Depth: 3" [76.2 mm] Height: 9.75" [247.7 mm]
Power Input	100-240 VAC, 47-63 Hz, 1.2A, and 120 - 300 VDC
Environment	Operating: 0°C to 50°C Storage: -40°C to 70°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft. (with de-rating)
Weight	0.94 lbs. [0.43 kg]
MTBF	Greater than 65,000 Hours (MIL-HDBK-217F) Greater than 178,750 Hours (Bellcore)
Certifications	UL listed, EN55022 Class A, EN55024, CE Mark, FCC Class A, CISPR Class A
Warranty	Lifetime

DC Power Supply Module for the ION 6-Slot Chassis



The IONPS6-D is a redundant DC power supply module for use in the ION106 chassis, which is an intelligent, multi-service integration platform that offers first-rate solutions for integrating, optimizing and navigating networks. By cost-effectively integrating copper-based equipment into a fiber infrastructure, the ION Platform equips networks for the bandwidth, distance, and security demands of today, tomorrow, and every point in between. Designed for service providers, data centers, and core network applications, the ION Platform provides the secure network management of fiber interface points required for both carrier-class and enterprise-class services.

The ION 6-Slot Chassis can support up to two hot-swappable power supply modules which mount in the front of the chassis. A single power supply can be used to power all of the slide-in modules installed in the chassis, additionally; the system can be made redundant with the use of a second AC or DC power supply. In this configuration, the power supplies operate in an instant fail-over mode.

Management and configuration of the power supply modules is available when the IONMM management module card is installed in the ION106 chassis.

Ordering Information

IONPS6-D
Redundant DC power supply for ION 6-Slot Chassis, -21 to -72 VDC and +21 to +72 VDC input

Specifications

Application	Up to 2 power supply modules can be used in the 6-Slot ION Chassis, ION106
Status LEDs	Power On LEDs for each installed power supply module are installed on the frame of the ION106 chassis
Dimensions	Width: 1.63" [41.4 mm] Depth: 3” [76.2 mm] Height: 9.75” [247.7 mm]
Power Input	-21 to -72 VDC and +21 to +72 VDC input
Environment	Operating: 0°C to 50°C Storage: -40°C to 70°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft. (with de-rating)
Weight	0.94 lbs. [0.43 kg]
MTBF	Greater than 65,000 Hours (MIL-HDBK-217F) Greater than 178,750 Hours (Bellcore)
Certifications	UL listed, EN55022 Class A, EN55024, CE Mark, FCC Class A, CISPR Class A
Warranty	Lifetime

The ION Management Modules

IONMM

IONMM-232

To take full advantage of the features and functions available with the ION Chassis, an ION Management Module is required. The ION Management Module connects to the chassis backplane and communicates with the individual cards in the ION Chassis. To maintain data security, only management traffic, no end-user data traffic, is sent across the ION Chassis backplane.

Each slide-in module for the ION Chassis has specific features and functions that are controlled via the ION Management Module. A network administrator can configure, monitor and troubleshoot ION slide-in modules remotely via the ION Management Module. This remote management helps reduce Operating Expenses (OpEx) by reducing technician dispatches. Remote management allows for faster mean-time-to-repair (MTTR) by proactively sending traps and alerts on potential issues. With less downtime you are able to focus on the revenue generating aspects of your business.

Transition Networks understands that no network is managed in the same manner and that different security levels and management interfaces are often required depending on the deployment of the ION Chassis. With that in mind, we have made the ION Management Module one of the most versatile and secure management modules available today.

Ordering Information

IONMM
Management Module for the ION Chassis with a USB Type B CLI port

IONMM-232
Management Module for the ION Chassis with a RS232 RJ-45 CLI port

Optional Accessories (sold separately)

Cable-CCC-06
Cisco DB9 to RJ-45 console cable, Blue 6ft.

Features

- Management VLAN
- TLS/SSL
- SSH
- IEEE 802.1X/RADIUS
- SNMPv1 & v2c, and v3
- ACL Rules

Management Features

- Variety of management access methods including; telnet, web, SNMP
- Single slot design allows for more slide-in modules to be inserted in the ION Chassis
- Based on Public MIBs
- (2) 10/100 Ethernet interfaces
- TFTP upgrade/backup of slide-in modules
- Import/Export configuration files in human readable/editable format
- Multiple community strings
- SNTP

Specifications

Standards	IEEE 802.3 IEEE 802.1X
Ports	IONMM: (2) 10/100 Mbps RJ-45 USB 2.0 device port USB 2.0 host port IONMM-232: (2) 10/100 Mbps RJ-45 USB 2.0 device port (1) RS232 RJ-45 host port
Dimensions	Width: 0.86" [22 mm] Depth: 6.5" [165 mm] Height: 3.4" [86 mm]
Power Consumption	2 Watts under normal operation 4.8 Watts with full 2.5 Watts used by USB host port (Example: Flash Drive connected requiring 2.5 Watts)
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
Certifications	EN55022 Class A, EN55024, CE Mark
Warranty	Lifetime

Access Methods

- Web-browser: Access the ION Management Module using a standard web browser
- Command Line Interface (CLI): CLI access can be done via telnet remotely or via the local console port on the ION Management Module
  - Choose between a management module with a USB Type B CLI port or a RS232 RJ-45 CLI port
- SNMP: Since the ION platform is based on public MIBs you can easily manage the ION with a standard network management system (NMS) such as SNMPc, HPOV or any other standard SNMP platform
- Focal Point: Transition Networks offers a free SNMP graphical user interface (GUI) software for management purposes. Focal Point offers full read and read/write capabilities in a user friendly GUI

The ION Adapter

Use to Mount Legacy Point System™ Converter Modules in an ION Chassis

IONADP

The IONADP is an adapter card that allows the ION Platform chassis to be backwards compatible with Point System™ modules. This adapter is designed to sit between a Point System™ module and the backplane of the ION chassis. The purpose of the IONADP is to lengthen the Point System™ module so it can be securely mounted in an ION chassis while also connecting to the backplane allowing the ION chassis to power the Point System™ module.

SNMP management of the Point System™ modules installed in the ION chassis is possible by using an existing Point System™ management module along with IONADP. The ION modules and the Point System™ modules are managed independently by their own respective management modules. The ION management module and the Point System™ management module would each require a unique IP address assigned to them, while Focal Point can be used to access the management information from each management module simultaneously.

Ordering Information

IONADP
Point System™ Adapter for the ION chassis, includes bracket and screws

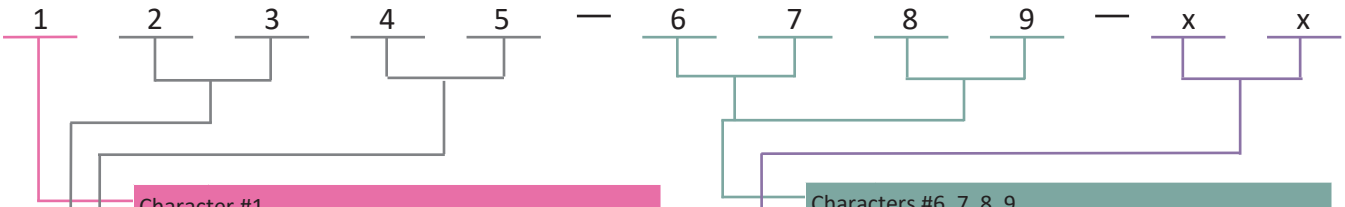
Features

- Ease the installation of legacy Point System™ cards in the ION chassis
- Redeploy Point System™ cards you own in a new ION chassis
- Lengthens a Point System™ card to match the size of the ION card
- Can be used with any Point System™ card
- Manage Point System™ cards in the ION chassis, if you have a Point System™ Management Module
- IONADP kit includes adapter card, bracket, and four screws

Specifications

Dimensions	Width: 0.5” [12.7 mm] Depth: 1.25” [31.75 mm] Height: 2.9” [73.66 mm]
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Storage: -40°C to +85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	0.5 lbs. [0.22 kg]
Warranty	Lifetime

ION Part Number Key



Character #1	
S	Stand-Alone
C	Chassis

Characters #2, 3	
21	100Base Ethernet
22	10/100 Ethernet
31	1000Base Ethernet
32	10/100/1000 Ethernet
41	10GBase Ethernet
42	10/100/1000/10G
60	T1/E1
61	4xT1
62	DS3-T3/E3

Characters #4, 5	
10	Standard Conversion
20	Advanced Management
xx	Unique Identifier

Characters #6, 7, 8, 9	
10	RJ-45
11	Multimode ST
13	Multimode SC
14	Single Mode SC
15	Single Mode SC Long Haul
16	Single Mode SC Extra Long Haul
17	Single Mode SC Long Wave 1550
19	Single Mode LC
24	Extended Multimode SC
29	Single Fiber SC
30	Dual BNC
33	RJ-11
35	Single Mode SC Long Wave 1550 Extended
39	Multimode LC
40	SFP Slot
47	XFP Slot
48	SFP+ Slot

Additional Expandable Characters (xx)	
Part numbers grow as new products with new features or capabilities are designed. For example:	
A1	Single Strand 1310TX/1550RX
A2	Single Strand 1550TX/1310RX

ION Fast Ethernet Media Converter Module

100Base-TX to 100Base-FX

C2110-1013

The ION C2110 is a media converter module that provides an interface between 100Base-TX ports and 100Base-FX ports, allowing users to integrate fiber optic cabling into 100Base-TX copper environments. Operating at Layer 1, the physical layer, data is passed through the converter at line speed, making it ideal for applications where low latency is essential. The ION C2110 is a manageable device when installed in a managed ION chassis.

Features

- Auto-Negotiation of speed and duplex on TP port
- Auto-MDI/MDIX on TP port
- Link Pass Through (LPT)
- Far-End-Fault (FEF) detection
- Automatic Link Restoration
- Pause advertisement
- Field Upgradeable Firmware
- Can be used in any ION Platform Chassis
- Standards based, will link with any Standard 100Base-TX and any Standard 100Base-FX ports

Manageable Features

- Report converter status to chassis management software:
  - TP and Fiber Link Status
  - Hardware switch settings
  - Copper Port Speed
  - TP and Fiber Port Duplex
  - Fault condition
- Write operation includes:
  - Power on/off device
  - Auto-Negotiation enable/disable
  - Force 10 Mbps or 100 Mbps
  - Force half or full-duplex
  - Select advertising modes when Auto-Negotiation is enabled
  - LPT enable/disable
  - FEF enable/disable
  - Pause enable/disable
  - Auto-MDI/MDIX enable/disable

Note: Manageable Features are available when used in an ION Platform chassis along with an ION Management Module.

Specifications

Standards	IEEE 802.3
Data Rate	100 Mbps, Layer 1
Switches	SW1: Auto-Negotiation (UP = enabled) SW2: Pause (UP=enabled) SW3: Link Pass Through (UP = enabled) SW4: Far-End-Fault (FEF) (UP = enabled)
Internal Jumpers	Auto-MDI/MDIX: Enable/Disable
Jumpers	Hardware: Mode of operation is determined by the settings on the 4-position switch Software: Mode of operation is determined by the most recently saved on-board microprocessor settings
Status LEDs	PWR (Power): ON = Connection to powered backplane LKC (Copper Link): ON = Copper Link RXC (Receive Copper): Blinking = Data received on Copper link LKF (Fiber Link): ON = Fiber Link RXF (Receive Fiber): Blinking = Data received on Fiber Link
Dimensions	Width: 0.86" [22 mm] Depth: 6.5" [165 mm] Height: 3.4" [86 mm]
Power Consumption	2.5 Watts, 200 mA @ 13.9 VDC
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
MTBF	Greater than 250,000 hours (MIL-HDBK-217F) Greater than 667,500 hours (Bellcore)
Certifications	CISPR/EN55022 Class A, FCC Class A, CE Mark
Warranty	Lifetime

Ordering Information

C2110-1011
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (ST) [2 km/1.2 mi.] Link Budget: 11.0 dB

C2110-1013
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (SC) [2 km/1.2 mi.] Link Budget: 11.0 dB

C2110-1039
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (LC) [2 km/1.2 mi.] Link Budget: 11.0 dB

C2110-1014
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1310nm single mode (SC) [20 km/12.4 mi.] Link Budget: 16.0 dB

C2110-1019
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1310nm single mode (LC) [20 km/12.4 mi.] Link Budget: 17.3 dB

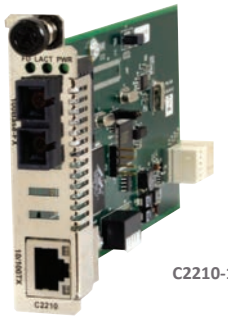
C2110-1040
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-X SFP Slot (empty)

Optional Accessories (sold separately)

SFP Modules

ION Fast Ethernet Media and Rate Converter Module

10/100Base-TX to 100Base-FX



C2210-1013

The ION C2210 is a media converter module that provides an interface between 10/100Base-TX ports and 100Base-FX ports, allowing users to integrate fiber optic cabling into 10/100 copper environments. Operating at Layer 2, the data link layer, this converter not only converts copper to fiber, it also provides rate conversion allowing legacy 10Base-T copper devices to connect to 100Base-FX fiber. The ION C2210 is a manageable device when installed in a managed ION chassis.

Features

- Auto-Negotiation of speed and duplex on TP port
- Auto-MDI/MDIX on TP port
- Link Pass Through (LPT)
- Far-End-Fault (FEF) detection
- Pause (Software Controlled)
- Automatic Link Restoration
- Field Upgradeable Firmware
- Can be used in any ION Platform Chassis
- Standards based, will link with any standard 10/100Base-TX and any standard 100Base-FX ports

Manageable Features

- Report converter status to chassis management software:
  - TP and Fiber Link Status
  - Hardware switch settings
  - Copper Port Speed
  - TP and Fiber Port Duplex
  - Fault condition
- Write operation includes:
  - Power on/off device
  - Auto-Negotiation enable/disable
  - Force 10 Mbps or 100 Mbps
  - Force half or full-duplex
  - Select advertising modes when Auto-Negotiation is enabled
  - LPT enable/disable
  - FEF enable/disable
  - Pause enable/disable
  - Auto-MDI/MDIX enable/disable

Note: Manageable Features are available when used in an ION Platform chassis along with an ION Management Module.

Specifications

Standards	IEEE 802.3u IEEE 802.3x
Data Rate	10 Mbps; 100 Mbps Layer 2
MAC Address Table	1K
Frame Buffer Memory	512 Kbits
Max Frame Size	2048 bytes
Switches	SW1: Auto-Negotiation (UP = enabled) SW2: Forced 100 Mbps/10 Mbps with Auto-Neg. off (UP = 100 Mbps) SW3: Forced Full/Half-Duplex with Auto-Neg. off (UP = Full) SW4: Full/Half-Duplex on fiber port (UP = Full) SW5: Auto-MDI/MDIX on UTP (UP = enabled) SW6: Link Pass Through (UP = enabled)
Internal Jumpers	Auto-MDI/MDIX: Enable/Disable
Jumpers	Hardware: Mode of operation is determined by the settings on the 4-position switch Software: Mode of operation is determined by the most recently saved on-board microprocessor settings
Status LEDs	FD (Fiber Duplex): ON= Full-duplex on fiber LACT (Fiber Link/Activity): ON = Fiber Link PWR (Power):ON=Connection to powered backplane (TP. Duplex/Link): Yellow = Half duplex, Green = Full-Duplex (TP. Speed): Yellow = 10Mbps, Green = 100 Mbps
Dimensions	Width: 0.86" [22 mm] Depth: 6.5" [165 mm] Height: 3.4"[86 mm]
Power Consumption	2.5 Watts, 200 mA @ 13.9 VDC
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
MTBF	Greater than 250,000 hours (MIL-HDBK-217F) Greater than 667,500 hours (Bellcore)
Certifications	CISPR/EN55022 Class A, FCC Class A, CE Mark, EN55024
Warranty	Lifetime

Ordering Information

C2210-1011
10/100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (ST) [2 km/1.2 mi.] Link Budget: 11.0 dB

C2210-1013
10/100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (SC) [2 km/1.2 mi.] Link Budget: 11.0 dB

C2210-1039
10/100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (LC) [2 km/1.2 mi.] Link Budget: 11.0 dB

C2210-1014
10/100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1310nm single mode (SC) [20 km/12.4 mi.] Link Budget: 16.0 dB

C2210-1019
10/100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1310nm single mode (LC) [20 km/12.4 mi.] Link Budget: 17.3 dB

C2210-1040
10/100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-X SFP Slot (empty)

Optional Accessories (sold separately)

SFP Modules

ION Fast Ethernet Remotely Managed NID Module

10/100/1000Base-T to 100Base-FX with OAM/IP-Based Management

C2220-1040

The ION C2220 is a managed Network Interface Device (NID) module that provides an interface between 10/100/1000Base-T ports and 100Base-FX ports, allowing users to manage their links while integrating fiber optic cabling into 10/100/1000 copper environments. As a remotely manged device, the C2220 can be managed individually via an IP address or it can be managed by the ION Management Module when installed in a managed ION chassis. With advanced features like IEEE 802.3ah Link OAM, VLAN, QoS, SSH/SSL, jumbo frame support, and bandwidth allocation, the C2220 provides various methods for secure delivery of Ethernet services in business and mobile backhaul applications.

Ordering Information

C2220-1014
10/100/1000Base-T (RJ-45) [100 m] to 100Base-FX 1310nm single mode (SC) [20 km/12.4 mi.] Link Budget: 16.0 dB

C2220-1040
10/100/1000Base-T (RJ-45) [100 m] to 100Base-X SFP Slot (empty)

Optional Accessories (sold separately)

SFP Modules

*Note all units feature USB port for local management application.

Features

- MEF 9, 14 + 21 certified
- IEEE 802.3ah Link OAM
- 10K Jumbo Frame Support
- Two selectable Remote Management modes:
  - IP-Based Remote Management
  - In-Band (remote device managed by local peer)
- Auto-MDI/MDIX
- Auto-Negotiation
- Pause
- Link Pass Through
- Far-End-Fault (FEF)
- Remote Loopback
- Field Upgradeable Firmware
- IEEE 802.1p QoS Packet Classification
- IEEE 802.1Q VLAN and double VLAN tagging with 4096 VIDs
- DHCP client
- SNTP
- TFTP
- RADIUS client
- RMON counters for each port
- Bandwidth profiling
- DMI Optical Management
- Cable diagnostic function for copper ports

Specifications

Standards	IEEE 802.3 IEEE 802.3ah IEEE 802.1p IEEE 802.1Q
Data Rate	Copper: 10/100/1000 Mbps Fiber: 100 Mbps
Filtering Address	8K MAC Addresses
Max Frame Size	10,240 bytes
Dimensions	Width: 0.86” [22 mm] Depth: 6.5” [165 mm] Height: 3.4” [86 mm]
Power Consumption	4.5 Watts
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
Certifications	EN55022 Class A, EN55024, CE Mark
Warranty	Lifetime

Features Continued

- SSH
- Telnet
- Command Line Interface (CLI)
- Web management
- Focal Point management
- SNMP v1, v2c, and v3
- USB port for basic setup
- Management VLAN

ION Fiber to Fiber Media Converter Module

SFP to SFP for Data Rates from 100Mbps to 2.5 Gbps

The ION C3100 is a fiber to fiber media converter module. It is protocol independent and supports data rates from 100Mbps to 2.5Gbps through two open SFP slots. This any-rate to same-rate converter can be used to perform reliable and cost-effective single mode to multimode fiber conversion or it can be used to provide wavelength conversion in CWDM applications. The ION C3100 is a manageable device when installed in a managed ION chassis.

Ordering Information

C3100-4040
100Mbps to 2.5Gbps fiber repeater with two open SFP slots, any-rate to same-rate. ION Chassis Card media converter

Optional Accessories (sold separately)

SFP Modules

Features

- Protocol Transparent
- Supports data rates from 100Mbps to 2.5Gbps
- Any-rate to same-rate conversion
- SFP to SFP Fiber Repeater
- Specific wavelength CWDM Transponder
- Supported protocols: Fast Ethernet, Gigabit Ethernet, SONET (OC-3/12/48), 1 & 2 Gig Fiber Channel, 2.5G InfiniBand, FDDI, ESCON/SBCON
- DMI, Digital diagnostics statistics available through ION Management Module
- Link Pass Through
- Automatic Link Restoration

Specifications

Standards	Multi-Source Agreement (MSA) Small Form Factor Pluggable (SFP)
Data Rates	Protocol Independent 100Mbps to 2.5 Gbps
Max Frame Size	16384 bytes Jumbo Frames Supported
Status LEDs	PWR ON (Green) = Power Port 1 Link ON = Fiber Signal Detected Port 2 Link ON = Fiber Signal Detected
Dimensions	Width: 0.86" [22 mm] Depth: 6.5" [165 mm] Height: 3.4" [86 mm]
Power Consumption	2-3 Watts, based on the SFP modules used
Power Supply	External AC/DC required: 12VDC
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
MTBF	Greater than 250,000 hours (MIL-HDBK-217F) Greater than 687,000 hours (Bellcore)
Certifications	FCC Class A, EN55022 Class A, EN55024, CE Mark
Warranty	Lifetime

ION Gigabit Ethernet Media Converter Module

1000Base-T to 1000Base-SX/LX

C3110-1013

The ION C3110 is a media converter module that provides an interface between 1000Base-T ports and 1000Base-SX/LX ports, allowing users to integrate fiber optic cabling into 1000Base-T copper environments.

Operating at Layer 1, the physical layer, data is passed through the converter at line speed, making it ideal for applications where low latency is essential. The ION C3110 is a manageable device when installed in a managed ION chassis.

Features

- Copper and Fiber Auto-Negotiation
- Auto-MDI/MDIX on TP port
- Transparent Link Pass Through
- Remote Fault Detect
- Loopback
- Pause
- Automatic Link Restoration
- Field Upgradeable Firmware
- Can be used in any ION Platform Chassis
- Cost effective fiber deployment by pairing C3110 with lower cost 1000Base-T switches, offering the benefits of fiber without the high costs
- Standards based, will link with any standard 1000Base-T and any standard 1000Base-SX or LX ports

Manageable Features

- Report converter status to chassis management software:
  - Copper and Fiber link/receive status
  - Hardware switch settings
  - Receive error count
- Write operation includes:
  - Write operation enable/disable
  - Power on/off device
  - Auto-Negotiation enable/disable
  - Remote Fiber Fault Detect
  - Transparent Link Pass Through enable/disable
  - Pause enable/disable
  - Symmetric Pause
  - Asymmetric TX Pause
  - Asymmetric RX Pause

Note: Manageable Features are available when used in an ION Platform chassis along with an ION Management Module.

Specifications

Standards	IEEE 802.3ab IEEE 802.3z IEEE 802.3 2000
Data Rate	1000 Mbps, Layer 1
Switches	SW1: Remote Fiber Fault Detect SW2: Pause (symmetric) SW3: Pause (asymmetric) SW4: Transparent Link Pass Through (Up=Enabled) SW5: Fiber Auto-Negotiation (Down=Enabled) SW6: Loopback
Jumpers	Hardware: Mode of operation is determined by the settings on the 4-position switch Software: Mode of operation is determined by the most recently saved on-board microprocessor settings
Status LEDs	LKF (fiber link): On = Fiber Link, blinking activity PWR (Power): On = Connection to powered backplane TP LED 1 (Copper Link): On = Link, blinking activity TP LED2 (Copper Duplex): On = Full-Duplex
Dimensions	Width: 0.86" [22 mm] Depth: 6.5" [165 mm] Height: 3.4" [86 mm]
Power Consumption	3.6 Watts, 300mA @ 112 VDC
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
MTBF	Greater than 250,000 hours (MIL-HDBK-217F) Greater than 667,500 hours (Bellcore)
Certifications	CISPR/EN55022 Class A, FCC Class A, CE Mark, EN55024
Warranty	Lifetime

Ordering Information

C3110-1013
1000Base-T (RJ-45) [100 m/328 ft.]
to 1000Base-SX 850nm multimode (SC)
[62.5/125 µm fiber: 220 m/722 ft.]
[50/125 µm fiber: 550 m/1804 ft.]
Link Budget: 8.5 dB

C3110-1039
1000Base-T (RJ-45) [100 m/328 ft.]
to 1000Base-SX 850nm multimode (LC)
via SFP
[62.5/125 µm fiber: 220 m/722 ft.]
Link Budget: 8.0 dB
[50/125 µm fiber: 550 m/1804 ft.]
Link Budget: 8.0 dB

C3110-1014
1000Base-T (RJ-45) [100 m/328 ft.]
to 1000Base-LX 1310nm single mode (SC)
[10 km/6.2 mi.] Link Budget: 10.5 dB

C3110-1040
1000Base-T (RJ-45) [100 m/328 ft.]
to 1000Base-X SFP Slot (empty)

Optional Accessories (sold separately)

SFP Modules

ION Gigabit Ethernet Media and Rate Converter Module

10/100/1000Base-T to 1000Base-SX/LX

C3210-1040

The ION C3210 is a media converter module that provides an interface between 10/100/1000Base-T ports and 1000Base-SX/LX ports, allowing users to integrate fiber optic cabling into 10/100/1000 copper environments. Operating at Layer 2, the data link layer, this converter not only converts copper to fiber, it also provides rate conversion allowing legacy 10/100 copper devices to connect to 1000Base-SX/LX fiber. The ION C3210 is a manageable device when installed in a managed ION chassis.

Features

- Copper and Fiber Auto-Negotiation
- Switch Selectable Speeds
- Auto-MDI/MDIX
- Link Pass Through
- Remote Fault Detect
- Pause
- Automatic Link Restoration
- IEEE 802.1p QoS, IPv4 TOS/DiffServ, IPv6 traffic class
- IEEE 802.1Q Port VLAN, tagging and doubling tagging (Q in Q)
- Field Upgradeable Firmware
- Virtual Cable Test on UTP port
- Unidirectional data transmission
- Bandwidth Allocation
- DMI, digital diagnostics per SFF-8472
- RMON counters for each port
- Can be used in any ION Platform Chassis
- Secure unidirectional transmission
- Standards based, will link with any standard 10/100/1000Base-T and any standard 1000Base-SX or -LX ports

Specifications

Standards	IEEE 802.3 IEEE 802.3ab IEEE 802.3u IEEE 802.3z IEEE 802.1p IEEE 802.1Q
Data Rate	10/100/1000 Mbps; Layer 2
Max Frame Size	10,240 Bytes (jumbo frame support) 1,632 Bytes when linked to an xGFEB10xx-120
Switches	SW1: TP Auto-Negotiation SW2: TP Speed SW3: TP Duplex SW4: Link Pass Through SW5: Fiber Duplex SW6: Unused
Jumpers	Hardware/Software mode, Auto-MDI/MDIX
Status LEDs	PWR (Power): ON = Connection to powered backplane LACT (Fiber Link): ON=Fiber link, Blinking=activity UTP Duplex/Link: Orange=half duplex link, Blinking = half duplex activity, Green = Full duplex link, Blinking =Full duplex activity, Off = 10 Mbps operation (or no link), Orange = 100 Mbps operation, Green = 1000 Mbps operation
Dimensions	Width: 0.86" [22 mm] Depth: 6.5" [165 mm] Height: 3.4" [86 mm]
Power Consumption	3.6 Watts, 300mA @ 12 VDC
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
MTBF	Greater than 250,000 hours (MIL-HDBK-217F) Greater than 667,500 hours (Bellcore)
Certifications	CISPR/EN55022 Class A, EN55024, EN61000, FCC Class A, CE Mark
Warranty	Lifetime

Ordering Information

C3210-1013
10/100/1000Base-T (RJ-45) [100 m]
to 1000Base-SX 850nm multimode (SC)
[62.5/125 µm fiber: 220 m/722 ft.]
[50/125 µm fiber: 550 m/1804 ft.]
Link Budget: 8.5 dB

C3210-1039
10/100/1000Base-T (RJ-45) [100 m/328 ft.]
to 1000Base-SX 850nm multimode (LC)
via SFP
[62.5/125 µm fiber: 220 m/722 ft.]
[50/125 µm fiber: 550 m/1804 ft.]
Link Budget: 8.0 dB

C3210-1014
10/100/1000Base-T (RJ-45) [100 m]
to 1000Base-LX 1310nm single mode (SC)
[10 km/6.2 mi.] Link Budget: 10.5 dB

C3210-1040
10/100/1000Base-T (RJ-45) [100 m]
to 1000Base-X SFP Slot (empty)

Single Fiber Products

C3210-1029-A1
10/100/1000Base-T (RJ-45) [100 m]
to 1000Base-LX 1310nm TX/1550nm RX
single fiber single mode (SC)
[20 km/12.4 mi.] Link Budget: 13.0 dB

C3210-1029-A2
10/100/1000Base-T (RJ-45) [100 m]
to 1000Base-LX 1550nm TX/1310nm RX
single fiber single mode (SC)
[20 km/12.4 mi.] Link Budget: 13.0 dB

Optional Accessories (sold separately)

SFP Modules

ION Gigabit Ethernet Remotely Managed NID Module

10/100/1000Base-T to 1000Base-X with OAM/IP-Based Management

C3220-1040

The ION C3220 is a managed Network Interface Device (NID) module that provides an interface between 10/100/1000Base-T ports and 1000Base-SX/LX ports, allowing users to manage their links while integrating fiber optic cabling into 10/100/1000 copper environments. As a remotely managed device, the C3220 can be managed individually via an IP address or it can be managed by the ION Management Module when installed in a managed ION chassis. With advanced features like IEEE 802.3ah Link OAM, VLAN, QoS, SSH/SSL, jumbo frame support, and bandwidth allocation, the C3220 provides various methods for secure delivery of Ethernet services in business and mobile backhaul applications.

Features

- MEF 9, 14 and 21 certified
- IEEE 802.3ah Link OAM
- 10K Jumbo Frame Support
- Two selectable Remote Management modes:
  - IP-Based Remote Management
  - In-Band (remote device managed by local peer)
- Auto-MDI/MDIX
- Auto-Negotiation
- Pause
- Transparent Link Pass Through
- Far-End-Fault (FEF)
- Remote Loopback
- Field Upgradeable Firmware
- IEEE 802.1p QoS packet classification
- IPv4 IP TOS, DiffServ and IPv6 traffic class QoS classification
- IEEE 802.1Q VLAN and double VLAN tagging with 4096 VIDs
- DHCP client
- SNTP

Specifications

Standards	IEEE 802.3 IEEE 802.3ah IEEE 802.1p IEEE 802.1Q IEEE 802.1X
Data Rate	Copper: 10/100/1000 Mbps Fiber: 1000 Mbps
Filtering Addresses	8K MAC Addresses
Max Frame Size	10,240 bytes
Dimensions	Width: 0.86" [22 mm] Depth: 6.5" [165 mm] Height: 3.4" [86 mm]
Power Consumption	4.5 Watts
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
MTBF	With Power Supply: Greater than 65,000 Hours (MIL-HDBK-217F) Greater than 178,000 Hours (Bellcore) Without Power Supply: Greater than 250,000 Hours (MIL-HDBK-217F) Greater than 687,500 Hours (Bellcore)
Certifications	EN55022 class A, EN55024, CE Mark
Warranty	Lifetime

Ordering Information

C3220-1013
10/100/1000Base-T (RJ-45) [100 m] to 1000Base-SX 850nm multimode (SC) [62.5/125 µm fiber: 220 m/722 ft.] [50/125 µm fiber: 550 m/1804 ft.] Link Budget: 8.5 dB

C3220-1014
10/100/1000Base-T (RJ-45) [100 m] to 1000Base-LX 1310nm single mode (SC) [10 km/6.2 mi.] Link Budget: 10.5 dB

***C3220-1040**
10/100/1000Base-T (RJ-45) [100 m] to (1) 100/1000Base-X SFP Slot (empty)

***C3221-1040**
10/100/1000Base-T (RJ-45) [100 m] to (2) 100/1000Base-X SFP Slots (empty)

Note: all units feature USB port for local management application.

*C3220-1040 and C3221-1040 have SGMII support for use with 10/100/1000Base-T copper SFPs.

Optional Accessories (sold separately)

SFP Modules

USB Cables

Features Continued

- TFTP
- RADIUS client
- RMON counters for each port
- Bandwidth profiling
- DMI Optical Management
- Cable diagnostic function for copper ports
- SSH
- Telnet
- Command Line Interface (CLI)
- Web management
- Focal Point Management
- SNMP v1, v2c, and v3
- USB port for basic setup
- Management VLAN

ION Gigabit Ethernet Remotely Managed NID Module

10/100/1000Base-T to 1000Base-X with OAM/IP-Based Management

C3231-1040

The ION C3230 is a managed multi-service Network Interface Device (NID) module that provides an interface between 10/100/1000Base-T ports and 1000Base-SX/LX ports, allowing users to provide SLA-assurance and advanced fault management while integrating fiber optic cabling into 10/100/1000 copper environments. As a remotely managed device, the C3230 can be managed individually via an IP address or it can be managed by the ION Management Module when installed in a managed ION chassis. With advanced features like IEEE 802.1ag Service OAM, IEEE 802.3ah Link OAM, ITU Y.1731 Performance Monitoring, VLAN, QoS, SSH/SSL, jumbo frame support, and bandwidth allocation, the C3230 provides various methods for secure delivery of business Ethernet and mobile backhaul deployments.

Ordering Information

***C3230-1040**
10/100/1000Base-T (RJ-45) [100 m] to
(1) 100/1000Base-X SFP Slot (empty)

***C3231-1040**
10/100/1000Base-T (RJ-45) [100 m] to
(2) 100/1000Base-X SFP Slots (empty)

Note: all units feature USB port for local management application.

*C3230-1040 and C3231-1040 have SGMII support for use with 10/100/1000Base-T copper SFPs.

Optional Accessories (sold separately)

SFP Modules

USB Cables

Media Converters

Features

- MEF 9, 14 and 21 certified
- IEEE 802.3ah Link OAM
- ITU Y.1731
- IEEE 802.1ag Service OAM
- 10K Jumbo Frame Support
- Two selectable Remote Management modes:
  - IP-Based Remote Management
  - In-Band (remote device managed by local peer)
- Auto-MDI/MDIX
- Auto-Negotiation
- Pause
- Link Pass Through
- Far-End-Fault (FEF)
- Remote Loopback
- Field Upgradeable Firmware
- IEEE 802.1p QoS packet classification
- IPv4 IP TOS, DiffServ and IPv6 traffic class QoS classification
- IEEE 802.1Q VLAN and double VLAN tagging with 4096 VIDs
- DHCP client
- SNTP
- TFTP

Specifications

Standards	IEEE 802.3 IEEE 802.3ah IEEE 802.1p IEEE 802.1Q IEEE 802.1ag
Data Rate	Copper: 10/100/1000 Mbps Fiber: 1000 Mbps
Filtering Address	8K MAC Addresses
Max Frame Size	10,240 bytes
Dimensions	Width: 3.25” [82 mm] Depth: 6.5” [165 mm] Height: 1" [25 mm]
Power Input	100-240 VAC,1A
Power Output	12 VDC, 1.25A
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
Certifications	EN55022 Class A, EN55024, UL60950,CE Mark
Warranty	Lifetime

Features Continued

- RADIUS client
- RMON counters for each port
- Bandwidth profiling
- DMI Optical Management
- Cable diagnostic function for copper ports
- SSH
- Telnet
- Command Line Interface (CLI)
- Web management
- Focal Point Management
- SNMP v1, v2c, and v3
- USB port for basic setup
- Management VLAN

ION Fiber to Fiber Media Converter Module

SFP+ to SFP+ for Data Rates from 1 Gbps to 11.5 Gbps

The C4110 is a fiber to fiber media converter module. It is protocol independent and supports data rates from 1Gbps to 11.5Gbps through two open SFP+ ports. This allows network managers to customize the C4110 with a pair of SFP+ modules to meet their network requirements. The open SFP+ port supports a wide variety of Transition Networks 10Gbps SFP+ fiber modules. This any-rate to same-rate converter can be used to perform reliable and cost-effective single mode to multimode conversion or it can be used to provide wavelength conversion in CWDM applications. The ION C4110 is a manageable device when installed in a managed ION chassis.

Ordering Information

C4110-4848
1 Gbps to 11.5 Gbps fiber repeater with two open SFP+ slots, any-rate to same-rate ION slide-in card media converter

Optional Accessories (sold separately)

SFP or SFP+ Modules

Features

- Fiber to fiber repeater
- Remotely Managed when installed in a Managed ION Chassis
- Supports data rates from 1Gbps to 11.5Gbps
- Support Any-rate to Same-rate
- Protocol Transparent supports:
  - Ethernet: 10Gig LAN, 10Gig Wan, 1Gig LAN
  - Fiber Channel: 10, 8, 4, 2, 1Gig
  - SONET/SDN OC-192, OC-48
- SFP to SFP or SFP+ to SFP+
- Provides conversion between different types of fiber
- Supported transmission distance based on the SFP modules and type of fiber used
- Supports 3R (Reamplify, Reshape, and Retime) signal regeneration
- No frame size limitations
- Use as a fiber mode converter
- Use as a specific wavelength CWDM Transponder
- Also available as a stand-alone converter: S4110-4848

Specifications

Standards	IEEE 802.3ae ITU.G.709 SFF8431 Multi-sourcing Agreement (MSA) Small Form Factor Pluggable (SFP)
TDM Port (T1)	PWR: On = Power Port 1 Link/Act: On = Link, Flashing = Network Traffic Port 2 Link/Act: On = Link, Flashing = Network Traffic
Data Rate	Protocol Independent, 1Gbps to 11.5Gbps
Dip Switches	Only 4 of the 8 Dip Switches are used to select the operational data rate, see the user guide for the supported dip switch configurations
Dimensions	Width: 0.86” [22 mm] Depth: 6.5” [165 mm] Height: 3.4” [86 mm]
Power Consumption	4.2 Watts
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
MTBF	Greater than 250,000 hours (MIL-HDBK-217F) Greater than 687,000 hours (Bellcore)
Certifications	FCC Class A, CE Mark, EN55022 Class A, EN55024
Warranty	Lifetime

ION 10 Gigabit Ethernet Media Converter Module

10GBase-T to 10GBase-X

The C4120 is a media converter module that provides an interface between 10GBase-T ports and 10GBase-X ports via an open SFP+ port, allowing users to convert their 10Gig Ethernet ports to the preferred type of cabling used in their networks. The open SFP+ port supports a wide variety of Transition Networks 10GE SFP+ fiber modules. Operating at Layer 1, the physical layer, data is passed through the converter at line speed, making the C4120 ideal for applications where low latency is essential. The ION C4120 is a manageable device when installed in a managed ION chassis.

Ordering Information

C4120-1048
10GBase-T RJ-45 100m
to 10GBase-X SFP+ Slot (Empty)

Optional Accessories (sold separately)

SFP+ Modules
Supports any SFP+ 10G Modules

Features

- Transparent Link Pass Through
- Auto-Negotiation
- Auto-MDI/MDIX
- Automatic Link Restoration
- Loopback on Fiber and Copper
- DMI
- For use in the ION 19-Slot or 6-Slot Chassis only
- Manageable when installed in a managed ION Chassis
- Remote Firmware Upgrade
  Fiber Port supported standards
  - 10GBase-SR
  - 10GBase-LRM
  - 10GBase-LR
  - 10GBase-ER
  - 10GBase-ZR
- The open SFP+ port also supports:
  - Direct attached 10G copper cable assemblies
  - Both Class-I and Class-II fiber
  - SFP+ modules
  - SFP modules supporting WDM technology
- Support 100m on Cat6a or higher UTP
- Per Energy Efficient Ethernet standards, IEEE 802.3az, UTP cable length is detected and power is adjusted according, to reduce power consumption on shorter UTP cable installs

Specifications

Standards	IEEE 802.3 IEEE 802.3an IEEE 802.3ae IEEE 802.3az
Data Rate	10 Gbps
Dip Switches	SW1: Copper Loopback SW2: Fiber Loopback SW3: not used SW4: Transparent Link Pass Through
Status LEDs	PWR (Power): On = power is on L/A SFP+ (Fiber port link and activity statue): On = Link OK Flashing = Link and Activity OK Copper Link (Copper Link Status): On = Link OK Copper Act (Copper Link Activity): On = Activity OK
Dimensions	Width: 0.86” [21.85 mm] Depth: 6.5” [165 mm] Height: 3.4” [86.36 mm]
Power Consumption	10.5 Watts See product manual for chassis power guidelines
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
MTBF	Greater than 250,000 hours (MIL-HDBK-217F) Greater than 687,000 hours (Bellcore)
Certifications	FCC Class A, EN55022 Class A, EN55024, CE Mark
Warranty	Lifetime

Media Converters

ION 10 Gigabit Ethernet Remotely Managed Media and Rate Converter NID

10GBase-X to 10GBase-X + 10/100/1000Base-T with Remote Layer 2 Management

The ION C4221 Network Interface Device (NID) is a remotely managed product that offers management via the ION Management Module for secure delivery of Ethernet services for business and mobile backhaul applications. The C4221 is a 10 Gig product with advanced features like remote management of the local and remote cards, VLAN, jumbo frame support, and bandwidth allocation of 10 Gig interfaces. The C4221 offers the additional functionality of a rate converter by also offering a 10/100/1000Base-T RJ-45 port allowing 10/100/1000 based devices to connect to 10 Gigabit Ethernet fiber backbone.

Ordering Information

C4221-4848
(2) 10GBase-X SFP+ slot (empty)
+ (1) 10/100/1000Base-T RJ-45 ports

Optional Accessories (sold separately)

SFP Modules
SFP+ modules supported:
100FX, 1000X, SGMII, and 10 Gig

Features

- Full non-blocking switching on all interfaces
- (2) 10 Gig SFP+ ports supporting 100FX, 1000X, SGMII, and 10 Gig
- SFP ports individually support same or different speeds simultaneously
- (1) 10/100/1000Base-T port
- Local and remote units can be fully managed by the ION platform
- IPv4 IP TOS, DiffServ and IPv6 traffic class QoS classification via IONMM
- Bandwidth Allocation, per port, from
  1 Gig to 10 Gig in 1 Gig increments
- Basic VLAN support
- Jumbo frame support, up to 10,240 bytes
- 16K maximum MAC Addresses
- 8Mbit shared buffer memory
- Remote firmware upgrades
- Auto-MDI/MDIX
- Auto-Negotiation
- Can be used in the ION 19-Slot, 6-Slot, and 1-Slot chassis

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3x IEEE 802.3z IEEE 802.3ab IEEE 802.3ae
Ports	(1) Copper RJ-45 10/100/1000Base-T port (2) Fiber 10 Gig SFP+ ports supporting 100FX, 1000X, SGMII, and 10 Gig USB port for basic setup
Status LEDs	Power SFP+ Link/Activity for each port TP – Left LED: Duplex, TP Link/Activity TP – Right LED: TP Speed USB – Activity
Switches/Jumpers	One jumper to load factory defaults
Dimensions	Width: 0.86" [21.85 mm] Depth: 6.5" [165 mm] Height: 3.4" [86.36 mm]
Power Input	ION Chassis Backplane
Power Consumption	6.24 Watts, 520mA!@ 12VDC
Environment	Operating: 0°C to 50°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
MTBF	Greater than 250,000 Hours (MIL-HDBK-217F) Greater than 687,500 Hours (Bellcore)
Certifications	Safety: CE Mark; Emissions: EN55022 Class A; Immunity: EN55024
Warranty	10 Years

Features Continued

- Management provided by IONMM
  - DHCP client
  - Telnet
  - Command Line Interface (CLI)
  - Web management
  - SNMP v1, v2c, and v3
  - Management VLAN

Features Coming Soon

- SFP+ DMI monitoring
- Fully compliant with OAM from IEEE 802.3ah – 2004 standard
- Loopback
- IEEE 802.1p QoS
- Transparent Link Pass Through
- Utilizes USB Type B connector for basic setup
- Full IEEE 802.1Q VLAN and double VLAN tagging
- RMON/Statistics counters per port
- Pause
- IP-addressable management support
- Compliant with IEEE 802.1X

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ION DS1 - T1/E1 Network Interface Device Module

DS1 - T1/E1 over Fiber

C6010-1040

The ION C6010 is a managed media converter that offers a solution for extending T1/E1 or PRI connections over fiber optic cabling. It provides fiber extension though a twisted pair RJ-48 port and a fiber port. These T1/E1 converters must be used in pairs, one on each end of the fiber link. Typical installations include a chassis card installed in a centrally located managed ION chassis, linked over fiber to a S6010 stand-alone converter at the remote location. The T1/E1 converters are available with fixed fiber connectors or an open SFP slot, with support for various fiber types, distances, and wavelengths to provide maximum flexibility for any network topology. CWDM SFPs can also be used to further increase the bandwidth capacity of the fiber infrastructure.

Ordering Information

C6010-1013
Twisted Pair (RJ-48) [1.5 km/0.9 mi.] to 1300nm multimode (SC) [2 km/1.2 mi.] Link Budget: 12.0 dB

C6010-1014
Twisted Pair (RJ-48) [1.5 km/0.9 mi.] to 1310nm single mode (SC) [20 km/12.4 mi.] Link Budget: 16.0 dB

C6010-1040
Twisted Pair (RJ-48) [1.5 km/0.9 mi.] *to SFP slot (empty)

C6010-3040
(2) Coax (BNC) *to SFP slot (empty)

Optional Accessories (sold separately)

SFP Modules

*SFP port uses standard 100Base-x/oc-3 SFP

Features

- Remote in-band management
- Local or Remote Loopbacks - Copper or Fiber
- Switch selectable for T1 or E1
- Remote firmware upgrade
- LEDs for immediate visual status
- Supports dual or single fiber
- Supports multimode and single mode fiber at a variety of distances
- Supports CWDM SFPs
- SNMP management when used with ION chassis and management module
- Remote stand-alone can be managed by local peer
- Extend PRI over fiber
- Must be used in pairs

Specifications

Standards	ANSI T1.102 T1.402 T1.408 ITU I.431 G.703 G.736 G.775 G.823 ETSI 300-166 ETSI 300-233 TBR12/12
Copper Connectors	RJ-48, BNC
Fiber Connectors	SFP: LC connector Uses standard 100Base-X/OC-3 SFP Fixed Optics: ST or SC connector
Data Rates	T1 = 1.544 Mbit/s, E1 = 2.048 Mbit/s
Status LEDs	Power, Signal Detect Copper, Signal Detect Fiber
Dimensions	Width: 0.86” [22 mm] Depth: 6.5” [165 mm] Height: 3.4” [86 mm]
Power Consumption	2.6 Watts
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
MTBF	Greater than 250,000 hours (MIL-HDBD-217F) Greater than 687,000 hours (Bellcore)
Certifications	CISPR/EN55022 Class A, FCC Class A, CE Mark
Warranty	Lifetime

ION DS1 - T1/E1/J1 Network Interface Device Module

4 x DS1 - T1/E1/J1 over Fiber

C6110-1040

The ION C6110 is a managed T1/E1/J1 mux media converter module that provides a solution for those users that need to extend multiple T1/E1/J1 connections over fiber. The C6110 includes (4) RJ-48 ports and (1) fiber port. The device is available in versions that support fixed fiber connectors as well as SFP fiber modules offering support for a variety of fiber types, distances, and wavelengths to provide maximum flexibility across a variety of network topologies. CWDM SFPs can also be utilized to further increase the bandwidth capacity of the fiber infrastructure.

The C6110 converter must be used in pairs. A typical installation will include a modular card installed in a managed ION chassis linked over fiber to a stand-alone S6110 in a remote location.

Ordering Information

C6110-1014
1310nm single mode (SC) [20 km/12.4 mi.]
Link Budget: 16.0 dB
to (4) RJ-48 [1.5 km/0.9 mi.]

C6110-1040
1 SFP port (Empty)
to (4) RJ-48 [1.5 km/0.9 mi.]
(SFP port uses standard 100Base-x/oc-3 SFP)

Optional Accessories (sold separately)

SFP Modules

Features

- (4) RJ-48 copper interfaces
- (1) fiber interface (fixed or SFP)
- (2) SFP ports on C6111-1040 model
- Loopback via test set
- Local and remote loopbacks
- LEDs for device status and troubleshooting
- Settings for line code, line build out, loopbacks and Alarm Indication Signal (AIS)
- Access to complete status and configuration on local and remote device
- Remote firmware upgrade
- Remote management
- Must be used in pairs

Specifications

Standards	ANSI T1.102 T1.403 T1.408 ITU I.431 G.703 G.736 G.775 G.823 ETSI 300-166 ETSI 300-233 TBR 12/13 AT&T Pub 62411
Data Rate	Copper ports (RJ-48): T1(J1) = 1.544Mb/s, E1 = 2.048Mb/s SFP port(s) (empty): 100Base-X/OC-3
Switches	Numerous switch settings for line coding, line build out, loopback and AIS
Status LEDs	Power, Port Status, Loopback and AIS
Dimensions	Width: 1.72" [44 mm] Depth: 6.5" [165 mm] Height: 3.4" [86 mm]
Power Consumption	6 Watts (max: dual fiber model) 5.5 Watts (max: single fiber model)
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
Certifications	EN55022 Class A, EN55024, CE mark
Warranty	Lifetime

ION DS1 - T1/E1/J1 Network Interface Device Module

4 x DS1 - T1/E1/J1 + 10/100 Ethernet over Fiber

C6120-1040

The ION C6120 is a managed T1/E1/J1 mux media converter module that provides a solution for those users that need to extend multiple T1/E1/J1 connections, along with a 10/100 Ethernet connection, all over fiber. The C6120 includes (4) RJ-48 ports, (1) 10/100 Ethernet port, and (1) fiber port. The device is available in versions that support fixed fiber connectors as well as SFP fiber modules offering support for a variety of fiber types, distances, and wavelengths to provide maximum flexibility across a variety of network topologies. CWDM SFPs can also be utilized to further increase the bandwidth capacity of the fiber infrastructure.

The C6120 converter must be used in pairs. A typical installation will include a modular card installed in a managed ION chassis linked over fiber to a stand-alone S6120 in a remote location.

Ordering Information

C6120-1014
1310nm single mode (SC) [20 km/12.4 mi.]
Link Budget: 16.0 dB
to (4) RJ-48 [1.5 km/0.9 mi.]
plus 10/100Base-TX (RJ-45) [100m]

C6120-1040
1 SFP port (Empty)
to (4) RJ-48 [1.5 km/0.9 mi.]
plus 10/100Base-TX (RJ-45) [100m]
(SFP port uses standard 100Base-x/oc-3 SFP)

Optional Accessories (sold separately)

SFP Modules

Features

- (4) RJ-48 copper interfaces
- (1) fiber interface (fixed or SFP)
- (1) RJ-45 10/100Mbps Ethernet port
- Auto-MDI/MDIX
- Pause (Flow Control on Ethernet port)
- Loopback via test set
- Local and remote loopbacks
- LEDs for device status and troubleshooting
- Settings for line code, line build out, loopbacks and Alarm Indication Signal (AIS)
- Access to complete status and configuration on local and remote device
- Remote firmware upgrade
- Remote management
- Must be used in pairs

Specifications

Standards	ANSI T1.102 T1.403 T1.408 ITU I.431 G.703 G.736 G.775 G.823 ETSI 300-166 ETSI 300-233 TBR 12/13 AT&T Pub 62411 IEEE 802.3™-2008
Data Rate	Copper ports (RJ-48): T1(J1) = 1.544Mb/s, E1 = 2.048Mb/s Ethernet port (RJ-45): 10/100Mbps SFP port(s) (empty): 100Base-X/OC-3
Switches	Numerous switch settings for line coding, line build out, loopback and AIS
Status LEDs	Power, Port Status, Loopback and AIS
Dimensions	Width: 1.72” [44 mm] Depth: 6.5” [165 mm] Height: 3.4” [86 mm]
Power Consumption	6 Watts (max: dual fiber model) 5.5 Watts (max: single fiber model)
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
MTBF	687,500 hours (Bellcore)
Certifications	EN55022 Class A, EN55024, CE mark
Warranty	Lifetime

ION DS3 - T3/E3 Network Interface Device Module

DS3 – T3/E3 Coax over Fiber


C6210-3040

The ION C6210 is a managed media converter module that provides a solution for those users that need to extend DS3-T3/E3 connections over fiber. The C6210 is available in versions that support fixed fiber connectors as well as SFP fiber modules offering support for a variety of fiber types, distances, and wavelengths to provide maximum flexibility across a variety of network topologies. CWDM SFPs can also be utilized to further increase the bandwidth capacity of the fiber infrastructure.

The C6210 DS3-T3/E3 converters must be used in pairs. A typical installation will include a modular card installed in a managed ION chassis linked over fiber to a stand-alone S6210 in a remote location.

Ordering Information

C6210-3013
(2) Coax (BNC) to 1300nm multimode (SC) [2 km/ 1.2 mi.] Link Budget: 11.0 dB

C6210-3014
(2) Coax (BNC) to 1310nm single mode (SC) [20 km/12.4 mi.] Link Budget: 16.0 dB

C6210-3040
(2) Coax (BNC) to *SFP slot (empty)

Optional Accessories (sold separately)

SFP Modules

*SFP port uses standard 100Base-x/oc-3 SFP

Features

- AIS (Alarm Indication Signal)
- Coax Line Build Out
- Switch selectable for DS3/T3 or E3
- Remote firmware upgrade
- Loopback – Coax and Fiber
- LEDs for immediate visual status
- Supports dual or single fiber
- Supports multimode and single mode fiber at a variety of distances
- Supports CWDM SFPs
- SNMP management when used with ION chassis and management module
- Remote stand-alone can be managed by local peer
- Must be used in pairs

Specifications

Standards	ANSI ITU-TS ETSI G.823 for jitter tolerance G.755 for loss of signal
Coax Connectors	75 ohm coax
Fiber Connectors	SFP: LC connector Uses standard 100Base-X/OC-3 SFP Fixed Optics: ST or SC connector
Data Rates	DS3/T3 = 44.7Mbps; E3 = 34.4Mbps
Status LEDs	Power, Coax link status, coax loopback status, AIS on coax link; Fiber link status, fiber loopback status, AIS on fiber link
Dimensions	Width: 0.86” [22 mm] Depth: 6.5” [165 mm] Height: 3.4” [86 mm]
Power Consumption	2.5 Watts
Environment	**Environment specs are dependent on the chassis chosen** Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
MTBF	Greater than 250,000 hours (MIL-HDBD-217F) Greater than 687,000 hours (Bellcore)
Certifications	CISPR/EN55022 Class A, FCC Class A, CE Mark
Warranty	Lifetime

12-Slot Media Converter Rack

Flexible Design for growing networks simplify your installation of Transition Networks' stand-alone media converters with the Media Converter Rack. This 19" rack-mountable unit supports up to twelve media converters while the unique design allows for multiple connections, consolidated into a single device, making network connections easier and more efficient.

(Media Converters Sold Separately)

- Space Saving Design: This device is powered by a single internal universal power supply; eliminating the need for the multiple power connections often associated with multiple converter installations. The unit saves space in the wiring closet by providing a means for mounting (12) converters in (3) units of rack space while reducing the number of wall outlet power connections required.
- Convenience: The media converters are hot-swappable. They can also be removed from the rack, powered externally, and used as stand-alone units in new applications as your network needs change in the future.
- Cost Effective: Easily rack mount the single-wide, 12 volt powered, Transition Networks' media converters that you already own, or buy stand-alone units today and rack mount them in the future.
- Includes: (12) Universal rack mount media converter brackets.

Specifications

Dimensions	Width: 17" [432 mm] Depth: 15" [381 mm] Height: 4.75" [121 mm]
Power Supply	Universal, internal power supply; AC 85 – 264V, 47 – 63 Hz.
Environment	Operating: 0°C to 50°C Humidity: 10% to 90% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	12 lbs. [5.2 kg]
MTBF	46,000 Hours (MIL-HDBK-217F) 126,500 Hours (Bellcore)
Certifications	UL Listed, cUL Listed (Canada), CISPR/EN55022 Class A, FCC Class A, CE Mark
Warranty	Lifetime

Ordering Information

E-MCR-05
12-Slot Media Converter Rack

Mounting Options (sold separately)

RMBU
Universal Rack Mount Bracket for Stand-Alone Converters

RMBM
Rack Mount Bracket for Mini Media Converters

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: E-MCR-05-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

RMS19-NID2-01

2-Slot Shelf for S3290 Series NID

Ordering Information

RMS19-NID2-01
2-Slot S3290 shelf, includes 4 device brackets and reversible rack mount ears

- Clean up your S3290 installations with this 19” rack mountable shelf
- Rack mount up to 2 of the S3290 devices in 1 unpowered shelf
- Space saving design: save rack space in low density deployments: 19” rack mount, 1RU high
- Includes reversible rack mount ears for either 19” or 23” rack mount installations
- Flexible:
  - Mix and match up to 2 Transition Networks S3290 Series NID devices
  - Deep enough to hold the external AC/DC power supply that ships with the S3290
  - Can also accommodate the S3290-RPS wide input DC power supply
- Includes 4 mounting brackets, 2 for each of the S3290 Series NIDs
- Securely mounts the S3290 into the shelf
- Non-powered design: don’t pay for power supplies twice. This low cost design allows the use of the power supplies that ship with the media converter.
- Power cord tie-down clamps: help to eliminate the accidental disconnection of power supplies from the media converters.

Specifications

Dimensions	Width: 19" [482.6 mm] Depth: 12" [304.8 mm] Height: 1.75” [44.5 mm]
Weight	4.3 lbs. [1.95 kg]
Warranty	Lifetime

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4-Slot Media Converter Shelf

(Media Converters Sold Separately)

- Clean up your stand-alone media converter installations with this 19” rack mountable shelf
- Rack mount up to 4 stand-alone devices in a 1RU unpowered shelf
- Space saving design: save rack space in low density deployments: 19” rack mount, 1RU high
- Flexible: mix and match up to 4 Transition Networks stand-alone media converters
  - Including ION stand-alone converters
  - Including Ethernet Extenders
  - Excluding the double-high converters
- Includes 4 converter mounting brackets
- Includes 3 slot blanks to cover unused slots
- Securely mounts the converters to the shelf
- Non-powered design: don’t pay for power supplies twice. This low cost design allows the use of the power supplies that ship with the media converters.
- The shelf is deep enough to hold the power supply, helping to reduce the strain on the power connections
- Power cord tie-downs: help to eliminate the accidental disconnection of power supplies from the media converters.

Specifications

Dimensions	Width: 19" [482.6 mm] Depth: 14" [355.6 mm] Height: 1.75” [44.5 mm]
Weight	4.6 lbs. [2.08 kg]
Warranty	Lifetime

Ordering Information

RMS19-SA4-02
4-Slot Media Converter Shelf, includes 4 brackets and 3 slot blanks

Mounting Options (sold separately)

RMBU
Universal Rack Mount Bracket for Stand-Alone Converters

RMBM
Rack Mount Bracket for Mini Media Converters

Wall, Rack, DIN Rail Mounting Brackets

Wall Mount Brackets are small simple "L-shaped" tabs that allow a single Transition Networks' media converter to be mounted anywhere. The brackets are sold in pairs and are available in several sizes and types to match the different sized media converters and space requirements.

DIN Rail Brackets allow stand-alone media converters to be mounted to a DIN Rail, common in industrial environments, in either a flat mount against the DIN Rail or in a vertical mount in which the converter mounts on its edge.

Mini Wall Mount brackets allow a mini media converter to be securely mounted to a wall or any other flat surface.

Mini Mounting Options

RMBM

DRBM

WMBM

Specifications

Weight	1 lb. [0.45 kg]
Warranty	Lifetime

Standard Mounting Options

WMBL, WMBP, WMBS

WMBV, WMBD

RMBU

Ordering Information

WMBD
5" [127 mm] DIN Rail Mount Bracket
Fits all Stand-Alone Converters; 1- or 2-Slot ION Chassis

WMBD-F
3.3" [84 mm] DIN Rail Mount Bracket (flat)
Fits all Stand-Alone Converters
3.25" [82 mm] wide

WMBD-FS
3.1" [79 mm] DIN Rail Mount Bracket (flat, small) Fits Stand-Alone Converters 3" [76 mm] wide

WMBL
4" [102 mm] Fits Stand-Alone Converters size 4.8" [122 mm] and 6.5" [165 mm]

WMBP
5" [127 mm] Fits 1- or 2-Slot ION Chassis

WMBS
3.2" [81 mm] Fits Stand-Alone Converters size 3.9" [99 mm]

WMBV
5" [127 mm] Vertical Mount
Fits all Stand-Alone Converters;
1- or 2-slot ION Chassis

RMBU
Rack mount bracket for stand-alone converters, used with E-MCR-05 and RMS19-SA4-02

Mini Media Converters

WMBM
3.3" [84 mm] Fits all "Mini" Media Converters

RMBM
Rack mount bracket for mini converters, used with E-MCR-05 and RMS19-SA4-01

DRBM
3.3" [84 mm] DIN Rail Mount Bracket for "Mini" Media Converters
Fits all "Mini" Media Converters

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External DC Power Supply

For Stand-alone Media Converters

SPS-2460-PS
Piggy-Back Power Supply

SPS-2460-SA
Stand-Alone Power Supply

Transition Networks' wide input external power supplies allow you to provide a wide range of input voltages to power your stand-alone converters and chassis. Input voltages of 24 – 60 VDC and 24 – 42 VRMS allow for installation of any of Transition Networks' stand-alone media converters in most industrial, telecom and commercial applications, as well as HVAC and building controlled environments.

Multiple form factors allow flexibility to meet your application. The stand-alone form factor can be used with all Transition Networks' stand-alone media converters. The piggy back form factor allows the power supply to attach directly to the converter and eliminate the power cable commonly found between the power supply and the converter. Once the piggy back supply is attached to the converter, the combined assembly is much easier to wall mount or attach to DIN Rail environments than using a separate supply.

Specifications

Output	Voltage: 12.25 VDC Current: 1.0A Load Regulation: ±5% at 10% load to full rated load Noise and Ripple: ±40 mV peak-to-peak of output voltage
Input	Voltage: 24 – 60 VDC; 24 – 42 VMRS Efficiency: 80% (typical)
Isolation Voltage	(Dielectric withstand) Meets IEC 950 for one minute 1500 VAC: Output/Input 1500 VAC: Input/Safety GND 1500 VAC: Output/CASE
Protection	Over Load Protection (OLP): When the average power rating exceeds 125%-150% of maximum power, output voltages reduced to a safe dissipation level; protects against short circuit of any output No Load Protection: No damage to power supply when operating at no load Transient Protection: No voltage spike at power-on, power-off, or power failure
Dimensions	SPS-2460-SA: Width: 3.75" [95 mm] Depth: 3.1" [79 mm] Height: 1" [25 mm] SPS-2460-PS: Width: 4.5" [114 mm] Depth: 3.4" [86 mm] Height: 1" [25 mm]
Power Consumption	3 Watts (max) @ 24 VDC input, 12.25 VDC output
Environment	Operating: -20°C to 65°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
MTBF	Greater than 250,000 hours (MIL-HDBK-217E)
Certifications	CISPR/EN55022, Class A, FCC Class A
Warranty	Lifetime

Ordering Information

SPS-2460-PS
Piggy-Back for use with stand-alone media converters 3.25" wide

SPS-2460-SA
Stand-Alone
For use with all stand-alone media converters

Stand-alone Ethernet Media Converter

10Base-T to 10Base-FL

E-TBT-FRL-05(SC)

The E-TBT-FRL-05 is a stand-alone media converter that provides an interface between 10Base-T ports and 10Base-FL ports, allowing users to integrate fiber optic cabling into 10Base-T copper environments. Operating at Layer 1, the physical layer, data is passed through the converter at line speed, making it ideal for applications where low latency is essential.

Features

- Auto-MDI/MDIX
- Link Pass Through
- Automatic Link Restoration
- Integrate mixed cabling environments using either switched or shared Ethernet

Specifications

Standards	IEEE 802.3 10Base-T 10Base-FL
Switch	S1: Enables/disables Link Pass Through
Status LEDs	PWR (Power): ON = connection to external AC power Link: ON = unit is receiving link pulses from a compliant device RX (Receive): ON = packets are being received
Dimensions	Width: 3" [76 mm] Depth: 3.9" [99 mm] Height: 1" [25 mm]
Power Input	External AC/DC required; 12 VDC, 0.5A, unregulated, standard
Environment	Operating: 0°C to 50°C Humidity: 5% to 90% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	54,337 hours (MIL217F2 V5.0) (MIL-HDBK-217F) 131,255 hours (Bellcore7 V5.0)
Certifications	Safety: Wall Mount Power Supply: UL Listed, cUL Listed (Canada) Regulatory: FCC Class A, CISPR22/EN55022 Class A, EN55024, EN61000, CE Mark
Warranty	Lifetime

Ordering Information

E-TBT-FRL-05
10Base-T (RJ-45) [100 m/328 ft.] to 10Base-FL 850nm multimode (ST) [2 km/1.2 mi.] Link Budget: 13.5 dB

E-TBT-FRL-05(SC)
10Base-T (RJ-45) [100 m/328 ft.] to 10Base-FL 850nm multimode (SC) [2 km/1.2 mi.] Link Budget: 13.5 dB

E-TBT-FRL-05(L)
10Base-T (RJ-45) [100 m/328 ft.] to 10Base-FL 1300nm multimode (ST) [5 km/3.1 mi.] Link Budget: 13.5 dB

E-TBT-FRL-05(XC)
10Base-T (RJ-45) [100 m/328 ft.] to 10Base-FL 1310nm single mode (SC) [20 km/12.4 mi.] Link Budget: 7.0 dB

Optional Accessories (sold separately)

Wide Input (24 - 60 VDC) Power Supplies (sold separately)

SPS-2460-SA
Stand-Alone Power Supply

Mounting Options (sold separately)

E-MCR-05
12-Slot Media Converter Rack

RMS19-SA4-02
4-Slot Media Converter Shelf

WMBD
DIN Rail Bracket 5" [127 mm]

WMBD-FS
DIN Rail Bracket (flat, small) 3.1" [79 mm]

WMBS
Wall Mount Bracket 3.2" [81 mm]

WMBV
Vertical Wall Mount Bracket 5" [127 mm]

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: E-TBT-FRL-05-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Stand-alone Ethernet Transceiver

10Base-5 AUI to 10Base-T RJ-45

The E-TBT-MC05 is an Attachment Unit Interface (AUI) transceiver that provides a method for connecting a workstation, or any other device with an AUI port, to twisted pair cabling in a 10Base-T network. Devices with AUI ports could include: servers, hubs, bridges and routers. The E-TBT-MC05 transceiver allows twisted pair, UTP or STP, to be connected to these AUI ports.

Ordering Information

E-TBT-MC05
10Base-5 (AUI) dB-15 male [50 m/164 ft.] to 10Base-T (RJ-45) [100 m/328 ft.]

Features

- Provides a complete interface of the AUI to Ethernet UTP cable
- Supports data transfer rate of 10 Mbps
- CSMA/CD access mechanism
- Capable of driving the UTP cable segment up to 100 m (328 ft.) without the use of a repeater
- Selectable Link test and SQE test functions
- AUI locking post design allows the E-TBT-MC05 to directly attach to a host's AUI connector
- Can be used with or without an AUI cable
- LED indicators for network monitoring and diagnosing
- The RJ-45 port will automatically detect and reverse the polarity on the receive pair, if needed

Specifications

Standards	IEEE 802.3 10Base-T
Switches	SW1: SQE Test: UP is enabled SW2: Link Test: UP is enabled SW3: Half or Full-Duplex: UP is for Half, Down is for Full
Status LEDs	COL: Blinks when detecting collisions STAT: Solid Green: UTP Link established; Blinks Green: No UTP Link; 4-Blink Pattern: Polarity reversal detected on UTP cable TX: Blinks when transmitting data on the RJ-45 RX: Blinks when receiving data on the RJ-45
Dimensions	Width: 3.1" [79 mm] Depth: 0.8" [20 mm] Height: 1.7" [43 mm]
Power Consumption	Not to exceed 75mA@12 VDC
Power Supply	No external power required
Input Voltage	10.2 to 15.75 VDC
Input Current	250mA@12 VDC
Environment	Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
MTBF	125,126 hours (Bellcore)
Certifications	FCC & CISPR Class A, CE Mark
Warranty	Lifetime

Stand-alone Fast Ethernet Media Converter

100Base-TX to 100Base-FX

E-100BTX-FX-06(SFP)

The E-100BTX-FX-06 is a stand-alone media converter that provides an interface between 100Base-TX ports and 100Base-FX ports, allowing users to integrate fiber optic cabling into 100Base-TX copper environments. Operating at Layer 1, the physical layer, data is passed through the converter at line speed, making it ideal for applications where low latency is essential.

Features

- Used in pairs or as a single unit to integrate fiber into a 100base copper environment
- Low latency, layer 1 design
- Auto-negotiation
- Auto-MDI/MDIX
- Active link pass through
- Far-End-Fault (FEF)
- Pause
- Automatic link restoration
- Supports all 100Mbps SFP Modules

Specifications

Standards	IEEE 802.3 100Base-FX 100Base-TX
Switches	SW1: Auto-Negotiation On/Off SW2: Pause TX On/Off SW3: Active Link Pass Through On/Off SW4: Far-End-Fault (FEF) On/Off
Status LEDs	PWR (Power) SDF or LKF (Link Fiber) SDC or LKC (Link Copper) RXF (Receive Fiber) RXC (Receive Copper)
Dimensions	Width: 3" [76 mm] Depth: 4.7" [119 mm] Height: 1" [25 mm]
Power Supply	External AC/DC required:120-240VAC input, 12VDC Output; unregulated, standard
Power Input	9-14VDC
Power Consumption	1.75 Watts
Environment	Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	Greater than 46,768 hours (MIL-HDBK-217F) Greater than 123,861 hours (Bellcore7 V5.0)
Certifications	Regulatory: FCC Class A, EN55024, EN55022 Class A, EN61000, CE Mark
Warranty	Lifetime

Ordering Information

E-100BTX-FX-06(SFP)
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-X SFP Slot (empty)

E-100BTX-FX-06
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (ST) [2 km/1.2 mi.] Link Budget: 11.0 dB

E-100BTX-FX-06(SC)
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (SC) [2 km/1.2 mi.] Link Budget: 11.0 dB

E-100BTX-FX-06(LC)
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (LC) [2 km/1.2 mi.] Link Budget: 11.0 dB

E-100BTX-FX-06(SM)
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1310nm single mode (SC) [20 km/12.4 mi.] Link Budget: 16.0 dB

E-100BTX-FX-06(SMLC)
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1310nm single mode (LC) [20 km/12.4 mi.] Link Budget: 17.3 dB

Optional Accessories (sold separately)

SFP Modules
Supports Hardened Grade SFP Modules

Wide Input (24 - 60 VDC) Power Supplies (sold separately)

SPS-2460-SA
Stand-Alone Power Supply

Mounting Options (sold separately)

E-MCR-05
12-Slot Media Converter Rack

RMS19-SA4-02
4-Slot Media Converter Shelf

WMBD
DIN Rail Bracket 5" [127 mm]

WMBD-FS
DIN Rail Bracket (flat, small) 3.1" [79 mm]

WMBL
Wall Mount Bracket 4" [102 mm]

WMBV
Vertical Wall Mount Bracket 5" [127 mm]

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: E-100BTX-FX-06(SFP)-NA

-NA = Country Code
NA = North America, LA = Latin America, EU = Europe, UK = United Kingdom, SA = South Africa, JP = Japan, OZ = Australia, BR = Brazil

Unmanaged Hardened Fast Ethernet Media Converter

(1) 100Base-TX Port + (1) 100Base-FX Port

E-100BTX-FX-05(HT) E-100BTX-FX-05(SCHT)

The E-100BTX-FX-05(HT) is a Hardened Ethernet stand-alone media converter that provides an interface between 100Base-TX ports and 100Base-FX ports, allowing users to integrate fiber optic cabling into extreme 100Base-TX copper environments, by supporting an operating temperature range of -25°C to 65°C. Operating at Layer 1, the physical layer, data is passed through the converter at line speed, making it ideal for applications where low latency is essential.

Features

- Extended Temperature Capable: Designed to operate in environments where ambient temperatures can rise as high as 65°C (149°F)
- Auto-Negotiation
- Auto-MDI/MDIX
- Link Pass Through
- Far-End-Fault Detection
- Automatic Link Restoration
- Pause

Specifications

Standards	IEEE 802.3
Switches	SW1: Auto-Negotiation On/Off SW2: Pause TX On/Off SW3: LPT On/Off SW4: FEF On/Off
Jumpers	Jumper Block 1: Auto-MDI/MDIX enable
Status LEDs	PWR (Power): Lit for normal operation SDF (Signal Detect Fiber): Lit for fiber link SDC (Signal Detect Copper): Lit for copper link RXF (Receive Fiber): Flashing = RX data RXC (Receive Copper): Flashing = RX data
Dimensions	Width: 3" [76 mm] Depth: 4.7" [119 mm] Height: 1" [25 mm]
Power Supply	External AC/DC required; Output: 9 VDC. 1.0A; 120-240VAC input, unregulated; standard
Environment	Operating: -25°C to 65°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	Greater than 46,768 hours (MIL-HDBK-217F) Greater than 123,861 hours (Bellcore7 V5.0)
Certifications	Safety: Wall Mount Power Supply: UL Listed, cUL Listed (Canada) FCC Class A, CISPR22/EN55022 Class A, EN55024, EN61000, CE Mark
Warranty	Lifetime

Ordering Information

E-100BTX-FX-05(HT)
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (ST) [2 km/1.2 mi.] Link Budget: 11.0 dB

E-100BTX-FX-05(SCHT)
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (SC) [2 km/1.2 mi.] Link Budget: 11.0 dB

E-100BTX-FX-05(SMHT)
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1310nm single mode (SC) [20 km/12.4 mi.] Link Budget: 16.0 dB

Optional Accessories (sold separately)

Power Supplies (sold separately)

SPS-2460-SA
Stand-Alone Power Supply

Mounting Options (sold separately)

RMS19-SA4-02
4-Slot Media Converter Shelf

WMBD
DIN Rail Bracket 5" [127 mm]

WMBD-FS
DIN Rail Bracket (flat, small) 3.1" [79 mm]

WMBL
Wall Mount Bracket 4" [102 mm]

WMBV
Vertical Wall Mount Bracket 5" [127 mm]

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: E-100BTX-FX-05(HT)-NA

-NA = Country Code
NA = North America, LA = Latin America, EU = Europe, UK = United Kingdom, SA = South Africa, JP = Japan, OZ = Australia, BR = Brazil

Stand-alone Fault-Tolerant Redundant Link Protector

10/100Base-TX

SBFTF1010-130

The SBFTF1010-130 Redundant Link Protector is a 10/100 Ethernet fault-tolerant transceiver that significantly reduces network down time by adding a new level of redundancy to 10/100 Ethernet connections. The Redundant Transceiver has three ports: one for the critical (main) device, one for the default (primary) path to the critical device, and another (backup) for the backup path. It is a smart device that will not send any signal on a path that is inactive. If the primary path loses its link, then the transceiver will switch to the backup path in approximately 189 milliseconds.

When the primary path re-establishes its link, the Redundant Link Protector will automatically switch back to the primary path. Optional functionality, controlled via a dip switch, allows the unit to move from the fault-tolerant mode to a 3-port switch mode.

Features

- Fault-tolerant redundant connections
- Easy to install and use
- Supports half and full-duplex transmission
- Auto-MDI/MDIX
- Auto-Negotiation
- IEEE 802.3 compliant
- 9 diagnostic LEDs
- Optional 3-port switch mode

Specifications

Standards	IEEE 802.3
RJ-45 Connectors	Type: 8-position, RJ-45 receptacle: 1: TX+5: NC (no connection) 2: TX-6: RX- 3: RX+7: NC (no connection) 4: NC (no connection) 8: NC (no connection)
Dip Switches	SW1: Auto-Negotiation Enable/Disable SW2: 10/100 Mbps SW3: Full/Half-Duplex SW4: Redundancy/Switch
System LEDs	Power (PWR): Indicates the presence of POWER Primary (PRI): Indicates a link is established on the Primary port Backup (BKP): Indicates the link has moved over to the Backup port
Port LEDs	Lower Right: Green indicates 100 Mbps; Orange indicates 10 Mbps; Flashing indicates Activity Lower Left: Green indicates full-duplex; Off half-duplex
Dimensions	Width: 3.25" [82.55 mm] Depth: 4.8" [121.92 mm] Height: 1" [25 mm]
Power Consumption	2.4 Watts
Power Input	120 VAC @ 60 Hz. (Domestic) 100 – 240 VAC @ 50 Hz. (International)
Power Output	12 VDC, 0.5 Amp (Domestic) 12 VDC, 1.25 Amp (International)
Environment:	Operating: 0°C to 50°C Storage: -15°C to 65°C Humidity: 5% to 95% Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
Certifications	Safety: Wall Mount Power Supply: UL Listed & CSA Certified; FCC Class A, EN55024, UL 60950, CE Mark
Warranty	Lifetime

Ordering Information

SBFTF1010-130
10/100Base-TX Link Protector Transceiver
(3) 10/100Base-TX (RJ-45) [100 m/328 ft.]

Optional Accessories (sold separately)

Wide Input (24 - 60 VDC) Power Supplies (sold separately)

SPS-2460-PS
Piggy Back Power Supply

SPS-2460-SA
Stand-Alone Power Supply

Mounting Options (sold separately)

E-MCR-05
12-Slot Media Converter Rack

RMS19-SA4-02
4-Slot Media Converter Shelf

WMBD
DIN Rail Bracket 5" [127 mm]

WMBD-F
DIN Rail Bracket (flat) 3.3" [84 mm]

WMBL
Wall Mount Bracket 4" [102 mm]

WMBV
Vertical Wall Mount Bracket 5" [127 mm]

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: SBFTF1010-130-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Stand-alone Fast Ethernet Media and Rate Converter

10/100Base-TX to 100Base-FX

SBFTF1014-105

The SBFTF Series is a stand-alone media converter that provides an interface between 10/100Base-TX ports and 100Base-FX ports, allowing users to integrate fiber optic cabling into 10/100 copper environments. Operating at Layer 2, the data link layer, this converter not only converts copper to fiber, it also provides rate conversion allowing legacy 10Base-T copper devices to connect to 100Base-FX fiber.

Features

- Auto-Negotiation
- Auto-MDI/MDIX
- Link Pass Through
- Far-End-Fault (FEF) Detection
- Automatic Link Restoration Extend network distance up to 120km
- Bridging devices will provide conversion and integration solutions for half and full-duplex environments
- 10 Mbps or 100 Mbps on TP port
- Half or full-duplex on all ports including fiber

Specifications

Standards	IEEE 802.3
Data Rate	10 Mbps; 100 Mbps, Layer 2
Filtering Addresses	1K MAC addresses
Filtering & Forwarding	14,880 pps for Ethernet; Rate 148,800 pps for Fast Ethernet
RAM Buffers	512 KB
Max Packet Size	2044 bytes untagged; 2048 bytes tagged
Switches	SW1 (TP): Auto-Negotiation On/Off SW2 (TP): Half or Full-duplex with Auto-Negotiation Off SW3 (TP): 10Mbps or 100 Mbps with Auto-Negotiation Off SW4 (Fiber): Half or Full-duplex SW5: Link Pass Through On/Off SW6: Far-End-Fault (FEF) On/Off
Status LEDs	PWR (Power): ON = connection to external power FD (Fiber Duplex): ON=Full-duplex; Off=Half duplex LNK/ACT (Fiber Link/Activity): ON=Link; Blinking=Activity CD (Copper Duplex): ON = Full-duplex; Off = Half-duplex LNK/ACT (Copper Link/Activity): ON = Link; Blinking = Activity 100 (Copper): Off = 10 Mbps; ON = 100 Mbps
Dimensions	Width: 3.25” [82.55 mm] Depth: 4.8” [121.92 mm] Height: 1" [25 mm]
Power Consumption	External AC/DC; 12 VDC, 0.8A min
Environment	Operating: 0°C to 50°C Humidity: 5% to 90% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	Greater than 41,660 hours (MIL-HDBD-217F) Greater than 114,580 hours (Bellcore7 V5.0)
Certifications	Safety: Wall Mount Power Supply: UL Listed; FCC Class A, VCCI Class 1, CISPR22/EN55022 Class A, EN55024, EN61000, CE Mark
Warranty	Lifetime

Ordering Information

SBFTF1011-105
10/100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (ST) [2 km/1.2 mi.] Link Budget: 11.0 dB

SBFTF1013-105
10/100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (SC) [2 km/1.2 mi.] Link Budget: 11.0 dB

SBFTF1039-105
10/100Base-TX (RJ-45) 100 m/328 ft.] to 100Base-FX 1300nm multimode (LC) [2 km/1.2 mi.] Link Budget: 11.0 dB

SBFTF1014-105
10/100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1310nm single mode (SC) [20 km/12.4 mi.] Link Budget: 16.0 dB

SBFTF1040-105
10/100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-X SFP Slot (empty)

Optional Accessories (sold separately)

SFP Modules

Wide Input (24 - 60 VDC) Power Supplies

SPS-2460-PS
Piggy Back Power Supply

SPS-2460-SA
Stand-Alone Power Supply

Mounting Options (sold separately)

E-MCR-05
12-slot Media Converter Rack

RMS19-SA4-02
4-slot Media Converter Shelf

WMBD
DIN Rail Bracket 5" [127 mm]

WMBD-F
DIN Rail Bracket (flat) 3.3” [84 mm]

WMBL
Wall Mount Bracket 4" [102 mm]

WMBV
Vertical Wall Mount Bracket 5" [127 mm]

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: SBFTF1011-105-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Stand-alone Fast Ethernet Remotely Managed NID

10/100/1000Base-T to 100Base-FX with OAM/IP-Based Management

S2220-1040

The ION S2220 is a stand-alone managed Network Interface Device (NID) that provides an interface between 10/100/1000Base-T ports and 100Base-FX ports, allowing users to manage their links while integrating fiber optic cabling into 10/100/1000 copper environments. As a remotely managed device, the S2220 can be managed individually via an IP address or it can be managed in-band, over the fiber when linked to a C2220 card installed in a managed ION chassis. With advanced features like IEEE 802.3ah Link OAM, VLAN, QoS, SSH/SSL, jumbo frame support, and bandwidth allocation, the S2220 offers a variety of methods for the secure delivery of Ethernet services in business and mobile backhaul applications.

Features

- MEF 9, 14 and 21 certified
- IEEE 802.3ah Link OAM
- 10K Jumbo Frame Support
- Two selectable Remote Management modes:
  - IP-Based Remote Management
  - In-Band (remote device managed by local peer)
- Auto-MDI/MDIX
- Auto-Negotiation
- Pause
- Transparent Link Pass Through
- Far-End-Fault (FEF)
- Remote Loopback
- Field Upgradeable Firmware
- IEEE 802.1p QoS packet classification
- IPv4 IP TOS, DiffServ and IPv6 traffic class QoS classification
- IEEE 802.1Q VLAN and double VLAN tagging with 4096 VIDs
- DHCP client
- SNTP
- TFTP
- RADIUS client
- RMON counters for each port
- Bandwidth profiling
- DMI Optical Management

Specifications

Standards	IEEE 802.3 IEEE 802.3ah IEEE 802.1p IEEE 802.1Q
Data Rate	Copper: 10/100/1000 Mbps Fiber: 100 Mbps
Filtering Addresses	8K MAC Addresses
Max Frame Size	10,240 bytes
Dimensions	Width: 3.25” [82.55 mm] Depth: 6.5” [165 mm] Height: 1" [25 mm]
Power Input	100-240 VAC, 1A
Power Output	12 VDC, 1.25A
Environment	Operating: 0°C to 50°C Humidity: 5% to 90% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
Certifications	EN55022 class A, EN55024, UL60950, CE Mark
Warranty	Lifetime

Ordering Information

S2220-1014
10/100/1000Base-T (RJ-45) [100 m] to 100Base-LX 1310nm single mode (SC) [10 km/6.2 mi.] Link Budget: 16.0 dB

S2220-1040
10/100/1000Base-T (RJ-45) [100 m] to 100Base-X SFP Slot (empty)

*Note all units feature USB port for local management application.

Optional Accessories (sold separately)

SFP Modules

Mounting Options (sold separately)

WMBL
Wall Mount Bracket 4" [102 mm]

WMBD
DIN Rail Bracket 5" [127 mm]

RMS19-SA4-02
4-Slot Media Converter Shelf

Features (Continued)

- Cable diagnostic function for copper ports
- SSH
- Telnet
- Command Line Interface (CLI)
- Web management
- Focal Point Management
- SNMP v1, v2c, and v3
- USB port for basic setup
- Management VLAN

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: S2220-1014-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Stand-alone Fast Ethernet PoE Media Converter

10/100Base-TX PoE PSE to 100Base-FX

SPOEB1039-105

The SPOEB Series is a 10/100 Ethernet copper to fiber PoE media converter that enables enterprises to provide power to network devices over the existing CAT5 data connection.

Transition Networks' AC powered PoE media converters combine data received over a fiber optic link with -48 VDC power; providing power to Data Terminal Equipment (DTE) Power Devices (PD) over unshielded twisted pair cable. The PoE converters are Power Sourcing Equipment (PSE) and are fully compatible with Powered Devices (PD) that comply with the IEEE 802.3af standard. The converters also include a PD signature sensing and power monitoring features per the IEEE 802.3af standard. Other features include Over-Current Protection, Under-Current Detection and Fault Protection Input.

This feature enhanced model offers the ability to enable/disable many of the features as well as force port capabilities. In addition, with the PSE/LPT switch enabled, a loss of Fiber RX will disable PSE power output on the UTP port for 2 seconds to allow remote device to re-initialize, also known as Powered Device Reset.

The PoE converter is fully compatible with devices that comply with the IEEE 802.3af standard. The PoE converter is capable of inserting power on data pairs or spare pair of the MDI.

Features

- External AC power supply
- IEEE 802.3af Power-over-Ethernet Compatible
- 48 VDC PSE Output Voltage
- Signal Pair or Spare Pair Power Insertion
- PD Detection Signature
- Over-Current Protection & Under-Current Detection
- Powered Device Reset
- Switch selectable features and port settings
- Minimum Load Sensing
- Fault Protection Input
- Auto-Negotiation
- Auto-MDI/MDIX
- Link Pass Through (LPT)
- Far-End-Fault (FEF)
- Automatic Link Restoration

Specifications

Standards	IEEE 802.3 IEEE 802.3af
Max Frame Size	1600 bytes
Switches	SW1: Auto-Negotiation On/Off (TP) SW2: Speed TP: Force 10 Mbps or 100 Mbps (SW1 off) SW3: Duplex TP: Force Half or Full-Duplex (SW1 off) SW4: Duplex Fiber: Half or Full-Duplex SW5: Link Pass Through On/Off SW6: PSE On/Off SW7: PSE/LPT on/off SW8: N/A
Status LEDs	Power Fiber Link, Activity, & Duplex Copper Link, Activity, Speed, & Duplex PoE Status
Dimensions	Width: 3.25" [82.55 mm] Depth: 4.8" [121.92 mm] Height: 1" [25 mm]
Power Consumption	20 Watts (max)
Power Supply	External power supply: 90 – 250 VAC Input; 48VDC Output
Environment	Operating: 0°C to 50°C Storage: -25° to +85°C Humidity: 5% to 90% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	49,981 MIL217F2 Hours; 132,144 Bellcore Hours
Certifications	EN55022:1994+A1:1996+A2:1997 Class A, FCC Part 15 Subpart B, UL 1950
Warranty	Lifetime

Ordering Information

SPOEB1040-105
10/100Base-TX PoE (RJ-45) [100 m/328 ft.] to 100Base-X SFP Slot (empty)

SPOEB1011-105
10/100Base-TX PoE (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (ST) [2 km/1.2mi.] Link Budget: 11.0 dB

SPOEB1013-105
10/100Base-TX PoE (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (SC) [2 km/1.2mi.] Link Budget: 11.0dB

SPOEB1039-105
10/100Base-TX PoE (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (LC) [2 km/1.2 mi.] Link Budget: 11.0 dB

Optional Accessories (sold separately)

SFP Modules

Mounting Options (sold separately)

WMBL
Wall Mount Bracket 4" [102 mm]

WMBV
Vertical Wall Mount Bracket 5" [127 mm]

WMBD
DIN Rail Bracket 5" [127 mm]

RMS19-SA4-02
4-Slot Media Converter Shelf

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: SPOEB1040-105-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Unmanaged Hardened Gigabit Ethernet Media Converter

(1) 10/100/1000Base-T Port + (1) 1000Base-SX/LX Port or (1) 100/1000Base-X Port

The SISTG10xx-211-LRT-B Series is a new generation of unmanaged hardened Gigabit Ethernet media converter. The converter can provide multimode or single mode fiber connections with fixed SC connectors for extending the Ethernet service distance over fiber. The converter also has a SFP version that provides the ultimate flexibility to choose the appropriate SFP module to match your communication and distance needs.

It has redundant input power connections to ensure safe reliable operation in temperatures between -40°C and +75°C. Transition Networks' hardened switches are certified with UL Class 1 Division 2 to operate reliably in hazardous locations such as Oil & Gas, manufacturing, and the chemical industry.

Ordering Information

SISTG1013-211-LRT-B
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (SC) [62.5/125 µm: 220 m/722 ft.] [50/125µm: 550 m/1804 ft.] Link Budget: 8.5 dB

SISTG1014-211-LRT-B
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX 1310nm single mode (SC) [9/125µm: 10 km/6.2 mi.] Link Budget: 10.5 dB

SISTG1040-211-LRT-B
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 100/1000Base-X SFP slot (empty)

Optional Accessories (sold separately)

SFP Modules

External AC/DC Power Supply (sold separately)

SPS-UA12DHT
Input: 90-264VAC
Output: 12 VDC, 1.3A, 18 Watts

25135
Input: 85-264VAC, 120-370VDC
Output: 24VDC, 10 Watts, -20°C to +70°C

Features

- Auto-Negotiation
- Auto-MDI/MDIX
- Link Pass Through
- Extended operating temperature (-40°C to 75°C)
- Dual, Redundant, 12-48 VDC Power Inputs
- Reverse Polarity Power Input Protection
- Overload Current Protection
- DIN Rail Mounting Brackets Included
- Class 1, Div 2 Certified
- Jumbo Frame: 9K bytes

Specifications

Standards	IEEE 802.3 IEEE 802.3ab IEEE 802.3u IEEE 802.3x IEEE 802.3z
Data Rate	Copper: 10/100/1000 Mbps Fiber: 1000 Mbps SFP: 100/1000 Mbps
Dip Switches	1: SFP - Enable Auto Negotiation for the SFP / Force Gigabit speed for SFP port 2: Copper - Enable Auto Negotiation for the copper / Force Gigabit speed for copper 3: LPT - Enable/Disable Link Pass Through
Status LEDs	PWR (Power): ON = powered correctly LNK/ ACT (ports 1-2): ON = Link; FLASHING = data transmitting
Dimensions	Width: 1.2" [30 mm] Depth: 3.86" [98 mm] Height: 4.25" [108 mm]
Power Consumption	3.4 Watts (max)
Power Input	12 to 48 VDC, 0.2A-0.5A, redundant inputs with reverse polarity protection
Ingress Protection	IP30
Environment	Operating: -40°C to +75°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	0.97 lbs. [0.44 kg]
MTBF	SISTG1013-211-LRT-B & SISTG1014-211-LRT-B 1,639,500 Hrs. Temp: 25.00° C. 251,499 Hrs. Temp: 75.00° C. SISTG1040-211-LRT-B 1,628,265 Hrs. Temp: 25.00° C. 248,741 Hrs. Temp: 75.00° C.
Certifications	UL Class 1, Div 2 for hazardous environments CISPR/EN55022 Class A, FCC Class A, CE Mark, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration)
Warranty	5 Years

Stand-alone Fiber to Fiber Media Converter

Fiber to Fiber for Data Rates from 100Mbps to 155Mbps

F-SM-MM-02

The F-SM-MM-02 fiber to fiber stand-alone media converter extends distance up to 20 km with network protocols that use 1300nm wavelength for fiber optic transmission. In fact, distances can be extended in any networking protocol between 100 Mbps and 155 Mbps.

Features

- Link Pass Through
- Automatic Link Restoration

Specifications

Standards	IEEE 802.3
Status LEDs	PWR (Power): Steady green LED indicates connection to external AC power LKM or Link (Left): Lit for multimode Link LKS or Link (Right): Lit for single mode Link
Dimensions	Width: 3" [76 mm] Depth: 4.7" [119 mm] Height: 1" [25 mm]
Power Consumption	3.1 Watts
Power Supply	External AC/DC required; 12 VDC. 0.5A Output; 120-240VAC input; unregulated; standard
Environment	Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	51,185 hours (MIL217F2 V5.0) (MIL-HDBK-217F) 124,339 hours (Bellcore7 V5.0)
Certifications	Safety: Wall Mount Power Supply: UL Listed and CSA certified; CISPR/EN55022 Class A, EN55024, EN61000, FCC Class A, CE Mark
Warranty	Lifetime

Ordering Information

F-SM-MM-02
1300nm multimode (SC) [2 km/1.2 mi.] Link Budget: 11.0 dB
to 1310nm single mode (SC) [20 km/12.4 mi.]Link Budget: 16.0 dB

Optional Accessories (sold separately)

WMBD-FS
DIN Rail Bracket (flat, small) 3.1" [79 mm]

SPS-2460-SA
Wide Input (24 - 60 VDC) Stand-Alone Power Supply

E-MCR-05
12-Slot Media Converter Rack

RMS19-SA4-02
4-Slot Media Converter Shelf

WMBD
DIN Rail Bracket 5" [127 mm]

WMBL
Wall Mount Bracket 4" [102 mm]

WMBV
Vertical Wall Mount Bracket 5" [127 mm]

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: F-SM-MM-02-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Stand-alone Fiber to Fiber Media Converter

SFP to SFP for Data Rates from 100Mbps to 2.5 Gbps

S3100-4040

The ION S3100 is a stand-alone fiber to fiber media converter. It is protocol independent and supports data rates from 100Mbps to 2.5Gbps through two open SFP slots. This any-rate to same-rate converter can be used to perform reliable and cost-effective single mode to multimode fiber conversion or it can be used to provide wavelength conversion in CWDM applications.

Features

- Protocol Transparent
- Supports data rates from 100Mbps to 2.5Gbps
- Any-rate to same-rate conversion
- SFP to SFP Fiber Repeater
- Specific wavelength CWDM Transponder
- Supported protocols: Fast Ethernet, Gigabit Ethernet, SONET (OC-3/12/48), 1 & 2 Gig Fiber Channel, 2.5G InfiniBand, FDDI, ESCON/ SBCON
- Link Pass Through
- Automatic Link Restoration

Specifications

Standards	Multi-Source Agreement (MSA) Small Form Factor Pluggable (SFP)
Data Rates	Protocol Independent 100Mbps to 2.5 Gbps
Max Frame Size	16384 bytes Jumbo Frames Supported
Status LEDs	PWR: ON (Green) = Power Port 1 Link: ON = Fiber Signal Detected Port 2 Link: ON = Fiber Signal Detected
Dimensions	Width: 3.25” [82 mm] Depth: 6.5” [165 mm] Height 1" [25 mm]
Power Consumption	2-3 Watts (based on the SFP modules used)
Power Supply	External AC/DC required: 12VDC Output; 120-240VAC input
Environment	Operating: 0°C to 50°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	Greater than 250,000 hours (MIL-HDBK-217F) Greater than 687,000 hours (Bellcore)
Certifications	FCC Class A, EN55022 Class A, EN55024, CE Mark
Warranty	Lifetime

Ordering Information

S3100-4040
100Mbps to 2.5Gbps fiber repeater with two open SFP slots, any-rate to same-rate stand-alone media converter

Optional Accessories (sold separately)

SFP Modules
SFP and SFP+ modules supported

Mounting Options (sold separately)

WMBL
Wall Mount Bracket 4" [102 mm]

WMBD
DIN Rail Bracket 5" [127 mm]

E-MCR-05
12-Slot Media Converter Rack

RMS19-SA4-02
4-Slot Media Converter Shelf

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: S3100-4040-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Stand-alone Gigabit Ethernet Media Converter

1000Base-T to 1000Base-SX/LX

SGETF1040-110

The SGETF Series is a stand-alone media converter that provides an interface between 1000Base-T ports and 1000Base-SX/LX ports, allowing users to integrate fiber optic cabling into 1000Base-T copper environments. Operating at Layer 1, the physical layer, data is passed through the converter at line speed, making it ideal for applications where low latency is essential.

Features

- Auto-MDI/MDIX
- Copper & Fiber Auto-Negotiation
- Transparent Link Pass Through
- Automatic Link Restoration
- Pause
- Remote Fault Detect

Specifications

Standards	IEEE 802.3ab IEEE 802.3z
6-position Switch	SW1: Remote Fiber Fault Detect (Down=Enabled) SW2: Symmetric Pause SW3: Asymmetric Pause SW4: Transparent Link Pass Through (UP=Enabled) SW5: Fiber Auto-Negotiation (Down=Enabled) SW6: Loopback (Down=Enabled)
Status LEDs	PWR (Power): Steady green LED indicates connection to external AC power RXF (Fiber receive): Flashing LED indicates reception of data on fiber link LKF (Fiber link): Steady LED indicates fiber link connection RXC (Copper receive): Flashing LED indicates reception of data on copper link LKC (Copper link): Steady LED indicates copper link connection
Dimensions	Width: 3.25" [82.55 mm] Depth: 4.8" [121.92 mm] Height: 1" [25 mm]
Power Consumption	5.4W, 450mA @ 12VDC
Power Supply	External AC/DC required; 12 VDC, 0.8A min Output; 120-240VAC input
Environment	Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	382,000 hours (MIL217F2 V5.0) (MIL-HDBK-217F) 1,345,000 hours (Bellcore7 V5.0)
Certifications	Safety: Wall Mount Power Supply: UL Listed, cUL Listed (Canada); FCC Class A, CISPR22/EN55022 Class A, EN55024, EN61000, CE Mark
Warranty	Lifetime

Ordering Information

SGETF1013-110
1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (SC) [62.5/125 µm fiber: 220 m/722 ft.] Link Budget: 7.0 dB [50/125 µm fiber: 550 m/1804 ft.] Link Budget: 7.0 dB

SGETF1024-110
1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 1300nm Extended multimode (62.5/125 µm fiber only) (SC) [2 km/1.2 mi.] Link Budget: 7.0 dB

SGETF1039-110
1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (LC) (via TN-SFP-SX) [62.5/125 µm fiber: 220 m/722 ft.] Link Budget: 8.0 dB [50/125 µm fiber: 550 m/1804 ft.] Link Budget: 8.0 dB

SGETF1014-110
1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX 1310nm single mode (SC) [10 km/6.2 mi.] Link Budget: 10.5 dB

SGETF1040-110
1000Base-T (RJ-45) [100 m/328 ft.] to SFP slot (empty)

Optional Accessories (sold separately)

SFP Modules

Wide Input (24 - 60 VDC) Power Supplies

SPS-2460-PS
Piggy Back Power Supply

SPS-2460-SA
Stand-Alone Power Supply

Mounting Options (sold separately)

E-MCR-05
12-Slot Media Converter Rack

RMS19-SA4-02
4-Slot Media Converter Shelf

WMBD
DIN Rail Bracket 5" [127 mm]

WMBD-F
DIN Rail Bracket (flat, small) 3.1" [79 mm]

WMBL
Wall Mount Bracket 4" [102 mm]

WMBV
Vertical Wall Mount Bracket 5" [127 mm]

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: SGETF1013-110-NA

-NA = Country Code
-NA = North America, -LA = Latin America
-EU = Europe, -UK = United Kingdom
-SA = South Africa, -JP = Japan
-OZ = Australia, -BR = Brazil

Stand-alone Gigabit Ethernet Media and Rate Converter

10/100/1000Base-T to 1000Base-SX/LX

SGFEB1013-130

SGFEB1040-330

The SGFEB Series is a stand-alone media converter that provides an interface between 10/100/1000Base-T ports and 1000Base-SX/LX ports, allowing users to integrate fiber optic cabling into 10/100/1000 copper environments. Operating at Layer 2, the data link layer, this converter not only converts copper to fiber, it also provides rate conversion allowing legacy 10/100 copper devices to connect to 1000Base-SX/LX fiber.

Features

- Auto Negotiation
- Auto-MDI/MDIX
- Link Pass Through
- Far End Fault (FEF)
- Remote Fault Detect
- Provides rate conversion while also increasing transmission distances
- Supports multimode or single mode fiber
- Versions available with fixed SC or LC optics, as well as modular SFP optics
- Long haul transmission distances are supported with a variety of SFP modules
- SFP ports support dual speeds: 100/1000/SGMII
- Multiport versions provide 3 or 4 port switch functionality or provide redundant fiber links
- Supports IEEE 802.3az Energy Efficient Ethernet

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU
Ex: SGFEB1040-130-NA

-NA = Country Code
NA = North America
LA = Latin America
EU = Europe
UK = United Kingdom
SA = South Africa
JP = Japan
OZ = Australia
BR = Brazil

Specifications

Standards	IEEE 802.3 IEEE 802.3ab IEEE 802.3u IEEE 802.3z IEEE 802.3az
Data Rates	Copper: 10/100/1000 Mbps Fiber: 1000Mbps, 100Mbps also supported via SFP port
Filtering Addresses	8k MAC Addresses
Max Frame Size	10,260 byte Jumbo Frames
Dip Switches	Two Port Models Switch 1: TP1 - Auto-Negotiation Enable / Disable Switch 2: TP1 – Force 100Mbps or 10Mbps with switch 1 disabled Switch 3: TP1 – Force Full or Half-Duplex with switch 1 disabled Switch 4: Link Pass Through Enable / Disable Switch 5 & 6: Controls the Fiber SFP port for 1000M, 100M, or SGMII Multiport Models with additional 4 position dip-switch: Switch 1 & 2: Controls the 2nd Fiber SFP port for 1000M, 100M, or SGMII Switch 3 & 4: Fiber Redundancy Enable/Disable, Revertive Mode, and Fiber P2/P3 blocking
Status LEDs	PWR (Power): On = Power is provided to converter LACT (Fiber Link/Activity): On = Link, Blink = Activity RJ-45 Upper Left (TPLink/Activity/Duplex): Green = Link Full-Duplex, Blink = Activity, Amber = Link Half-Duplex, Blink = Activity RJ-45 Upper Right (Speed): Green = 1000Mbps, Amber = 100Mbps, Off = 10Mbps
Dimensions	Width: 3.25” [82.55 mm] Depth: 4.8” [121.92 mm] Height: 1" [25 mm]
Power Consumption	2.2 Watts
Power Input	7.5 to 24 VDC, Provided by wide input AC Wall Mount Adapter
Environment	Operating: 0°C to 50°C Storage: -15°C to 65° C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	Greater than 250,000 MIL-HDBK-217F Hours. Greater than 687,500 Bellcore Hours When bundled with a typical 50,000 hour power supply: Greater than 41,660 MIL-HDBK-217F Hours Greater than 114,580 Bellcore Hours
Certifications	EN55022 Class A, EN55024, FCC Class A, CE Mark Safety: Wall Mounted Power Supply: UL Listed, UL60950 and CSA Certified
Warranty	Lifetime

Ordering Information

SGFEB1040-130
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 100/1000Base-X SFP Slot (empty)

SGFEB1013-130
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (SC) [62.5/125 um: 220 m/722 ft.] [50/125 um: 550 m/1804 ft.] Link Budget 7.5 dB

SGFEB1039-130
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (LC) [62.5/125 um: 220 m/722 ft.] [50/125 um: 550 m/1804 ft.] Link Budget 8.0 dB

SGFEB1014-130
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX 1310nm single mode (SC) [10 km/6.2 mi.] Link Budget 10.5 dB

SGFEB1024-130
10/100/1000Base-T (RJ-45) [100 m/328ft.] to 1000Base-SX 1310nm Extended multimode (62.5/125mm fiber only) (SC) [up to 2 km] Link Budget 7.0 dB

SGFEB1019-130
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX 1310nm single mode (LC) [10 km/6.2 mi.] Link Budget 10.5 dB

SGFEB1040-230
(1) Port 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to (2) Ports 100/1000Base-X SFP Slot (empty)

SGFEB1040-330
(2) Port 10/100/1000Base-T (RJ-45) [100 m/328 ft.] to (2) Ports 100/1000Base-X SFP Slot (empty)

Single Fiber Products

SGFEB1029-130
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX 1310nm TX/1550nm RX single mode (SC) [20 km/12.4 mi.] Link Budget 13.0 dB

SGFEB1029-131
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX 1550nm TX/1310nm RX single mode (SC) [20 km/12.4 mi.] Link Budget 13.0 dB

Optional Accessories (sold separately)

SFP Modules
Supports 100Mbps and 1000Mbps fiber SFPs

DC Power Supply
SPS-2460-SA or SPS-2460-PS: wide input 24 – 60 VDC power supply

Mounting options (sold separately)

E-MCR-05
12-Slot Powered Media Converter Rack

RMS19-SA4-02
4-Slot Media Converter Shelf

WMBL
Wall Mount Bracket

WMBD
DIN Rail Mount Bracket

Stand-alone Gigabit Ethernet PoE Media Converter

10/100/1000Base-T PoE PSE to 1000Base-X

SGPOE1040-100

Transition Networks' AC powered PoE media converters combine data received over a fiber optic link with -48 VDC power; providing power to Data Terminal Equipment (DTE) Powered Devices (PD) over unshielded twisted pair cable. The PoE converters are Power Sourcing Equipment (PSE) and are fully compatible with Powered Devices (PD) that comply with the IEEE 802.3af standard. The converters also includes a PD signature sensing and power monitoring feature per the IEEE 802.3af standard. This feature enhanced model offers the ability to enable/disable many of the features as well as force port capabilities (see switches section under Specifications).

In addition, with the PSE/LPT switch enabled, a loss of Fiber RX will disable PSE power output on the UTP port for 2 seconds to allow remote device to re-initialize, also known as Powered Device Reset. The PoE converter is fully compatible with devices that comply with the IEEE 802.3af standard as well as select legacy PDs. The PoE converter is capable of inserting power on data mode A or mode B pairs of the MDI.

Features

- SFP ports support either 100Base or 1000Base fiber
- Redundant SFP port option
- IEEE 802.3af Power-over-Ethernet Compatible
- 48 VDC PSE Output Voltage
- Mode A or Mode B Pairs Power Insertion
- PD Detection Signature
- PoE Legacy Detect for non-IEEE 802.3af compatible Powered Devices (PD)
- Over-Current Protection
- Under-Current Detection
- Powered Device Reset
- Minimum Load Sensing
- Fault Protection Input
- Auto-Negotiation
- Auto-MDI/MDIX
- Link Pass Through
- Automatic Link Restoration
- External AC power supply

Specifications

Standards	IEEE 802.3 IEEE 802.3af
MAC Addresses	8K
Max Packet Size	1632 bytes untagged 1628 bytes tagged
Switches	SW1: Auto-Negotiation TP On/Off SW2: Speed TP: Force 10 Mbps or 100 Mbps (SW1 off) SW3: Duplex TP: Force Half or Full-Duplex (SW1 off) SW4: Duplex Fiber: Half or Full-Duplex SW5: Auto-MDI/MDIX On/Off SW6: PSE On/Off SW7: PSE/LPT on/off SW8: Unused
Dimensions	Width: 4.4" [112 mm] Depth: 5.1" [129 mm] Height: 1" [25 mm]
Power Consumption	20 Watts (max)
Power Supply	External AC/DC required; 48 VDC 0.67A Output; 90 – 250VAC external power supply input
Environment	Operating: 0°C to 40°C Storage: -25°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	Greater than 41,660 MIL217F2 Hours Greater than 114,580 Bellcore Hours
Certifications	EN55022:1994+A1:1996+A2:1997 Class A, FCC Part 15 Subpart B, UL 1950
Warranty	Lifetime

Ordering Information

SGPOE1013-100
10/100/1000Base-T PoE (RJ-45)
[100 m/328 ft.]
to 1000Base-SX 850nm multimode (SC)
[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

SGPOE1039-100
10/100/1000Base-T PoE (RJ-45)
[100 m/328 ft.]
to 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

SGPOE1040-100
10/100/1000Base-T PoE (RJ-45)
[100 m/328 ft.]
to 100/1000Base-X SFP Slot (empty)

Optional Accessories (sold separately)

SFP Modules

Mounting Options (sold separately)

WMBD
DIN Rail Mount Bracket 5" [127 mm]

WMBL
Wall Mount Bracket 4" [102 mm]

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: SGPOE1013-100-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Stand-alone Fast & Gigabit Ethernet PoE / PoE+ Media Converter

10/100/1000Base-T PoE+ PSE to 1000Base-X

The SGPAT Series is a 10/100/1000Base-T to 100/1000Base-SX/LX Gigabit Ethernet Media Converter, that easily and affordably facilitates the connection between different types of network cabling, while also injecting PoE power through the copper RJ-45 port.

Being a Power Sourcing Equipment (PSE) device, the SGPAT media converter combines data received over a fiber optic link with 56VDC input power to provide power and data to a Powered Device (PD) over twisted pair cabling while complying with the IEEE 802.3af PoE and IEEE 802.3at PoE+ standard.

The converter is available in 2-port, 3-port, and 4-port versions and includes PD signature sensing and power monitoring features. Other features include over-current protection, under-current protection, and fault protection input. Active Link Pass Through (ALPT) is supported, which is an automatically activated version of Link Pass Through (LPT) that allows the converter to detect the loss of Receive (Rx) signals on either fiber or copper port and propagate the failure to the end devices, preventing the media converter from isolating those link failures. During a Link Pass Through event, the Auto Power Reset feature will re-set the power to the end PD device, ensuring it is ready to go when the LPT event is corrected.

Features

- Wall mount, DIN Rail, or table top
- External AC/DC power supply included
- 2-port 10/100/1000 copper to fiber media conversion with IEEE 802.3at PoE+ on the copper port
- Supports full 30 Watts of power to each twisted pair port
- Various fiber versions available supporting fixed SC, LC, and open SFP
- 3-port version offers (1) RJ-45 PoE+ port and (2) open SFP slots, device can be configured as a 3-port switch or as a 2-port media converter with redundant fiber links
- With redundant fiber enabled, supports a 50ms fail-over time
- 4-port version offers (2) RJ-45 PoE+ ports and (2) open SFP slots, device can be configured as a 4-port switch (with or without redundant fiber) or as two independent PoE+ media converters in one housing
- SFP slots can support 100Base-FX, 1000Base-X, or SGMII based (MSA compliant) SFP modules
- Supports Auto-Negotiation, Auto-MDI/MDIX, Active Link Pass Through (ALPT), and Remote Fault Detection
- Jumbo frame support
- LEDs indicators for power status; per port link, duplex, and activity status; and PoE status
- Legacy PoE status

Specifications

Standards	IEEE 802.3-2012 IEEE 802.at PSE-PoE+ IEEE 802.3ab IEEE 802.3x	IEEE 802.3af PSE-PoE IEEE 802.3U IEEE 802.3z IEEE 802.3az
Switch Features	Max Packet Size: 10,000 bytes Max MAC Addresses: 8k Shared buffer memory: 1Mbit	
Dip Switches	See user manual for complete dip switch functionality	
Status LEDs	PWR: Power being applied to converter PoE+: PoE+ Status TP – Left LED per Port: Copper Port Link Status TP – Right LED per port: Copper Port Speed Status Fiber L/A – per port: Fiber Port Link Status (See user manual for complete LED Descriptors)	
Dimensions	Width: 3.25" [82 mm] Depth: 4.8" [122 mm] Height: 1" [25 mm]	
Power Source	External AC/DC 56VDC power adapter	
Power Consumption	56VDC, 1.17A, 65.5 Watts (assumes both PoE ports are delivering the full 30 Watts)	
Environment	Operating: 0°C to +45°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft. (with de-rating)	
Weight	2 lbs. [0.9 kg]	
MTBF	Without power supply: 163000 Hrs. (MIL-HDBK 217F) 450000 Hrs. (Bellcore) With power supply: 42000 Hrs. (MIL-HDBK 217F) 115000 Hrs. (Bellcore)	
Certifications	EN55022 Class A, EN55024, CE Mark, Power Supply is UL listed	
Warranty	Lifetime	

Ordering Information

SGPAT1013-105
10/100/1000Base-T PoE+ (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (SC) [62.5/125um: 220m / 722 ft.] [50/125um: 550m / 1804 ft.] Link Budget: 8.5dB

SGPAT1039-105
10/100/1000Base-T PoE+ (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (LC) [62.5/125um: 220m / 722 ft.] [50/125um: 550m / 1804 ft.] Link Budget: 8.0dB

SGPAT1040-105
10/100/1000Base-T PoE+ (RJ-45) [100 m/328 ft.] to 100/1000Base-X Open SFP Slot

SGPAT1040-205
(1) 10/100/1000Base-T PoE+ (RJ-45) [100 m/328 ft.] to (2) 100/1000Base-X Open SFP Slot

SGPAT1040-305
(2) 10/100/1000Base-T PoE+ (RJ-45) [100 m/328 ft.] to (2) 100/1000Base-X Open SFP Slot

Optional Accessories (sold separately)

SFP Modules

Cable-CCC-06
Cisco DB9 to RJ-45 Console Cable, Blue 6 ft.

Mounting Options (sold separately)

WMBL
Wall Mount Bracket 4" [102 mm]

WMBD
DIN Rail Bracket 5" [127 mm]

RMS19-SA4-02
4-Slot Media Converter Shelf

Features Continued

- Twisted pair ports support IEEE 802.3az Energy Efficient Ethernet for power saving
- Dip switch control of basic feature configuration
- RJ-45 serial port for Command Line Interface (CLI) of advanced port configuration (115200 baud)

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: SGPAT1013-105-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Stand-alone Gigabit Ethernet Remotely Managed NID

10/100/1000Base-T to 1000Base-X with OAM/IP-Based Management

S3220-1040

The ION S3220 is a stand-alone managed Network Interface Device (NID) that provides an interface between 10/100/1000Base-TX ports and 1000Base-SX/LX ports, allowing users to manage their links while integrating fiber optic cabling into 10/100/1000 copper environments. As a remotely managed device, the S3220 can be managed individually via an IP address or it can be managed in-band, over the fiber when linked to a C3220 card installed in a managed ION chassis. With advanced features like IEEE 802.3ah Link OAM, VLAN, QoS, SSH/SSL, jumbo frame support, and bandwidth allocation, the S3220 offers a variety of methods for the secure delivery of Ethernet services in business and mobile backhaul applications.

Features

- MEF 9, 14 and 21 certified
- IEEE 802.3ah Link OAM
- 10K Jumbo Frame Support
- Two selectable Remote Management modes:
  - IP-Based Remote Management
  - In-Band (remote device managed by local peer)
- Auto-MDI/MDIX
- Auto-Negotiation
- Pause
- Transparent Link Pass Through
- Far-End-Fault (FEF)
- Remote Loopback
- Field Upgradeable Firmware
- IEEE 802.1p QoS packet classification
- IPv4 IP TOS, DiffServ and IPv6 traffic class QoS classification
- IEEE 802.1Q VLAN and double VLAN tagging with 4096 VIDs
- DHCP client
- SNTP
- TFTP
- RADIUS client
- RMON counters for each port
- Bandwidth profiling
- DMI Optical Management
- Cable diagnostic function for copper ports

Specifications

Standards	IEEE 802.3 IEEE 802.3ah IEEE 802.1p IEEE 802.1Q
Data Rate	Copper: 10/100/1000 Mbps Fiber: 1000 Mbps
Filtering Address	8K MAC Addresses
Max Frame Size	10,240 bytes
Dimensions	Width: 3.25" [82 mm] Depth: 6.5" [165 mm] Height: 1" [25 mm]
Power Input	100-240 VAC,1A
Power Output	12 VDC, 1.25A
Environment	Operating: 0°C to +50°C Storage: -25° to +85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft. S3221-1040-T Operating: -40°C to +65°C Storage: -40° to +85°C
Weight	2 lbs. [0.90 kg]
MTBF	With Power Supply: 65,000 Hours (MIL-HDBK-217F) 178,000 Hours (Bellcore) Without Power Supply: 250,000 Hours (MIL-HDBK-217F) 687,500 Hours (Bellcore)
Certifications	EN55022 Class A, EN55024, UL60950, CE Mark
Warranty	Lifetime

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: S3220-1013-NA

-NA = Country Code
-NA = North America, -LA = Latin America
-EU = Europe, -UK = United Kingdom
-SA = South Africa, -JP = Japan
-OZ = Australia, -BR = Brazil

Ordering Information

S3220-1013
10/100/1000Base-T (RJ-45) [100 m] to 1000Base-SX 850nm multimode (SC) [62.5/125 µm fiber: 220 m/722 ft.] [50/125 µm fiber: 550 m/1804 ft.] Link Budget: 8.5 dB

S3220-1014
10/100/1000Base-T (RJ-45) [100 m] to 1000Base-LX 1310nm single mode (SC) [10 km/6.2 mi.] Link Budget: 10.5 dB

***S3220-1040**
10/100/1000Base-T (RJ-45) [100 m] to (1) 100/1000Base-X Open SFP Slot

***S3221-1040**
10/100/1000Base-T (RJ-45) [100 m] to (2) 100/1000Base-X Open SFP Slots

***S3221-1040-T**
10/100/1000Base-T (RJ-45) [100 m] to (2) 100/1000Base-x Open SFP Slots, Extended Operating Temp Range

Optional Accessories (sold separately)

SFP Modules

Mounting Options (sold separately)

WMBL
Wall Mount Bracket 4" [102 mm]

WMBD
DIN Rail Bracket 5" [127 mm]

RMS19-SA4-02
4-Slot Media Converter Shelf

Note: all units feature USB port for local management application.

*S3220-1040, S3221-1040, and S3221-1040-T have SGMII support for use with 10/100/1000Base-T copper SFPs.

S3221-1040-T must use extended temperature SFP modules in order to meet the -40° to +65°C operating temperature range.

Features Continued

- SSH
- Telnet
- Command Line Interface (CLI)
- Web management
- Focal Point Management
- SNMP v1, v2c, and v3
- USB port for basic setup
- Management VLAN

Stand-alone Gigabit Ethernet Remotely Managed NID

10/100/1000Base-T to 1000Base-X with OAM/IP-Based Management

S3231-1040

The ION S3230 is a stand-alone managed multi-service Network Interface Device (NID) that provides an interface between 10/100/1000Base-TX ports and 1000Base-SX/LX ports, allowing users to provide SLA-assurance and advanced fault management while integrating fiber optic cabling into 10/100/1000 copper environments. As a remotely managed device, the S3230 can be managed individually via an IP address or it can be managed in-band, over the fiber when linked to a C3230 card installed in a managed ION chassis. With advanced features like IEEE 802.1ag Service OAM, IEEE 802.3ah Link OAM, ITU Y.1731 Performance Monitoring, VLAN, QoS, SSH/SSL, jumbo frame support, and bandwidth allocation, the S3230 offers a variety of methods for the secure delivery of business Ethernet and mobile backhaul deployments.

Ordering Information

S3230-1040
10/100/1000Base-T (RJ-45) [100 m]
to (1) 100/1000Base-X SFP Slot (empty)

S3231-1040
10/100/1000Base-T (RJ-45) [100 m]
to (2) 100/1000Base-X SFP Slots (empty)

Optional Accessories (sold separately)

SFP Modules

Mounting Options (sold separately)

WMBL
Wall Mount Bracket 4" [102 mm]

RMS19-SA4-02
4-Slot Media Converter Shelf

Note: all units feature USB port for local management application and have SGMII support for use with 10/100/1000Base-T copper SFPs.

Features

- MEF 9, 14 and 21 certified
- IEEE 802.3ah Link OAM
- ITU Y.1731
- IEEE 802.1ag Service OAM
- 10K Jumbo Frame Support
- Two selectable Remote Management modes:
  - IP-Based Remote Management
  - In-Band (remote device managed by local peer)
- Auto-MDI/MDIX
- Auto-Negotiation
- Pause
- Transparent Link Pass Through
- Far-End-Fault (FEF)
- Remote Loopback
- Field Upgradeable Firmware
- IEEE 802.1p QoS packet classification
- IPv4 IP TOS, DiffServ and IPv6 traffic class QoS classification
- IEEE 802.1Q VLAN and double VLAN tagging with 4096 VIDs
- DHCP client
- SNTP
- TFTP
- RADIUS client
- RMON counters for each port

Specifications

Standards	IEEE 802.3 IEEE 802.3ah IEEE 802.1ag IEEE 802.1p IEEE 802.1Q
Data Rate	Copper: 10/100/1000 Mbps Fiber: 1000 Mbps
Filtering Address	8K MAC Addresses
Max Frame Size	10,240 bytes
Dimensions	Width: 3.25" [82 mm] Depth: 6.5" [165 mm] Height: 1" [25 mm]
Power Input	100-240 VAC,1A
Power Output	12 VDC, 1.25A
Environment	Operating: 0°C to 50°C Storage: -25°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
Certifications	EN55022 Class A, EN55024, UL60950, CE Mark
Warranty	Lifetime

Features Continued

- Bandwidth profiling
- DMI Optical Management
- Cable diagnostic function for copper ports
- SSH
- Telnet
- Command Line Interface (CLI)
- Web management
- Focal Point Management
- SNMP v1, v2c, and v3
- USB port for basic setup
- Management VLAN

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: S3230-1040-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Stand-alone Fiber to Fiber Media Converter

1000Base-SX or 1000Base Fiber Channel

The SFMFF1314-220 stand-alone, when used individually or in pairs, functions as a mode converter that extends Gigabit Ethernet or Fiber Channel signals over single mode fiber up to 125 kilometers. The SFMFF1314-220 also converts 1000Base-SX ports on a Gigabit Ethernet switch to 1000Base-LX on a port-by-port basis.

Features

- Auto-Negotiation (1000Base-X ports)
- Link Pass Through
- Pause
- Automatic Link Restoration
- Protocol Transparency

Specifications

Standards	IEEE 802.3 ATM, OC-3 STM-1 HSTR FDDI
Fiber Optic Connectors	Multimode: Min TX PWR: -10.0 dBm Max TX PWR: -4.0 dBm RX Sensitivity: -17.0 dBm Max In PWR: 0.0 dBm Link Budget: 7.00 dB Single Mode: Min TX PWR: -13.0 dBm Max TX PWR: -3.0 dBm RX Sensitivity: -20.0 dBm Max In PWR: -3.0 dBm Link Budget: 7.00 dB
Status LEDs	Power: Lit for normal operation Port LKS (Single Mode fiber link): Steady LED indicates single mode fiber link Port LKM (Multimode fiber link): Steady LED indicates multimode fiber link
Dimensions	Width: 3.25” [82.55 mm] Depth: 4.7” [119.38 mm] Height: 1" [25 mm]
Power Supply	External AC/DC required 12VDC, 0.5 A; unregulated; standard; Output 12VDC, 1.0 A, 12 watts; 120-240VAC input
Environment	Operating: 0°C to 50°C Humidity: 5% to 90% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	41,666 hours (MIL217F2 V5.0) (MIL-HKBK-217F) 114.580 hours (Bellcore7 V5.0)
Certifications	Safety: Wall Mount Power Supply: UL listed and CSA certified Regulatory: FCC Class A & B, CISPR/EN55022 Class A & B, CE Mark
Warranty	Lifetime

Ordering Information

SFMFF1314-220
1000Base-SX 850nm multimode (SC) [62.5/125 µm fiber: 220 m/722 ft.] [50/125 µm fiber: 550 m/1804 ft.] Link Budget: 7.0 dB
to 1000Base-LX 1310nm single mode (SC) [10 km/6.2 mi.] Link Budget: 7.0 dB

Optional Accessories (sold separately)

Wide Input (24 - 60 VDC) Power Supplies (sold separately)

SPS-2460-PS
Piggy Back Power Supply

SPS-2460-SA
Stand-Alone Power Supply

Mounting Options (sold separately)

E-MCR-05
12-Slot Media Converter Rack

RMS19-SA4-02
4-Slot Media Converter Shelf

WMBD
DIN Rail Bracket 5" [127 mm]

WMBD-F
DIN Rail Bracket (flat) 3.3” [84 mm]

WMBL
Wall Mount Bracket 4" [102 mm]

WMBV
Vertical Wall Mount Bracket 5" [127 mm]

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: SFMFF1314-220-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Ethernet Over 2-Wire / Coax Gigabit Ethernet SFP Extender

MSA Compliant 1000Base-X, RJ-45

TN-EOT-RT TN-EOT-CO

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
Certifications	Safety: CE/FCC
Warranty	1 Year

Ethernet Over 2-Wire Extender With PoE+

(1) 10/100/1000Base RJ-45/SFP Combo Port + (1) 1000Base-T RJ-45 Port or 2-Wire Terminal Block

Local & Remote Must Be Used As a Pair

Transition Networks Ethernet Over 2-Wire Extender With PoE+ provides the ability to quickly and easily upgrade Ethernet networks with modern PoE powered IP devices without the need to replace the existing copper wire infrastructure. The extenders leverage existing 18-24 AWG unshielded twisted pair (CAT 5, CAT 3 and other twisted 2-wire phone wire) cabling infrastructure to extend the Ethernet network at half Gigabit speeds and provide data and power to IP devices in remote locations, saving time and money over installing new cable.

The Ethernet Over 2-Wire Extenders With PoE+ are used in pairs, with a local device at one end and a remote device at the other end of the copper link. The extenders provide flexibility for connecting to either copper or fiber Ethernet network equipment. The Local device offers a 10/100/1000Base-T RJ-45 and 100/1000Base-X open SFP combo port and a RJ-45 or 2-wire terminal block connection to provide safety extra low voltage (SELV) power over UTP or twisted 2-wire to the Remote device. The Remote device receives power through the RJ-45 or 2-wire terminal block connection and provides a 10/100/1000Base-T RJ-45 output with PoE+ power or a 100/1000Base-X open SFP combo port connection for IP cameras, wireless access points or other PoE powered end devices.

Power for the Local device can be supplied through a properly isolated +48VDC power source or through the designated 90 Watt power adapter. Power for the Remote device can be supplied with PoE from the Local unit, through a properly isolated +48VDC power source, or through the designated power adapter for providing redundant power or for additional power requirements at the Remote device.

The Ethernet Over 2-Wire Extenders With PoE+ are supplied with a web GUI, which allows password-protected access to various configuration options of both the Local and Remote devices through a single IP address. It also allows easy upgrades to firmware.

Features

- Copper or fiber combo Ethernet port
- IEEE 802.3af/at compliant Remote PoE+ port for powering cameras or other remote devices
- Full PoE+ at 335-1,500 ft. over a single pair or 1,500-6,800 ft. over multiple pairs* (dependent on cable type)
- Half-Gigabit Ethernet speeds over UTP cable at distances of 330 feet (100m) or Fast Ethernet speeds at approximately 1800 feet (550m) (dependent on wire gauge*)
- Proprietary SELV classification prevents unintended power delivery to non-Transition Networks devices
- Power monitoring
- Auto Power Reset (APR) and power-saving mode

*Minimum distance stated is 24 AWG cable DC resistance of 29.9 ohm per 1000 ft. Cable with less DC resistance will increase distance. Use of multiple pairs vs a single twisted pair will increase distance and available power. To determine power distance for specific cable types, refer to online calculator.

Specifications

Standards	IEEE 802.1p IEEE 802.3 IEEE 802.3af/at IEEE 802.3u IEEE 802.3z	IEEE 802.1Q IEEE 802.3ab IEEE 802.3az IEEE 802.3x
Ports	Ethernet: 10/100/1000Base-T RJ-45 or 100/1000Base-X SFP Combo 2-Wire: 10/100/1000Base-T RJ-45 or 2-wire terminal block PoE: 10/100/1000Base-T RJ-45 PoE+	
Status LEDs	Power, Copper Power, Copper ACT, Copper Security, Combo Port Link/ACT, PoE+	
Dimensions	Width: 3.25" [82.5 mm] Depth: 5.38" [136.7 mm] Height: 1.25" [31.75 mm]	
Power Consumption	45 Watts (max) EO2PSE 4 Watts EO2PD 4.4 Watts	
Power Input	48 VDC	
Ingress Protection	IP30	
Environment	Operating: 0°C to +65°C (Industrial +85°C SFP modules must be used above 50°C ambient temperature) Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.	
Weight	1.05 lbs. [0.48 kg]	
MTBF	Greater than 200,000 MIL-HDBK-217F Hours	
Certifications	Safety: External Power Supply: CE Mark; Emissions: FCC Part 15, CISPR22/EN55022 Class A; Immunity: EN55024	
Warranty	5 Years	

Ordering Information

ONE LOCAL UNIT MUST BE PAIRED WITH ONE REMOTE UNIT

***EO2PSE4052-111 (Local)**
(1) 10/100/1000Base-T RJ-45 port
or (1) 100/1000Base-X SFP combo port
+ (1) 10/100/1000Base RJ-45
or 2-Wire Terminal Block combo port

***EO2PD4052-111 (Remote)**
(1) 10/100/1000Base-T RJ-45 port
or 2-Wire Terminal Block combo port
+ (1) 10/100/1000Base-T IEEE 802.3af/at
or (1) 100/1000Base-X SFP combo port

*Note: Local and Remote must be used as a pair. A properly isolated power source is required for each Local unit and an external power supply is optional for Remote units depending on power requirements.

Industrial Power Supplies (sold separately)

25148 (Power Adapter)
90 ~ 264 VAC; 127 ~ 370 VDC
(Country specific power cord included)

Optional Accessories (sold separately)

SFP Modules

Mounting Options (sold separately)

WMBL
Wall Mount Bracket 4" [102 mm]

WMBD
DIN Rail Bracket 5" [127 mm]

WMBD-F
DIN Rail Bracket (flat) 3.3" [82 mm]

WMBV
Vertical Wall Mount Bracket 5" [127 mm]

RMS19-SA4-02
4-Slot Media Converter Shelf, includes 4 brackets and 3 slot blanks

Features Continued

- Web browser configurable
- Plug-and-Play installation
- Field upgradeable firmware
- Can be managed through a single IP address
- Auto-MDI/MDIX
- 128 Bit AES encryption over 2-wire
- IPv4 and IPv6 supported
- Client for DHCP, DNS, NTP
- Connection for optional power on Remote device
- Preserves investment in existing UTP or twisted 2-wire infrastructure

EOCPSE4020-110 & EOCPD4020-110

Ethernet Over Coax Extender With PoE+

(1) 100/1000Base RJ-45/SFP Combo Port + (1) 1000Base Coax BNC Port

Local & Remote Must Be Used As a Pair

Transition Networks Ethernet Over Coax Extender With PoE+ provides the ability to quickly and easily upgrade older analog surveillance systems with modern PoE powered IP video cameras without the need to replace the wiring infrastructure. These products leverage the existing CCTV 75 ohm coax infrastructure to extend the Ethernet network and provide power to remote camera locations, saving time and money over installing new cable. These extenders communicate at near Gigabit speeds and can also be used in other applications besides surveillance to extend Ethernet networks over an existing coax infrastructure.

The Ethernet Over Coax Extenders with PoE+ are used as a pair of devices, with a local device at one end and a remote device the other end of the coax cable. The extenders provide flexibility for connecting to either copper or fiber Ethernet network equipment. The Local device offers both a 10/100/1000Base-T RJ-45 and 100/1000Base-X SFP connection, and provides a Gigabit BNC connection with power over coax to the Remote device. The Remote device receives power over coax through the BNC connection and provides both a 100/1000Base-X SFP and a 10/100/1000Base-T RJ-45 connector output with PoE+ power for IP cameras, wireless access points or other PoE powered end devices. Power for the Local device can be supplied through a properly isolated +48VDC power source or through the designated 90 Watt power adapter. The designated power adapter is optional for providing redundant power at the Remote device.

The Ethernet Over Coax Extenders With PoE+ are supplied with a web GUI, which allows password-protected access to various configuration options of both the Local and Remote devices through a single IP address. It also allows easy upgrades to firmware.

Features

- Copper or fiber combo Ethernet port
- Remote PoE+ Port IEEE 802.3at for powering cameras or other remote devices
- Full PoE+ at 400 ft. or less* (dependent on cable type)
- Coax distance in excess of 1000 ft. at near Gigabit speeds or 2000 ft. at Fast Ethernet speeds (dependent on remote power requirements)
- Proprietary coax end device classification prevents unintended power delivery to non-Transition Networks devices
- Power monitoring
- Auto Power Reset (APR) and power-saving mode
- Web browser configurable

*Typical RG59U cable DC resistance of 50 ohm per 1000 ft. Cable with less DC resistance may increase distance. To determine power distance for specific cable types, refer to online calculator.

Specifications

Standards	IEEE 802.1p IEEE 802.3 IEEE 802.3af/at IEEE 802.3u IEEE 802.3z	IEEE 802.1Q IEEE 802.3ab IEEE 802.3az IEEE 802.3x
Ports	Ethernet: 10/100/1000Base-T RJ-45 or 100/1000Base-X SFP Combo Coax: 1000Base BNC PoE: 10/100/1000Base-T RJ-45 PoE+	
Status LEDs	Power, Coax Power, Coax ACT, Coax Security, Combo Port Link/ACT, PoE+	
Dimensions	Width: 3.25" [82.5 mm] Height: 1.25" [31.75 mm] Depth: 5.38" [136.7 mm]	
Power Consumption	45 Watts (max) EOCPSE 4 Watts EOCPD 4.4 Watts	
Power Input	48 VDC	
Ingress Protection	IP30	
Environment	Operating: 0°C to +65°C (Industrial +85°C SFP modules must be used above 50°C ambient temperature) Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.	
Weight	1.05 lbs. [0.48 kg]	
MTBF	Greater than 200,000 MIL-HDBK-217F Hours	
Certifications	Safety: External Power Supply: CE Mark; Emissions: FCC Part 15, CISPR22/EN55022 Class A; Immunity: EN55024	
Warranty	5 Years	

Ordering Information

ONE LOCAL UNIT MUST BE PAIRED WITH ONE REMOTE UNIT

***EOCPSE4020-110 (Local)**
(1) 10/100/1000Base-T port
or (1) 100/1000Base-X SFP combo port
+ (1) 1000Base BNC port

***EOCPD4020-110 (Remote)**
(1) 10/100/1000Base-T PoE+ port
IEEE 802.3af/at
or (1) 100/1000Base-X SFP combo port
+ (1) 1000Base BNC port

*Notes: Local and Remote must be used as a pair. A properly isolated power source is required for each Local unit and an external power supply is optional for Remote units depending on power requirements.

Industrial Power Supplies (sold separately)

25148 (Power Adapter)
90 ~ 264 VAC; 127 ~ 370 VDC
(Country specific power cord included)

Optional Accessories (sold separately)

SFP Modules

Mounting Options (sold separately)

WMBL
Wall Mount Bracket 4" [102 mm]

WMBD
DIN Rail Bracket 5" [127 mm]

WMBD-F
DIN Rail Bracket (flat) 3.3" [82 mm]

WMBV
Vertical Wall Mount Bracket 5" [127 mm]

RMS19-SA4-02
4-Slot Media Converter Shelf, includes 4 brackets and 3 slot blanks

Features Continued

- Plug-and-Play installation
- Field upgradeable firmware
- Managed through a single IP address
- Auto-MDI/MDIX
- 128 Bit AES encryption over coax
- IPv4 and IPv6 supported
- 1518 Byte frames
- Client for DHCP, DNS, NTP
- Connection for optional power on Remote device
- Preserves investment in existing coax infrastructure

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Stand-alone Fiber to Fiber Media Converter

SFP+ to SFP+ for Data Rates from 1 Gbps to 11.5 Gbps

S4110-4848

The S4110 is a stand-alone fiber to fiber media converter. It is protocol independent and supports data rates from 1Gbps to 11.5Gbps through two open SFP+ slots. This allows network managers to customize the S4110 with a pair of SFP+ modules to meet their network requirements. The open SFP+ ports support a wide variety of Transition Networks 10GE SFP+ fiber modules. This any-rate to same-rate converter can be used to perform reliable and cost-effective single mode to multimode conversion or it can be used to provide wavelength conversion in CWDM applications.

Features

- Fiber to fiber repeater
- Supports data rates from 1Gbps to 11.5Gbps
- Support any-rate to same-rate
- Protocol Transparent, supports:
  - Ethernet: 10Gig LAN, 10Gig Wan, 1Gig LAN
  - Fiber Channel: 10, 8, 4, 2, 1Gig
  - SONET/SDN OC-192, OC-48
- SFP to SFP or SFP+ to SFP+
- Provides conversion between different types of fiber
- Supported transmission distance based on the SFP modules and fiber type used
- Supports 3R (Reamplify, Reshape, and Retime) signal regeneration
- No frame size limitations
- Use as a fiber mode converter
- Use as a specific wavelength CWDM Transponder
- Also available as an ION slide-in card: C4110-4848

Specifications

Standards	IEEE 802.3ae ITU.G.709 SFF8431 Multi-sourcing Agreement (MSA) Small Form Factor Pluggable (SFP)
TDM Port (T1)	PWR: On = Power Port 1 Link/Act: On = Link, Flashing = Network Traffic Port 2 Link/Act: On = Link, Flashing = Network Traffic
Data Rate	Protocol Independent, 1Gbps to 11.5Gbps
Dip Switches	Only 4 of the 8 Dip Switches are used to select the operational data rate, see the user guide for the supported dip switch configurations
Dimensions	Width: 3.25" [82 mm] Depth: 6.5" [165 mm] Height: 1" [25 mm]
Power Consumption	4.2W (350mA @12V)
Power Supply	External AC/DC power supply, Universal AC 120-240VAC input, 12VDC 1.5A output
Environment	Operating: 0°C to 50°C Storage: -40° to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	With Power Supply: Greater than 41,660 hours (MIL-HDBK-217F) Greater than 114,580 hours (Bellcore) Without Power Supply: Greater than 250,000 hours (MIL-HDBK-217F) Greater than 687,000 hours (Bellcore)
Certifications	FCC Class A, CE Mark, EN55022 Class A, EN55024
Warranty	Lifetime

Ordering Information

S4110-4848
1 Gbps to 11.5Gbps fiber repeater with two open SFP+ slots, any-rate to same-rate stand-alone media converter

Optional Accessories (sold separately)

SFP Modules
SFP and SFP+ modules supported

Mounting Options (sold separately)

WMBL
Wall Mount Bracket 4" [102mm]

WMBD
DIN Rail Bracket 5" [127mm]

E-MCR-05
12 Slot Media Converter Rack

RMS19-SA4-02
4 Slot Media Converter Shelf

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: S4110-4848-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Stand-alone 10 Gigabit Ethernet Media Converter

10GBase-T Copper to Fiber

The S4120 is a stand-alone media converter that provides an interface between 10GBase-T ports and 10GBase-X ports via an open SFP+ slot, allowing users to convert their 10Gig Ethernet ports to the preferred type of cabling used in their networks. The open SFP+ slot supports a wide variety of Transition Networks 10GE SFP+ fiber modules. Operating at Layer 1, the physical layer, data is passed through the converter at line speed, making the S4120 ideal for applications where low latency is essential. The ION S4120 can be managed, in-band, over the fiber, when it is linked back to a C4120 card installed in a managed ION chassis.

Features

- Transparent Link Pass Through
- Auto-Negotiation
- Auto-MDI/MDIX
- Automatic Link Restoration
- Loopback on Fiber and Copper
- DMI
- Support Remote In-band Management and Remote Firmware Upgrade when linked to a C4120 card installed in a managed ION chassis
- Fiber Port supported standards
  - 10GBase-SR
  - 10GBase-LRM
  - 10GBase-LR
  - 10GBase-ER
  - 10GBase-ZR
- The open SFP+ port also supports:
  - Direct attached 10G copper cable assemblies:
  - Both Class-I and Class-II fiber
  - SFP+ modules
  - SFP modules supporting WDM technology
- Support 100m on Cat6a or higher UTP Per Energy Efficient Ethernet standards, IEEE 802.3az, UTP cable length is detected and power is adjusted according, to reduce power consumption on shorter UTP cable installs

Specifications

Standards	IEEE 802.3 IEEE 802.3an IEEE 802.3ae IEEE 802.3az
Data Rate	10 Gbps
Dip Switches	SW1: Copper Loopback SW2: Fiber Loopback SW3: not used SW4: Transparent Link Pass Through
Status LEDs	PWR (Power): On = power is on L/A SFP+ (Fiber port link and activity statue): On = Link OK Flashing = Link and Activity OK Copper Link (Copper Link Status): On = Link OK Copper Act (Copper Link Activity): On = Activity OK
Dimensions	Width: 3.25” [82.55 mm] Depth: 6.5” [165 mm] Height: 1" [25.4 mm]
Power Consumption	10.5 Watts
Power Supply	External AC/DC power supply, Universal AC input, 12VDC 1.6A output
Environment	Operating: 0°C to 50°C Storage: -15°C to 65°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	lbs. [0.91 kg]
MTBF	With Power Supply: Greater than 41,660 hours (MIL-HDBK-217F) Greater than 114,580 hours (Bellcore) Without Power Supply: Greater than 250,000 hours (MIL-HDBK-217F) Greater than 687,000 hours (Bellcore)
Certifications	FCC Class A, EN55022 Class A, EN55024, CE Mark
Warranty	Lifetime

Ordering Information

S4120-1048
10GBase-T RJ-45 100m
to 10GBase-X SFP+ Slot (Empty)

Optional Accessories (sold separately)

SFP+ Modules
Supports 10G SFP+ Modules

Mounting Brackets (sold separately)

WMBL
Wall Mount Bracket 4" [102 mm]

WMBD
5" [127 mm] DIN Rail Mount Bracket

E-MCR-05
12-Slot Media Converter Rack

RMS19-SA4-02
4-Slot Media Converter Shelf

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: S4120-1048-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Stand-alone DS1 - T1/E1 Remotely Managed NID

DS1 - T1/E1 over Fiber

S6010-1040

The ION S6010 is a stand-alone managed media converter that offers a solution for extending DS1 - T1/E1 or PRI connections over fiber optic cabling. It provides fiber extension though a twisted pair RJ-48 port and a fiber port. These DS1 - T1/E1 converters must be used in pairs, one on each end of the fiber link. Management of the stand-alone converter is supported, in-band, over the fiber, when the remote S6010 is linked to a C6010 card installed in a managed ION Chassis. These DS1 - T1/E1 converters are available with fixed fiber connectors or an open SFP slot, with support for various fiber types, distances, and wavelengths to provide maximum flexibility for any network topology. CWDM SFPs can also be used to further increase the bandwidth capacity of the fiber infrastructure.

Features

- Remote in-band management
- Local or Remote Loopbacks - Copper or Fiber
- Switch selectable for T1 or E1
- Remote firmware upgrade
- LEDs for immediate visual status
- Supports dual or single fiber
- Supports multimode and single mode
  fiber at a variety of distances
- Supports CWDM SFPs
- SNMP management when used with ION chassis and management module
- Remote stand-alone can be managed by local peer
- Extend PRI over fiber
- Must be used in pairs

Specifications

Standards	ANSI T1.102 T1.402 T1.408 ITU I.431 G.703 G.736 G.775 G.823 ETSI 300-166 300-233 TBR12/12
Copper Connectors	RJ-48, BNC
Fiber Connectors	SFP: LC connector Uses standard 100Base-X/OC-3 SFP Fixed Optics: ST or SC connector
Data Rates	T1 = 1.544 Mbit/s, E1 = 2.048 Mbit/s
Status LEDs	Power, Signal Detect Copper, Signal Detect Fiber
Dimensions	Width: 3.25” [82 mm] Depth: 6.5” [165 mm] Height: 1" [25 mm]
Power Consumption	2.6 Watts
Power Input	100-240 VAC
Power Output	12 VDC
Environment	Operating: -10°C to 65°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	With Power Supply: Greater than 41,660 hours (MIL-HDBD-217F) Greater than 114,580 hours (Bellcore) Without Power Supply: Greater than 250,000 hours (MIL-HDBD-217F) Greater than 687,000 hours (Bellcore)
Certifications	CISPR/EN55022 Class A, FCC Class A, CE Mark, UL60950
Warranty	Lifetime

Ordering Information

S6010-1011
Twisted Pair (RJ-48) [1.5 km/0.9 mi.] to 1300nm multimode (ST) [2 km/1.2 mi.] Link Budget: 11.0 dB

S6010-1013
Twisted Pair (RJ-48) [1.5 km/0.9 mi.] to 1300nm multimode (SC) [2 km/1.2 mi.] Link Budget: 12.0 dB

S6010-1014
Twisted Pair (RJ-48) [1.5 km/0.9 mi.] to 1310nm single mode (SC) [20 km/12.4 mi.] Link Budget: 16.0 dB

S6010-1040
Twisted Pair (RJ-48) [1.5 km/0.9 mi.] to *SFP slot (empty)

S6010-3040
(2) Coax (BNC) to *SFP slot (empty)

Optional Accessories (sold separately)

SFP Modules

Wide Input (24 - 60VDC) Power Supplies (sold separately)

SPS-2460-SA
Stand-Alone Power Supply

Mounting Options (sold separately)

WMBL
Wall Mount Bracket 4" [102 mm]

WMBD
DIN Rail Bracket 5" [127 mm]

E-MCR-05
12-Slot Media Converter Rack

RMS19-SA4-02
4-Slot Media Converter Shelf

*SFP port uses standard 100Base-x/oc-3 SFP

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: S6010-1011-NA

-NA = Country Code
NA = North America, LA = Latin America, EU = Europe, UK = United Kingdom, SA = South Africa, JP = Japan, OZ = Australia, BR = Brazil

Stand-alone DS1 - T1/E1/J1 Network Interface Device

4 x DS1 - T1/E1/J1 over Fiber

S6110-1014

The ION S6110 is a managed stand-alone DS1 - T1/E1/J1 media converter mux that provides a solution for those users that need to extend multiple DS1 - T1/E1/J1 connections over fiber. The S6110 includes (4) RJ-48 ports and (1) fiber port. The device is available in versions that support fixed fiber connectors as well as SFP fiber modules offering support for a variety of fiber types, distances, and wavelengths to provide maximum flexibility across a variety of network topologies. CWDM SFPs can also be utilized to further increase the bandwidth capacity of the fiber infrastructure.

The S6110 converter must be used in pairs. Management of the stand-alone converter is supported, in-band, over the fiber, when the remote S6110 is linked to a C6110 card installed in a managed ION chassis.

Features

- (4) RJ-48 copper interfaces
- (1) fiber interface (fixed or SFP)
- Loopback via test set
- Local and remote loopbacks
- LEDs for device status and troubleshooting
- Settings for line code, line build out, loopbacks and Alarm Indication Signal (AIS)
- Access to complete status and configuration on local and remote device
- Remote firmware upgrade
- Remote management
- Extended operating temperature
- Must be used in pairs

Specifications

Standards	ANSI T1.102 T1.403 T1.408 ITU I.431 G.703 G.736 G.775 G.823 ETSI 300-166 300-233 TBR 12/13 AT&T Pub 62411
Data Rate	Copper ports (RJ-48): T1(J1) = 1.544Mb/s, E1 = 2.048Mb/s SFP port(s) (empty): 100Base-X/OC-3
Switches	Numerous switch settings for line coding, line build out, loopback and AIS
Status LEDs	Power, Port Status, Loopback and AIS
Dimensions	Width: 3.7” [94 mm] Depth: 6.5” [165 mm] Height: 1.8” [46 mm]
Power Consumption	6 Watts (max) for dual fiber model 5.5 Watts (max) for single fiber model
Power Input	AC: 12 VDC via barrel connector using 100-240VAC, UL listed power supply
Environment	Operating: -10°C to 65°C Storage: -40°C to +85°C Humidity: 5% to 95% (non-condensing)
Weight	2 lbs. [0.90 kg]
MTBF	114,580 hours (Bellcore)
Certifications	EN55022 Class A, EN55024, CE mark
Warranty	Lifetime

Ordering Information

S6110-1014
1310nm single mode (SC) [20 km/12.4 mi.]
Link Budget: 16.0 dB
to (4) RJ-48 [1.5 km/0.9 mi.]

S6110-1040
1 SFP port (Empty)
to (4) RJ-48 [1.5 km/0.9 mi.]
(SFP port uses standard 100Base-x/oc-3 SFP)

Optional Accessories (sold separately)

SFP Modules

Wide Input (24 - 60VDC) Power Supplies (sold separately)

SPS-2460-SA
Stand-Alone Power Supply

Mounting Options (sold separately)

WMBL
Wall Mount Bracket 4" [102 mm]

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: S6110-1014-NA

-NA = Country Code
NA = North America, LA = Latin America, EU = Europe, UK = United Kingdom, SA = South Africa, JP = Japan, OZ = Australia, BR = Brazil

Stand-alone DS1-T1/E1/J1 Network Interface Device

4 x DS1 - T1/E1/J1 + 10/100 Ethernet over Fiber

The ION S6120 is a managed stand-alone DS1 - T1/E1/J1 media converter mux that provides a solution for those users that need to extend multiple DS1 - T1/E1/J1 connections, along with a 10/100 Ethernet connection, all over fiber. The S6120 includes (4) RJ-48 ports, (1) 10/100 Ethernet port, and (1) fiber port. The device is available in versions that support fixed fiber connectors as well as SFP fiber modules offering support for a variety of fiber types, distances, and wavelengths to provide maximum flexibility across a variety of network topologies. CWDM SFPs can also be utilized to further increase the bandwidth capacity of the fiber infrastructure.

The S6120 converter must be used in pairs. Management of the stand-alone converter is supported, in-band, over the fiber, when the remote S6120 is linked to a C6120 card installed in a managed ION chassis.

Features

- (4) RJ-48 copper interfaces
- (1) fiber interface (fixed or SFP)
- (1) RJ-45 10/100Mbps Ethernet port
- Auto-MDI/MDIX
- Pause (Flow Control on Ethernet port)
- Loopback via test set
- Local and remote loopbacks
- LEDs for device status and troubleshooting
- Settings for line code, line build out, loopbacks and Alarm Indication Signal (AIS)
- Access to complete status and configuration on local and remote device
- Remote firmware upgrade
- Remote management
- Extended operating temperature
- Must be used in pairs

Specifications

Standards	ANSI T1.102 T1.403 and T1.408 ITU I.431 G.703 G.736 G.775 G.823 ETSI 300-166 300-233 TBR 12/13 AT&T Pub 62411 IEEE 802.3
Data Rate	Copper ports (RJ-48): T1(J1) = 1.544Mb/s, E1 = 2.048Mb/s Ethernet port (RJ-45): 10/100Mbps SFP port(s) (empty): 100Base-X/OC-3
Switches	Numerous switch settings for line coding, line build out, loopback and AIS
Status LEDs	Power, Port Status, Loopback and AIS
Dimensions	Width: 3.7” [94 mm] Depth: 6.5” [165 mm] Height: 1.8” [46 mm]
Power Consumption	6 Watts (max) for dual fiber model 5.5 Watts (max) for single fiber model
Power Input	AC: 12 VDC via barrel connector using 100-240VAC, UL listed power supply
Environment	Operating: -10°C to 65°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing)
Weight	2 lbs. [0.90 kg]
MTBF	114,580 hours (Bellcore)
Certifications	EN55022 Class A, EN55024, CE mark
Warranty	Lifetime

Ordering Information

S6120-1013
1300nm multimode (SC) [2 km/1.2 mi.]
Link Budget: 11.0 dB
to (4) RJ-48 [1.5 km/0.9 mi.]
+ 10/100Base-TX (RJ-45) [100m]

S6120-1014
1310nm single mode (SC) [20 km/12.4 mi.]
Link Budget: 16.0 dB
to (4) RJ-48 [1.5 km/0.9 mi.]
+ 10/100Base-TX (RJ-45) [100m]

S6120-1040
1 SFP port (Empty) to (4) RJ-48 [1.5 km/0.9 mi.]
+ 10/100Base-TX (RJ-45) [100m]
(SFP port uses standard 100Base-x/oc-3 SFP)

Optional Accessories (sold separately)

SFP Modules

Wide Input (24 - 60VDC) Power Supplies (sold separately)

SPS-2460-SA
Stand-Alone Power Supply

Mounting Options (sold separately)

WMBL
Wall Mount Bracket 4" [102 mm]

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: S6120-1013-NA

-NA = Country Code
NA = North America, LA = Latin America, EU = Europe, UK = United Kingdom, SA = South Africa, JP = Japan, OZ = Australia, BR = Brazil

Stand-alone DS3-T3/E3 Network Interface Device

DS3 – T3/E3 Coax over Fiber

S6210-3040

The ION S6210 is a managed stand-alone media converter that provides a solution for those users that need to extend DS3-T3/E3 connections over fiber. The S6210 is available in versions that support fixed fiber connectors as well as SFP fiber modules offering support for a variety of fiber types, distances, and wavelengths to provide maximum flexibility across a variety of network topologies. CWDM SFPs can also be utilized to further increase the bandwidth capacity of the fiber infrastructure.

The S6210 DS3-T3/E3 converters must be used in pairs. Management of the stand-alone converter is supported, in-band, over the fiber, when the remote S6210 is linked to a C6210 card installed in a managed ION chassis.

Features

- AIS (Alarm Indication Signal)
- Coax Line Build Out
- Switch selectable for DS3/T3 or E3
- Remote firmware upgrade
- Loopback – Coax and Fiber
- LEDs for immediate visual status
- Supports dual or single fiber
- Supports multimode and single mode
  fiber at a variety of distances
- Supports CWDM SFPs
- SNMP management when used with ION chassis and management module
- Remote stand-alone can be managed
  by local chassis card
- Must be used in pairs

Specifications

Standards	ANSI ITU-TS ETSI G.823 for jitter tolerance G.755 for loss of signal
Coax Connectors	75 ohm coax
Fiber Connectors	SFP: LC connector Uses standard 100Base-X/OC-3 SFP Fixed Optics: ST or SC connector
Data Rates	DS3/T3 = 44.7Mbps; E3 = 34.4Mbps
Status LEDs	Power, Coax link status, coax loopback status, AIS on coax link; Fiber link status, fiber loopback status, AIS on fiber link
Dimensions	Width: 3.5” [82 mm] Depth: 6.5” [165 mm] Height: 1" [25 mm]
Power Consumption	2.4 Watts
Power Input	100-240 VAC
Power Output	12 VDC
Environment	Operating: -10°C to +65°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	With Power Supply: Greater than 41,660 hours (MIL-HDBD-217F) Greater than 114,580 hours (Bellcore) Without Power Supply: Greater than 250,000 hours (MIL-HDBD-217F) Greater than 687,000 hours (Bellcore)
Certifications	CISPR/EN55022 Class A, FCC Class A, CE Mark, UL60950
Warranty	Lifetime

Ordering Information

S6210-3013
(2) Coax (BNC) to 1300nm multimode (SC) [2 km/ 1.2 mi.] Link Budget: 11.0 dB

S6210-3014
(2) Coax (BNC) to 1310nm single mode (SC) [20 km/12.4 mi.] Link Budget: 16.0 dB

S6210-3040
(2) Coax (BNC) to *SFP slot (empty)

Optional Accessories (sold separately)

SFP Modules

Wide Input (24 - 60VDC) Power Supplies (sold separately)

SPS-2460-SA
Stand-Alone Power Supply

Mounting Options (sold separately)

WMBL
Wall Mount Bracket 4" [102 mm]

WMBD
DIN Rail Bracket 5" [127 mm]

E-MCR-05
12-Slot Media Converter Rack

RMS19-SA4-02
4-Slot Media Converter Shelf

*SFP port uses standard 100Base-x/oc-3 SFP

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: S6210-3011-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Stand-alone RS232 Media Converter

RS232 Copper to Fiber

J/RS232-CF-01

Link a remote terminal to a host computer: Connect multiple devices, such as security scanners, POS devices, remote terminals and building access/alarming systems to a host computer. Ideal for campus or business environments where remote devices can be networked in a point-to-point configuration where distances are greater than the 15 meter limitation of conventional copper serial cables.

Transition Networks' serial RS232 to Fiber Media Converter is an inexpensive way to extend the distance between serial connections with the use of fiber optic cable. This converter supports full or half-duplex data transmission at speeds up to 120 Kbps. Unit and Port LEDs allow for quick status information on the converter.

Features

- Offered with either a male or female connector
- Full/Half-duplex transmission at speeds up to 120 Kbps
- Fiber LED lights to show link with or without data transmission

Specifications

Standards	EIA/TIA-574 EIA/TIA RS-232E
Status LEDs	PWR (Power): Lit for normal operation RX: Steady = Link; Flashing = Rx Data FL: Steady = Fiber Link
Dimensions	Width: 3" [76 mm] Depth: 3.9" [100 mm] Height: 1" [25 mm]
Power Consumption	3.0 Watts
Power Supply	External AC/DC; 12 VDC, 0.5A min Output; 120-240VAC input
Environment	Operating: 0°C to 50°C Storage: -40°C to +85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	49,000 hours (MIL217F2 V5.0) (MIL-HDBK-217F) 129,000 hours (Bellcore7 V5.0)
Certifications	Safety: Wall Mount Power Supply: UL Listed and CSA certified Emissions: CISPR22/EN55022 Class A + EN55024, EN60950 Class A, FCC Class A, CE Mark
Warranty	Lifetime

Ordering Information

J/RS232-CF-01
DB-9 (female) [15 m/49 ft.]
to 1300nm multimode (ST) [2 km/1.2 mi.]
Link Budget: 11.0 dB

J/RS232-CF-01(SC)
DB-9 (female) [15 m/49 ft.]
to 1300nm multimode (SC) [2 km/1.2 mi.]
Link Budget: 11.0 dB

J/RS232-TF-01
DB-9 (male) [15 m/49 ft.]
to 1300nm multimode (ST) [2 km/1.2 mi.]
Link Budget: 11.0 dB

J/RS232-TF-01(SC)
DB-9 (male) [15 m/49 ft.]
to 1300nm multimode (SC) [2 km/1.2 mi.]
Link Budget: 11.0 dB

Optional Accessories (sold separately)

Wide Input (24 - 60 VDC) Power Supplies (sold separately)

SPS-2460-SA
Stand-Alone Power Supply

Mounting Options (sold separately)

E-MCR-05
12-Slot Media Converter Rack

RMS19-SA4-02
4-Slot Media Converter Shelf

WMBD
DIN Rail Bracket 5" [127 mm]

WMBD-FS
DIN Rail Bracket (flat) 3.1" [79 mm]

WMBS
Wall Mount Bracket 3.2" [81 mm]

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: J/RS232-CF-01-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

SDSTX3110-121S-LRT

Hardened Slim Serial Device Server

(1) RS-232/422/485 Serial Port to (2) 10/100Base-TX Fast Ethernet Ports

Transition Networks hardened serial device server provides the ability to communicate secured serial data across an Ethernet network. The SDSTX3110-121S-LRT contains two 10/100 Fast Ethernet ports that can be configured to communicate to one or multiple redundant servers. Security of the data transmission is assured through HTTPS, SSH, and SSL data encryption.

The SDSTX3110-121S-LRT comes with COM port redirector software enabling communication of serial data to a virtual COM port on a server, or can be used in pairs to provide serial tunneling across the Ethernet network. The SDSTX3110-121S-LRT is a hardened device designed to operate in the harshest environments. It has a slim IP30 enclosure that can fit into space-constraining cabinets. The device accepts 12-48VDC power input and it is also certified to operate in temperatures of -40°C to +70°C.

Ordering Information

SDSTX3110-121S-LRT
(1) RS232/422/485 DB9 port
+ (2) 10/100Base-TX RJ-45

Optional Accessories (sold separately)

25135
Input: 85-264 VAC, 120-370 VDC
Output: 24VDC, 0.42A, 10 Watts

25130
Input: 85-264 VAC, 120-370 VDC
Output: 48VDC, 0.83A, 39.8 Watts

Features

- Operating Modes: Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP
- Security: SSL data encryption; secured management by HTTPS and SSH IP Access: IP White List
- Event Warning by SYSLOG, Email, SNMP trap
- Extended operating temperature (-40°C to 70°C)
- Various Windows O.S. supported: Windows NT/2000/ XP/ 2003/ VISTA(32/64bit)/Windows 7(32/64bit) /Windows 8

Specifications

Standards	IEEE 802.3™ IEEE 802.3u
Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, SSH, DNS, SNMP V1/V2c, HTTPS, SMTP, SSL
Serial	Ports (1) DB9M Protocols RS-232/422/485 (2 and 4 wire) Baud Rates 110bps to 921Kbps Data Bits 7, 8 Parity Odd, Even, None, Space Stop Bits 1, 1.5, 2 RS-232 TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND RS-422 Tx+. Tx-, Rx+, Rx- RS-485 (4 wire) Tx+. Tx-, Rx+, Rx- RS-485 (2 Wire) Data+, Data- Flow Control XON/XOFF, RTS/CST, DTR/ DSR
Status LEDs	Power, Ethernet Port Link/Act, Serial TX/RX
Dimensions	Width: 1.02" [26 mm] Depth: 2.95" [75 mm] Height: 4.33" [110 mm]
Power Consumption	1.44 Watts
Power Input	12 ~ 48 VDC; redundant inputs
Ingress Protection	IP30
Environment	Operating: -40°C to 70°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing)
Weight	0.5 lb. [0.23 kg]
MTBF	1,095,428.6101 hours
Certifications	FCC Part 15, CISPR (EN55022) class A, EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11, IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration) Safety: EN60950-1
Warranty	5 Years

+1.952.941.7600 | www.transition.com | sales@transition.com

Hardened Serial Device Server

(4) RS-232/422/485 Serial Ports + (2) 10/100Base-TX Fast Ethernet Ports

Transition Networks serial device server provides the ability to communicate serial data across an Ethernet network. The SDSTX3110-124-LRT-B contains (2) 10/100Base Fast Ethernet ports that can be configured to one or multiple redundant servers. Security of the data transmission is assured through HTTPS, SSH, and SSL data encryption.

The SDSTX3110-124-LRT-B comes with COM port redirector software enabling communication of serial data to a virtual COM port on a server, or can be used in pairs to provide serial tunneling across the Ethernet network.

The SDSTX3110-124-LRT-B is a hardened device designed to operate in the harshest environments. Enclosed in an IP30 enclosure and accepting input voltage of 12 to 48 VDC, the device is certified to operate in temperatures of -40°C to +70°C.

Ordering Information

SDSTX3110-124-LRT-B
(4) RS232/422/485 DB9 ports
+ (2) 10/100Base-TX RJ-45 ports

Optional Accessories (sold separately)

25135
Input: 85-264 VAC, 120-370 VDC
Output: 24VDC, .42A, 10 Watts

25130
Input: 85-264 VAC, 120-370 VDC
Output: 48VDC, .83A, 39.8 Watts

Features

- Operating Modes: Virtual Com, Serial Tunnel, TCP Server, TCP Client, UDP
- Security: SSL data encryption; secured management by HTTPS and SSH IP Access: IP White List
- Event Warning by SYSLOG, Email, SNMP traps
- Extended operating temperature (-40°C to 70°C)
- Various Windows O.S. supported: Windows NT/2000/ XP/ 2003/ VISTA(32/64bit)/Windows 7(32/64bit) / Windows 8

Specifications

Standards	IEEE 802.3™ IEEE 802.3u
Protocols	ICMP, IP, TCP, UDP, DHCP, BOOTP, SSH, DNS, SNMP V1/V2c, HTTPS, SMTP, SSL
Serial	Ports (4) DB9M Protocols RS-232/422/485 (2 and 4 wire) Baud Rates 110bps to 460Kbps Data Bits 7, 8 Parity Odd, Even, None, Space Stop Bits 1, 1.5, 2 RS-232 TxD, RxD, RTS, CTS, DTR, DSR, DCD, RI, GND RS-422 Tx+. Tx-, Rx+, Rx-, GND RS-485 (4 wire) Tx+. Tx-, Rx+, Rx-, GND RS-485 (2 Wire) Data+, Data-, GND Flow Control XON/XOFF, RTS/CST, DTR/DSR
Status LEDs	Power, Ethernet Port Link/Act, Serial TX/RX
Dimensions	Width: 2.6” [66 mm] Depth: 3.19” [81 mm] Height: 3.74” [95 mm]
Power Consumption	4.32 Watts
Power Input	12~48 VDC; redundant inputs
Ingress Protection	IP30
Environment	Operating: -40°C to +70°C Storage: -40°C to +85°C Humidity: 5% to 90% (non-condensing)
Weight	0.83 lbs. [.38 kg]
Certifications	Safety: EN60950-1 FCC Part 15, CISPR22/EN55022 Class A, EN61000-4-2, EN61000-4-3, EN-61000-4-4, EN61000- 4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration)
Warranty	5 Years

Media Converters

Contra G.703 64Kbps CESoPSN Unit

(1) DB15 Port + (2) 10/100/1000Base-T Ports + (1) 100/1000Base-X SFP Slot

The PB-TDM1-CONTRA Series enables a Contra-clocked, 64Kbps G.703 circuit to be transported over Ethernet or IP networks. The units are typically deployed in pairs, connecting the Contra clocked CPE across the packet network. Point to multi-point applications are supported with a maximum of 16 slaved devices connecting to a master unit.

For Contra applications requiring low latency operation, comprehensive features are available via the management system to tune the unit's performance.

Features

- Multi-standard TDM pseudowire support: CESoPSN, SATOP, TDM over IP
- Highly accurate & stable clock recovery
- Oscillator Performance
  - Hold-over 24hrs 150ppb (typical)
  - Aging per day 10ppb
  - Temperature Stability 12ppb
- G.823/4 Synchronization levels
- Contra port
  - 1 port- DB15 (female) connector
  - G.703 64kbps contra
  - Presents as DCE (cables for DTE)
  - ITU G.706
  - Transparent to user signaling
- Support for Jumbo Packets up to 9,600 bytes on Ethernet ports
- Port based VLAN, IEEE 802.1Q VLAN including Q-in-Q
- Link Aggregation Control Protocol (LACP)
- Ring Protection: MSTP, RSTP, STP
- SNMP v1, v2c and v3
- RMON and Syslog
- Management via CLI, Telnet, SSH, SSL, SNMP, Web GUI
- Authentication: Radius, TACACS+, IEEE 802.1x
- IGMP Snooping
- LLDP
- IPv6 and IPv4 dual protocols
- Firmware/Configuration backup/ restore via Web/FTP

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ab IEEE 802.3x IEEE 802.3ad IEEE 802.1p IEEE 802.1Q IEEE 802.1w IEEE 802.1s IEEE 802.1x IEEE 802.1AB ITU-T G.823/4 ITU-T G.703
Ports	(1) Contra DB15 (female) connector (2) 10/100/1000Base-T RJ-45 ports (1) 100/1000Base-X SFP slot (empty) (1) RJ-12 console port
Dimensions	Width: 8.86" [225 mm] Depth: 7.87" [200 mm] Height: 1.73" [44 mm]
Power Input	AC Version Bale lock cable clamp Auto-sensing 100VAC-240VAC, 47-63Hz Max consumption 0.2A @ 230VAC Typical Consumption 18 Watts DC Version External presentation -48VDC, 0VDc and GND via external screw down termination Wide input range -18V to -72V Typical consumption 13 Watts
Environment	Operating: 0°C to +60°C Humidity: 10% to 90% (non-condensing)
Weight	5.73 lbs. [2.6 kg]
Certifications	CE Mark EN60950-1:2006+ A11:2009+ A1:2010+ A12:2011 EN50121-4:2006, EN61000-3-2:2006+ A1&A2:2009 FCC CFR47 Parts15: 107&109, CB Scheme Certified
Warranty	1 Year

Ordering Information

PB-TDM1-CONTRA-AC
(1) DB15 port
+ (2) 10/100/1000Base-T ports
+ (1) 100/1000Base-X SFP slot (empty) AC input (serial control cable included)

PB-TDM1-CONTRA-DC
(1) DB15 port
+ (2) 10/100/1000Base-T ports
+ (1) 100/1000Base-X SFP slot (empty)
-48VDC input
(serial control cable included)

Optional Accessories (sold separately)

SFP Modules

PB-RMK-S
19" rack mount kit for PB-TDM1-CONTRA Series

Features Continued

- TDM packets can be assigned IP Diffserv (DSCP) or ToS and IEEE 802.1p CoS values
- Supports full IEEE 802.1Q tagging & associated IEEE 802.1p CoS prioritization levels
- All egress packets, including TDM links, can be prioritized across four output queues
- Various clocking options for different network types & clock recovery requirements
- Quality of Service: Supports 8 hardware queues with strict priority and WRR, shaping, policing. Per port bandwidth management.

Applications

- Contra

Power Cord Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: PB-TDM1-CONTRA-AC-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

+1.952.941.7600 | www.transition.com | sales@transition.com

18-Slot Mini Media Converter Chassis

M-MCR-01
Mini Media Converters Sold Separately

The Mini Media Converter Chassis is a 19" rack mountable powered chassis for the Mini line of stand-alone media converters. Designed for Transition Networks' line of office grade, non-hardened, mini media converters, this chassis is ideal for installations where multiple Minis are being deployed in the same location. It offers an easy and cost-effective method for securely mounting up to 18 Mini converters while requiring only one AC power connection.

As networks grow, so does the need to interface between various types of cabling infrastructure and the Mini copper-to-fiber media converters offer a low cost, space saving option for making those connections between disparate cable types. The Mini Media Converter Chassis is suitable for Enterprise, or any Government, application where multiple points of fiber connectivity are required. The chassis can accept any combination of Transition Networks' Layer 1 100Base and 1000Base Mini media converters as well as the Layer 2 10/100 and 10/100/1000 Mini media converters, all with the barrel-type DC power input connector.

The chassis occupies 1.5U of rack space, allowing two chassis to be mounted in 3 units of rack space, efficiently using critical rack space in datacenters or wiring closets. The mini converters are hot-swappable and directly connect to the chassis backplane to receive their power connection. Three lock-down bars can be raised and lowered to allow the installation of a hot-swappable mini converter. These bars are also used to securely hold the Mini converter in the chassis, even when the copper and fiber data cables are being inserted and removed from the individual Mini converters.

Ordering Information

M-MCR-01
18-Slot Powered Chassis for non-hardened Mini Media Converters, Includes 19" Rack Mount Ears

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: M-MCR-01-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Features

- 19" rack mountable powered chassis
- Install up to 18 Mini Media Converters
- Universal AC power
- Mini converters are hot-swappable
- Any combination of non-hardened Mini converters
- Provides modular, centralized, high density media conversion
- Applications for
  - Enterprise Networks
  - Higher Education or Corporate Campus
  - Physical Security & Surveillance
  - Government Agency Networks

Specifications

Slots	(18) Slots in front for Mini Media Converters
Status LEDs	Power: LED on power supply, ON = Lit for normal operation
Dimensions	Width: 17.3" [439.42 mm] Depth: 12" [304.79 mm] Height: 2.62" [66.54 mm]
Power Supply	Meanwell GST60A12-P1J, 60 Watts Power Supply (UL, cUL, CE); Power cord included
Power Input	Unit accepts 100 – 240 VAC, 1.6A, 50-60Hz, 3 Pole AC inlet IEC320-C14
Power Output	12VDC, 5.0A
Environment	Operating: 0°C to +50°C Storage: -40°C to +85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	7.4 lbs. [3.35 kg]
MTBF	700,000 hours (MIL-HDBK-217F)
Warranty	Lifetime

Mini Fast Ethernet Media Converter

100Base-TX to 100Base-FX

M/E-TX-FX-01

The M/E-TX Series is a Fast Ethernet stand-alone Mini media converter that provides cost effective media conversion between 100Base-TX ports and 100Base-FX ports. With its fixed configuration, deployments are just plug-and-play, and its small size makes it ideal for locations where space is limited. Operating at Layer 1, the physical layer, data is passed through the converter at line speed, making it ideal for applications where low latency is essential.

Features

- Fiber integration used in pairs or as a single unit, this mini media converter will ease the integration of fiber optic cabling into copper-rich fast Ethernet environments
- Extend Network Distance as fiber supports the transmission of Fast Ethernet data over much longer distances than possible twisted pair
- Low-Latency Layer 1 Design, this mini converter will retransmit Fast Ethernet signals without any store-and–forward packet inspection delays found in other Layer 2 devices
- Small Size is ideal for conversion locations where available space is limited - 65% smaller than standard media converter
- Unit and port LEDs allow for quick status information
- Auto-Negotiation
- Auto-MDI/MDIX

Specifications

Standards	IEEE 802.3u 100Base-TX 100Base-FX
Status LEDs	PWR (Power) below RJ-45: On = Power FX-Link/Act (Fiber Link / Activity) Upper Left on RJ-45: On = link, Flashing = Activity TX-Link/Act (Copper Link / Activity) Upper Right on RJ-45: On = link, Flashing = Activity
Dimensions	Width: 1.8” [46 mm] Depth: 3.3” [85 mm] Height: 0.85 [22 mm]
Power Consumption	2.6 Watts
Power Supply	External AC/DC required; +12VDC, 0.5A
Power Input	7.5VDC to 13.9VDC
Environment	Operating: 0°C to 50°C Storage: -15°C to 65°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	41,680 hours (MIL-HDBK-217F) 114,580 hours (Bellcore7 V5.0)
Certifications	Wall Mount Power Supply, UL Listed, cUL Listed (Canada)
Warranty	Lifetime

Ordering Information

M/E-TX-FX-01
100Base-TX (RJ-45) [100m/328 ft.] to 100Base-FX 1300nm multimode (ST) [2km/1.2mi.] Link Budget: 11.0db

M/E-TX-FX-01(SC)
100Base-TX (RJ-45) [100m/328 ft.] to 100Base-FX 1300nm multimode (SC) [2km/1.2mi.] Link Budget: 11.0db

M/E-TX-FX-01(SM)
100Base-TX (RJ-45) [100m/328 ft.] to 100Base-FX 1310nm single mode (SC) [20km/12.4mi.] Link Budget: 16.0db

M/E-TX-FX-01(SFP)
100Base-TX (RJ-45) [100m/328 ft.] to 100Base-X SFP Slot (empty)

M/E-TX-FX-01(100)
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1310nm TX/1550nm RX single fiber single mode (SC) [20 km/12.4 mi.] Link Budget: 19.0 dB

M/E-TX-FX-01(101)
100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1550nm TX/1310nm RX single fiber single mode (SC) [20 km/12.4 mi.] Link Budget: 19.0 dB

Optional Accessories (sold separately)

SFP Modules

Wide Input DC Power Supply (sold separately)

SPS-2460-SA
24VDC to 60VDC input Stand-alone Power Supply

Mounting Options (sold separately)

WMBM
Wall Mount Bracket for Mini

M-MCR-01
18-Slot Powered Mini Chassis

DRBM
DIN Rail Mount Bracket for Mini

RMBM
Rack Mount Bracket for Mini, use with RMS19-SA4-02 and/or E-MCR-05

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: M/E-TX-FX-01-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Mini Fast Ethernet Media Converter

10/100Base-TX to 100Base-FX

M/E-PSW-FX-02(SM)

The M/E-PSW Series is a Fast Ethernet stand-alone Mini media converter that provides cost effective media conversion between 10/100Base-TX ports and 100Base-FX ports. With its fixed configuration, deployments are just plug-and-play, and its small size makes it ideal for locations where space is limited. Operating at Layer 2, the data link layer, this converter not only converts copper to fiber, it also provides rate conversion allowing legacy 10Base-T copper devices to connect to 100Base-FX fiber.

Features

- Unit and Port LEDs allow for quick status information
- Auto-Negotiation
- Fixed Full-Duplex on fiber
- Auto-MDI/MDIX
- Automatic Link Restoration
- Far-End-Fault (FEF)
- Connect to legacy network equipment
- Eliminate Collision Domains

Specifications

Standards	IEEE 802.3
Max Frame Size	1632 bytes
Status LEDs	PWR (Power): (below RJ-45) ON = Link; Flashing = Activity FX-Link/Act (Fiber Link/Activity): (Upper Left on RJ-45) ON = Link; Flashing = Activity TX-Link/Act (Copper Link/Activity): (Upper Right on RJ-45) ON = Link; Flashing = Activity
Dimensions	Width: 1.8” [46 mm] Depth: 3.3” [85 mm] Height: 0.85” [22 mm]
Power Consumption	2.6 Watts
Power Supply	External AC/DC required; +12VDC, 0.5A min
Power Input	7.5 VDC to 13.9 VDC
Environment	Operating: 0°C to 50°C Storage: -15°C to 65°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	41,660 hours (MIL-HDBK-21F) 114,580 hours (Bellcore)
Certifications	Safety: Wall Mount Power Supply: UL Listed, cUL Listed (Canada) FCC Class A, CISPR22/EN55022 Class A, EN55024, CE Mark
Warranty	Lifetime

Ordering Information

M/E-PSW-FX-02
10/100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (ST) [2 km/1.2 mi.] Link Budget: 11.0 dB

M/E-PSW-FX-02(SC)
10/100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1300nm multimode (SC) [2 km/1.2 mi.] Link Budget: 11.0 dB

M/E-PSW-FX-02(SM)
10/100Base-TX (RJ-45) [100 m/328 ft.] to 100Base-FX 1310nm single mode (SC) [20 km/12.4 mi.] Link Budget: 16.0 dB

Optional Accessories (sold separately)
Wide Input Power Supplies

SPS-2460-SA
Stand-Alone Power Supply

Mounting Options (sold separately)

WMBM
Wall Mount Bracket for Mini

M-MCR-01
18-Slot Powered Mini Chassis

DRBM
DIN Rail Mount Bracket for Mini

RMBM
Rack Mount Bracket for Mini, use with RMS19-SA4-02 and/or E-MCR-05

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: M/E-PSW-FX-02-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Hardened Mini Fast Ethernet Media Converter

10/100Base-TX to 100Base-FX

The M/E-ISW Series is a hardened Fast Ethernet Mini media converter that provides a cost effective, plug-and-play media conversion between 10/100Base-TX ports and 100Base-FX ports for hardened or outdoor 10/100 environments. With its supported operating temperature range of -40°C to 75°C, the Mini offers a space saving alternative for converting copper to fiber in extreme environments.

Features

- Unit and Port LEDs provide quick status
- Auto-Negotiation
- Fixed Full-Duplex on fiber
- Auto-MDI/MDIX
- Link Pass Through
- Active Link Pass Through on SFP version
- Automatic Link Restoration
- Far-End-Fault (FEF)
- DC and AC power inputs via terminal block
  - If the voltage of your power source doesn't match the device input power, external power supplies are available
- Includes barrel connector pig-tail cable
- Overload Current Protection
- Reverse Polarity Protection
- Easily integrate fiber into industrial, hardened, or outdoor locations to reach devices at the edge of the network
- Small mechanical size allows use in enclosures with space constraints
- No configuration required
- Available with LC, ST or SC fiber interfaces and available for multimode or single mode fiber
- Multiple mounting options:
  - DIN Rail clip and velcro included
  - Wall mount bracket sold separately

Specifications

Standards	IEEE 802.3
Max Frame Size	2,046 bytes (for all excpet SFP version) 10,240 bytes (for SFP version)
Status LEDs	PWR (Power): (below RJ-45) FX-Link/Act (Fiber Link/Activity): (Upper Left on RJ-45) ON = Link; Flashing = Activity TX-Link/Act (Copper Link/Activity): (Upper Right on RJ-45) ON = Link; Flashing = Activity
Dimensions	Width: 1.8" [46 mm] Depth: 3.3" [85 mm] Height: 0.85" [22 mm]
Power Consumption	2.5 Watts
Power Input	2-pin Terminal Block Unit accepts 12-48 VDC and 24-36 VAC ± 10% Overload Current Protection Reverse Polarity Protection
Environment	Operating: -40°C to 75°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	41,680 hours (MIL-HDBK-217F) 114,580 hours (Bellcore7 V5.0)
Certifications	FCC Class A, CISPR22/EN55022 Class A, EN55024, CE Mark
Warranty	Lifetime

Ordering Info

M/E-ISW-FX-02(SFP)
10/100Base-TX (RJ-45) [100 m/328 ft.]
to 100Base-FX Open SFP Slot

M/E-ISW-FX-02
10/100Base-TX (RJ-45) [100 m/328 ft.]
to 100Base-FX 1300nm multimode (ST)
[2 km/1.2 mi.] Link Budget: 14.0 dB

M/E-ISW-FX-02(SC)
10/100Base-TX (RJ-45) [100 m/328 ft.]
to 100Base-FX 1300nm multimode (SC)
[2 km/1.2 mi.] Link Budget: 14.0 dB

M/E-ISW-FX-02(MMLC)
10/100Base-TX (RJ-45) [100 m/328 ft.]
to 100Base-FX 1300nm multimode (LC)
[2 km/1.2 mi.] Link Budget: 11.0 dB

M/E-ISW-FX-02(SM)
10/100Base-TX (RJ-45) [100 m/328 ft.]
to 100Base-FX 1310nm single mode (SC)
[20 km/12.4 mi.] Link Budget: 19.0 dB

Optional Accessories (sold separately)

SFP Modules
Supports Hardened Grade SFP Modules

AC Power Supplies (sold separately)

SPS-UA12DHT
(100-240 VAC input
0°C to +70°C Operating temperature)

25165
Universal AC/DC Input DIN Rail Mountable
+12 VDC Power Supply

Mounting Options (sold separately)

WMBM
Wall Mount Bracket for Mini Converters

Mini Gigabit Ethernet Media Converter

1000Base-T to 1000Base-SX/LX

M/GE-T-SX-01

The M/GE-T Series is a Gigabit Ethernet stand-alone Mini media converter that provides cost effective media conversion between 1000Base-T ports and 1000Base-SX/LX ports. With its fixed configuration, deployments are just plug-and-play, and its small size makes it ideal for locations where space is limited. Operating at Layer 1, the physical layer, data is passed through the converter at line speed, making it ideal for applications where low latency is essential.

Features

- Auto-Negotiation
- Auto-MDI/MDIX
- Automatic Link Restoration
- Interoperable with other 1000Base-T/SX/LX NICs or switch ports
- Status LEDs for easy monitoring
- Supports SFP modules
- Supports Jumbo Frames up to 13312bytes
- 65% smaller than standard media converter
- Extend Network Distance
- Low-Latency Design
- Fiber Link Pass Through

Specifications

Standards	IEEE 802.3z IEEE 802.3ab
Status LEDs	PWR (Power) below RJ-45: On = Power FX-Link/Act (Fiber Link / Activity) Upper Left on RJ-45: On = link, Flashing = Activity TX-Link/Act (Copper Link / Activity) Upper Right on RJ-45: On = link, Flashing = Activity
Dimensions	Width: 1.8” [46 mm] Depth: 3.3” [85 mm] Height: 0.85" [22 mm]
Power Consumption	2.6 Watts
Power Supply	External AC/DC required; +12VDC, 0.5A
Power Input	7.5VDC to 13.9VDC
Environment	Operating: 0°C to 50°C Storage: -15°C to 65°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	Unit: Greater than 250,000 Hours (MIL-HDBK-217F) Greater than 687,500 Hours (Bellcore) With Power Supply: Greater than 41,660 Hours (MIL-HDBK-217F) Greater than 114,580 Hours (Bellcore)
Certifications	Safety: Wall Mount Power Supply, UL Listed, cUL Listed (Canada), FCC Class A, CISPR22 / EN55022 Class A, EN55024, CE Mark
Warranty	Lifetime

Ordering Information

M/GE-T-SX-01
1000Base-T (RJ-45) [100m/328 ft.] to 1000Base-SX 850nm multimode (SC) [62.5/125 µm fiber: 220 m/722 ft.] [50/125 µm fiber: 550 m/1804 ft.] Link Budget: 7.0 dB

M/GE-T-SX-01(LC)
1000Base-T (RJ-45) [100m/328 ft.] to 1000Base-SX 850nm multimode (LC) [62.5/125 µm fiber: 220 m/722 ft.] [50/125 µm fiber: 550 m/1804 ft.] Link Budget: 8.5 dB

M/GE-T-LX-01
1000Base-T (RJ-45) [100m/328 ft.] to 1000Base-LX 1310m single mode (SC) [10 km/6.2 mi.] Link Budget: 10.5db

M/GE-T-SFP-01
1000Base-T (RJ-45) [100m/328 ft.] to SFP slot (empty)

Optional Accessories (sold separately)

SFP Modules

Wide Input DC Power Supply (sold separately)

SPS-2460-SA
24VDC to 60VDC input Stand-alone Power Supply

Mounting Options (sold separately)

WMBM
Wall Mount Bracket for Mini

M-MCR-01
18-Slot Powered Mini Chassis

DRBM
DIN Rail Mount Bracket for Mini

RMBM
Rack Mount Bracket for Mini, use with RMS19-SA4-02 and/or E-MCR-05

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: M/GE-T-SX-01-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Mini Gigabit Ethernet Media Converter

10/100/1000Base-T to 1000Base-SX/LX

M/GE-PSW-SX-01

The M/GE-PSW Series is a Gigabit Ethernet stand-alone Mini media converter that provides cost effective media conversion between 10/100/1000Base-T ports and 1000Base-SX/LX ports. With its fixed configuration, deployments are just plug-and-play, and its small size makes it ideal for locations where space is limited. Operating at Layer 2, the data link layer, this converter not only converts copper to fiber, it also provides rate conversion allowing legacy 10/100 copper devices to connect to 1000Base-SX/LX fiber.

Features

- Unit & Port LEDs allow for quick status information
- Auto-Negotiation
- Fixed Full-Duplex on fiber
- Auto-MDI/MDIX
- Active Link Pass Through
- Automatic Link Restoration
- Space saving design
- Connect Legacy Networking Equipment: Connect an existing 10/100 Mbps device to 1000 Mbps devices.
- Jumbo Frame (up to 10,240 Bytes)
- USB Power Option, requires the use of a USB to DC barrel connector cable (USBC-AM-DC)

Specifications

Standards	IEEE 802.3
Max Frame Size	Up to 10,240 bytes
Status LEDs	PWR (Power): (below RJ-45) ON = Lit for normal operation FX-Link/Act (Fiber Link/Activity): (Upper Left on RJ-45) ON = Link; Flashing = Activity TX-Link/Act (Copper Link/Activity): (Upper Right on RJ-45) ON = Link; Flashing = Activity
Dimensions	Width: 1.8” [46 mm] Depth: 3.3” [85 mm] Height: 0.85” [22 mm]
Power Consumption	3.15 Watts
Power Supply	Unit accepts 4.5 VDC to 28 VDC Wall Mount AC adapter: 12 VDC 400mA
Environment	Operating: 0°C to 50°C Storage: -15°C to +65°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	24,466 hours (MIL217F2 V5.0) (MIL-HDBD-217F) 100,130 hours (Bellcore7 V5.0)
Certifications	Safety: Wall Mount Power Supply, UL Listed, cUL Listed (Canada) FCC Class A, CISPR22/EN55022 Class A, EN55024, CE Mark
Warranty	Lifetime

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: M/GE-PSW-SX-01-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Ordering Information

M/GE-PSW-SX-01(ST)
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (ST) [62.5/125 µm fiber: 220 m/722 ft.] Link Budget: 7.0 dB [50/125 µm fiber: 550 m/1804 ft.] Link Budget: 7.0 dB

M/GE-PSW-SX-01
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (SC) [62.5/125 µm fiber: 220 m/722 ft.] Link Budget: 7.0 dB [50/125 µm fiber: 550 m/1804 ft.] Link Budget: 7.0 dB

M/GE-PSW-SX-01(LC)
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (LC) [62.5/125 µm fiber: 220 m/722 ft.] Link Budget: 7.0 dB [50/125 µm fiber: 550 m/1804 ft.] Link Budget: 7.0 dB

M/GE-PSW-LX-01
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX 1310nm single mode (SC) [10 km/6.2 mi.] Link Budget: 10.5 dB

M/GE-PSW-SFP-01
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to 100/1000Base-X SFP Slot (empty)

Optional Accessories (sold separately)

SFP Modules

Wide Input (24 - 60 VDC) Power Supply (sold separately)

SPS-2460-SA
Stand-Alone Power Supply

USBC-AM-DC
USB 2.0 cable male to barrel connector USB Power Cable

Mounting Options (sold separately)

WMBM
Wall Mount Bracket for Mini

M-MCR-01
18-Slot Powered Mini Chassis

DRBM
DIN Rail Mount Bracket for Mini

RMBM
Rack Mount Bracket for Mini, use with RMS19-SA4-02 and/or E-MCR-05

Note: Long Haul single mode and Single Strand single mode are available upon request.

Hardened Mini Gigabit Ethernet Media Converter

10/100/1000Base-T to 1000Base-SX/LX

M/GE-ISW-SFP-01

The M/GE-ISW Series is an hardened Gigabit Ethernet Mini media converter that provides cost effective media conversion between 10/100/1000Base-T ports and 1000Base-SX/LX ports for hardened or outdoor environments. With its supported operating temperature range of -40°C to +75°C, the Mini offers a space saving alternative for converting copper to fiber in extreme environments.

Features

- Unit & Port LEDs allow for quick status information
- Auto-Negotiation
- Fixed Full-Duplex on Fiber
- Auto-MDI/MDIX on copper port
- Active Link Pass Through
- Jumbo Frame (up to 10240Bytes)
- Supports DC and AC Input Power via terminal block
  - If the voltage of your power source doesn't match the device input power, external power supplies are available
  - Includes barrel connector pig-tail cable
- Multiple mounting options
  - DIN Rail clip and Velcro included
  - Wall mount bracket sold separately
- Overload Current Protection
- Reverse Polarity Protection

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3ab IEEE 802.3z IEEE 802.3x
Max Frame Size	10240 bytes
Status LEDs	PWR (Power): (below RJ-45) ON = Lit for normal operation FX-Link/Act (Fiber Link/Activity): (Upper Left on RJ-45) On = link; Flashing = Activity TX-Link/Act (Copper Link/Activity): (Upper Right on RJ-45) On = link; Flashing = Activity
Dimensions	Width: 1.8" [46 mm] Depth: 3.3" [85 mm] Height: 0.85" [22 mm]
Power Consumption	1.2 Watts
Power Input	2-pin terminal block Unit accepts 12 - 48 VDC or 24 – 36VAC (External power supplies sold separately)
Environment	Operating: -40°C to +75°C Storage: -40°C to +85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	0.40 lbs. [0.18 kg]
MTBF	Greater than 41,680 hours (MIL-HDBK-217F) Greater than 114,580 hours (Bellcore7 V5.0)
Certifications	FCC Class A, CISPR22/EN55022 Class A, EN55034, CE Mark
Warranty	Lifetime

Ordering Information

M/GE-ISW-SX-01
10/100/1000Base-T (RJ-45) to 1000Base-SX, SC, multimode, [62.5/125 um: 220 m/722 ft.] [50/125 um: 550 m/1804 ft.] Link Budget: 7.5 dB

M/GE-ISW-LC-01
10/100/1000Base-T (RJ-45) to 1000Base-SX, LC, multimode, [62.5/125 um: 220 m/722 ft.] [50/125 um: 550 m/1804 ft.] Link Budget: 8.0 dB

M/GE-ISW-LX-01
10/100/1000Base-T (RJ-45) to 1000Base-LX, SC, single mode, [10 km/6.2 mi.] Link Budget: 10.5 dB

M/GE-ISW-SFP-01
10/100/1000Base-T (RJ-45) to 100/1000Base-X Open SFP Slot

Optional Accessories (sold separately)

SFP Modules

Power Supply (sold separately)

SPS-UA12DHT
12 VDC, 18W, External AC/DC Desktop Power Supply

25165
Universal AC/DC Input DIN Rail Mountable +12 VDC Power Supply

Mounting Options (sold separately)

WMBM
Wall Mount Bracket Mini

RMBM
Rack Mount Bracket for Mini Media Converters in the RMS19-SA4-02

M/GE-ISW-SFP-01-PD

Hardened Mini Powered Device Gigabit Ethernet Media Converter

10/100/1000Base-T to 1000Base-X

M/GE-ISW-SFP-01-PD

The M/GE-ISW-SFP-01-PD is a hardened Gigabit Ethernet Mini media converter that provides a cost effective media conversion between 10/100/1000Base-T ports and 100/1000Base-X ports for hardened or outdoor 10/100/1000 environments. The device is powered through the RJ-45 copper port in compliance with IEEE 802.3af standards, when connected to power sourcing equipment, meaning no separate power connection is required. With its supported operating temperature range of -40°C to +75°C, the Mini offers a space saving alternative for converting copper to fiber in extreme environments.

Ordering Information

M/GE-ISW-SFP-01-PD
PoE Powered Hardened Mini 10/100/1000Base-T (RJ-45) to 100/1000Base-X Open SFP Slot

Optional Accessories (sold separately)

SFP Modules
Supports Hardened Grade SFP Modules

Media Converters

Features

- IEEE 802.3af PD Power Input from RJ-45 TP interface
- Unit & Port LEDs allow for quick status information
- Auto-Negotiation
- Fixed Full-Duplex on Fiber
- Auto-MDI/MDIX on copper port
- Active Link Pass Through
- Jumbo Frame (up to 10240 bytes)
- DIN Rail clip and Velcro included

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3x IEEE 802.3af
Max Frame Size	10240 bytes
Status LEDs	PWR (Power): ON = Lit for normal operation FX-Link/Act (Fiber Link/Activity): On = link; Flashing = Activity TX-Link/Act (Copper Link/Activity): On = link; Flashing = Activity
Dimensions	Width: 1.8" [46 mm] Depth: 3.3" [85 mm] Height: 0.85" [22 mm]
Power Consumption	1.8 Watts
Power Input	IEEE 802.3af supplied through TP RJ-45
PoE Power Classification	Class 1 Powered Device (0.44 Watts - 3.84 Watts)
Environment	Operating: -40°C to +75°C Storage: -40°C to +85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	0.40 lbs. [0.18 kg]
MTBF	Greater than 225,000 Hours (MIL-HDBK-217F) Greater than 618,750 Hours (Bellcore)
Certifications	FCC Class A, CISPR22/EN55022 Class A, EN55024, CE Mark
Warranty	Lifetime

Mini Gigabit Ethernet Unidirectional Media Converter

10/100/1000Base-T Port to 100/1000Base-X Port

Transmit & Receive Must Be Used As a Pair

Unidirectional communication is often used to safeguard information in secure environments such as government agencies and military networks. A Unidirectional device, sometimes referred to as a unidirectional security gateway or a data diode, provides a connection between two or more networks with different security classifications and helps to protect assets by ensuring information is directed only to, or from, the appropriate network as designated by the directional device.

Unidirectional media converters combine this one-way communications with the benefits of a copper to fiber media converter. Media converters are a cost-effective, plug-and-play device that allows fiber optic cabling to be connected to copper-based networking equipment. The deployment of fiber adds a layer of security to networks as it is difficult to tap into fiber and go undetected. If threats are attacking a network, the fiber links go down and network administrators are made aware of the problem, providing them the opportunity to address a potential breach of security.

Adding unidirectional technology to a media converter creates a physically secure one-way communication channel over fiber between a secure network and an unsecure network. These devices can be used to allow data from a classified, high-security area to be transmitted to a low-security area, while preventing unsecure data from re-entering the classified network. An alternate application allows a secure network to be updated with data from an external source while ensuring its critical data is unable to leave the classified area.

Features

- Unidirectional data transmissions over fiber to, or from, secure networks
- Simplex communications only requires one strand of fiber cable
- Applications require a transmit-only converter to be paired with a receive-only converter
- Converters support dual speed 100/1000Mbps SFP modules offering great flexibility to meet network requirements
- Converters use duplex SFP modules but the transmitting converter only uses the TX port on the SFP, while the RX port is deactivated. Likewise the receiving converter only uses the RX port, while the TX port is deactivated
- Unit and port LEDs allow for quick status information
- Auto-Negotiation on the 10/100/1000 copper port
- Auto-MDI/MDIX configuration
- Jumbo Frame Support

Specifications

Standards	IEEE 802.3 IEEE 802.3z IEEE 802.3u IEEE 802.3ab IEEE 802.3af (for PD Versions Only)
Status LEDs	Pwr (Power): On = Power FX-Link/Act (Fiber Link / Activity): On = Link, Flashing = Activity TX-Link/Act (Copper Link / Activity): On = Link, Flashing = Activity
Dimensions	Width: 1.8" [46 mm] Depth: 3.3" [85 mm] Height: 0.85" [22 mm]
Power Consumption	1.8 watts without the SFP module
Power Supply	External AC/DC required, 12 VDC, 0.5A
Power Input	4.5VDC to 14VDC via barrel connector (-PSW) 12 – 48 VDC or 24 – 36VAC via 2-pin terminal block (-ISW) IEEE 802.3af via TP RJ-45 (-PD)
Environment	M/GE-PSW-SFP-01-UxX: Operating: 0°C to 50°C Humidity: 5% to 95% (non-condensing) Storage: -15°C to 65°C Altitude: 0 to 10,000 ft. M/GE-ISW-SFP-01-xx-UxX: Operating: -40°C to 75°C Humidity: 5% to 95% (non-condensing) Storage: -40°C to 85°C Altitude: 0 to 10,000 ft.
Weight	2 lbs. [0.9 kg]
MTBF	Greater than 41,680 hours (MIL-HDBK-217F) Greater than 114,580 hours (Bellcore7 V5.0)
Certifications	Safety: Wall Mount Power Supply, UL Listed, cUL Listed (Canada); FCC Class A, CISPR22 / EN55022 Class A, EN55034, CE Mark
Warranty	Lifetime

Ordering Information

Enterprise Grade Converters (0°C to 50°C)

M/GE-PSW-SFP-01-UTX
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to Unidirectional 100/1000Base-X SFP Slot (empty) Transmitting Converter

M/GE-PSW-SFP-01-URX
10/100/1000Base-T (RJ-45) [100 m/328 ft.] to Unidirectional 100/1000Base-X SFP Slot (empty) Receiving Converter

Hardened Grade Converters (-40°C to 75°C)

M/GE-ISW-SFP-01-UTX
Hardened Mini 10/100/1000Base-T (RJ-45) to Unidirectional 100/1000Base-X Open SFP Slot Transmitting Converter

M/GE-ISW-SFP-01-URX
Hardened Mini 10/100/1000Base-T (RJ-45) to Unidirectional 100/1000Base-X Open SFP Slot Receiving Converter

PoE-Powered Hardened Grade Converters (-40°C to 75°C)

M/GE-ISW-SFP-01-PD-UTX
PoE Powered Hardened Mini 10/100/1000Base-T (RJ-45) to Unidirectional 100/1000Base-X Open SFP Slot Transmitting Converter

M/GE-ISW-SFP-01-PD-URX
PoE Powered Hardened Mini 10/100/1000Base-T (RJ-45) to Unidirectional 100/1000Base-X Open SFP Slot Receiving Converter

Optional Accessories (sold separately)

SFP Modules

Power Supply (sold separately)

SPS-2460-SA (For Enterprise Converters)
24VDC to 60VDC input Stand-alone Power Supply

SPS-UA12DHT (For Hardened Non-PD Converters)
12 VDC, 18W, External AC/DC Desktop Power Supply

25165 (For Hardened Non-PD Converters)
Universal AC/DC Input DIN Rail Mountable +12 VDC Power Supply

Mounting Options (sold separately)

WMBM (For Enterprise Converters)
Wall Mount Bracket for Mini

M-MCR-01 (For Enterprise Converters)
18-Slot Powered Mini Chassis

DRBM (For Enterprise Converters)
DIN Rail Mount Bracket for Mini

RMBM
Rack Mount Bracket for Mini, use with RMS19-SA4-02 and/or E-MCR-05

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: For M/GE-PSW-SFP-01-UTX-NA or M/GE-PSW-SFP-01-URX-NA Only
-NA = Country Code -NA = North America, -LA = Latin America , -EU = Europe, -UK = United Kingdom, -SA = South Africa, -JP = Japan, -OZ = Australia, -BR = Brazil

(1) Port PoE Mid-Span Injector

Transition Networks' Power-over-Ethernet solutions deliver a unified supply of data, voice, and video as well as electrical power through a single source by sending power over standard CAT5 and above twisted pair cables. Power-over-Ethernet simplifies installation and eliminates the need to run separate power cords and LAN cables to each Access Point or port locations.

Our PoE products provide organizations with affordable, easy-to-use solutions that enable them to migrate their network infrastructure to support a growing number of advanced cost-saving, performance enhancing applications, such as streamlining wireless, VoIP, Network IP camera deployments, and centralized power backup solutions. Whether on a factory floor or in an enterprise facility, running power to hard to reach locations with Transition Networks' Power-over-Ethernet solutions significantly reduces cabling and outlet requirements while providing the lowest total cost of ownership.

Ordering Information

MIL-L100i
(1) 10/100Base-T Port PoE Mid-Span Injector

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU
Ex: MIL-L100i-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Features

- Ensures uninterrupted network operation by providing a "power safe" path to the user
- Intelligent detection process to detect Power-over-Ethernet enabled terminals and protect legacy endpoints
- Furnishes easy and cost-effective installation with fewer cables and electrical outlets
- Provides one central secure location for power
- IEEE 802.3af compliant
- Ensures safe delivery of power to existing legacy devices as well as power-enabled terminals
- Avoids altering existing wiring and does not damage cabling infrastructure already in place
- Power delivery over Ethernet cables does not cause data degradation or loss of data integrity
- Easiest way to add support of PoE to an existing network without replacing existing equipment

Specifications

Standards	IEEE 802.3af IEEE 802.3 IEEE 802.3u
Ports	(1) DATA IN RJ-45 Ethernet Port (1) DATA OUT PoE Injector RJ-45 Ethernet Port
Status LEDs	Power: PoE power is being injected into the Data Out port
Cable Requirements	10Base-T: 2-pair UTP/STP Cat.3,4, 5 cable EIA/TIA-568100- ohm(100 m) 100Base-TX: 2-pair UTP/STP Cat.5 cable EIA/TIA-568 100-ohm(100 m)
Dimensions	Width: 4.6" [117 mm] Depth: 2.3" [60 mm] Height: 1.3" [35 mm]
Power Output	-48 VDC, 300 mA
Power Input	AC 100~240V, 50~60 Hz, 0.3A
Environment	Operating: 0°C to 40°C Storage: 0°C to 70°C Humidity: 5% to 95% (non-condensing)
Weight	0.44 lbs. [0.2 kg]
Certifications	Safety: UL, cUL, CE/EN60950 Emissions: FCC Class B, CE Mark
Warranty	Lifetime

(1) Port PoE+ Mid-Span Injector

Transition Networks' L1000i-at is a 1-port 10/100/1000Base-T PoE+ mid-span injector which provides a simple, cost-effective, fully IEEE 802.3at compliant solution to upgrade existing infrastructure with PoE+. Powering high-powered PoE+ enabled network devices, such as PTZ dome network cameras, can be done without the need to install power outlets and electrical cabling.

PoE technology allows IP phones, wireless access points, and security network cameras to receive power, along with data, over standard Ethernet cables, leaving the network infrastructure completely unaltered. PoE technology also allows for easier installation in areas where power cabling and outlets are unavailable, thereby reducing installation costs.

Mid-span injectors offer users the ability to take advantage of PoE technology while protecting investments they've made in purchasing, configuring, and deploying non-PoE supported devices such as standard Ethernet switches.

Ordering Information

L1000i-at
(1) 10/100/1000Base-T port PoE+ Injector

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU
Ex: L1000i-at-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Features

- Power-over-Ethernet Injector for 10/100/1000Base-T
- Remote Power Feeding
- Overload and short circuit protection
- Mixes Ethernet and power on the RJ-45 port
- Delivers power up to 100 meters
- Light weight and compact size
- Plug-and-play
- IEEE 802.3at and IEEE 802.3af compliant

Specifications

Standards	IEEE 802.3 IEEE 802.3U IEEE 802.3ab IEEE 802.3af IEEE 802.3at
Ports	(1) DATA IN RJ-45 Ethernet Port (1) DATA OUT PoE Injector RJ-45 Ethernet Port
Status LEDs	AC Power Feeding Power
Cable Requirements	10Base-T: 2-pair UTP/STP Cat.3,4,5 cable EIA/TIA-568 100-ohm(100 m) 100Base-TX: 2-pair UTP/STP Cat.5 cable (Cat. 5e recommended); EIA/TIA-568 100-ohm(100 m) 1000Base-T: 4-pair UTP/STP Cat.5e or above cable; EIA/TIA-568 100-ohm, 100m
Dimensions	Width: 2.65" [65 mm] Depth: 5.51" [140 mm] Height: 1.42" [36 mm]
Power Input	AC input voltage range: 100 – 240 VAC; 50 – 60Hz 0.72A
Power Output	55V @ 0.6A
Environment	Operating: 0°C to 40°C Storage: -40°C to 70°C
Weight	1 lb. [0.45 kg]
MTBF	116,685 MIL-HDBK-217F hrs.
Certifications	Safety: UL, cUL, CE/EN60950-1 Emissions: FCC Class B, CE Mark
Warranty	Lifetime

Unmanaged Hardened PoE+ Injector

(1) 10/100/1000Base-T Port + (1) 10/100/1000Base-T PoE+ Port

The SI-IES-1200-LRT is an unmanaged hardened PoE+ injector that adds up to 30 Watts of power on a network segment. Injectors are commonly used to power PoE devices in locations where a power source does not exist. The injector has redundant input power connections, and a fault alarm relay to ensure safe reliable operation in temperatures between -40°C and +75°C.

Transition Networks' hardened PoE injectors are certified to operate reliably in harsh environments such as those found on factory floors, outdoor enclosures or other challenging environments.

Ordering Information

SI-IES-1200-LRT
(1) 10/100/1000Base-T port
+ (1) 10/100/1000Base-T PoE+ port

Optional Accessories (sold separately)

OCA-P181610
18x16x10" Polycarbonate Enclosure

Industrial Power Supplies
(sold separately)

25130
Input: 85-264VAC, 120-370VDC
Output: 48VDC, .83A, 39.8 Watts

Features

- IEEE 802.3at PoE+ to supply 30 Watts
- Supports IEEE 802.3af
- Non-blocking architecture
- Compact size
- IP30 housing protection
- Link Pass Through
- Extended operating temperature (-40°C to 75°C)
- DIN Rail mount / optional wall mount brackets included

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3ab IEEE 802.3at IEEE 802.3af
Connectors	(1) DATA IN RJ-45 Ethernet Port (1) DATA OUT PoE+ RJ-45 Ethernet ort 30 Watts
Status LEDs	PWR1 (Power): ON=primary power connected PWR2 (Power): ON=backup power connected
Dimensions	Width: 1.2" [30 mm] Depth: 3.7" [95 mm] Height: 5.5" [140 mm]
Power Consumption	3.53 Watts (No PoE) 33.36 Watts (1 port PoE)
Power Input	24-48VDC
Ingress Protection	IP30
Environment	Operating: -40°C to 75°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1.3 lbs. [0.59 kg]
MTBF	8,371,781 hours Bellcore Ground Benign, Controlled; Temp. 30°C 4,185, 891 hours Bellcore Ground Fixed, Uncontrolled; Temp. 30°C
Certifications	Safety: UL508 FCC Class A, CE Mark, EN61000-4, EN61000-6-2, EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6(CS) EN61000-4-8 (Magnetic Field), IEC60068-2-27(Shock), IEC60068-2-32 (Free fall), IEC60068-2-6 (Vibration)
Warranty	Lifetime

Unmanaged Hardened PoE+ Injector/Converter

(1) 100/1000Base-X SFP Slot + (1) 10/100/1000Base-T PoE+ Port

The SI-IES-111D-LRT is a (2) port unmanaged hardened PoE+ injector that adds up to 30 Watts of power from it's PoE+ Port onto a network segment. The gigabit speed SFP slot provides the ultimate flexibility by allowing fiber SFP uplink ports with varying communication distances.

Ordering Information

SI-IES-111D-LRT
(1) 100/1000Base-X SFP slot
+ (1) 10/100/1000Base-T PoE+ port

Optional Accessories (sold separately)

SFP Modules

OCA-P181610
18x16x10" Polycarbonate Enclosure

Industrial Power Supplies:
(sold separately)

25130
Input: 88-264VAC, 120-370VDC
Output: 48-55VDC, 0.83A, 39.8Watts

25131
Input: 88-264VAC, 124-370VDC
Output: 48-55VDC, 1.6A, 76.88Watts

Features

- IEEE 802.3at PoE+ to supply 30 Watts on 10/100/1000Base-T port
- Supports IEEE 802.3af
- Supports dual speed for SFP slot
- Non-blocking architecture
- Compact size
- IP31 housing protection
- Link Pass Through
- Extended operating temperature (-40°C to 75°C)
- DIN Rail mount / optional wall mount brackets included
- Full/half-duplex flow control
- Auto-MDI/MDIX
- Auto-Negotiation
- Store-and-forward transmission
- 10K byte jumbo frames

Specifications

Standards	IEEE 802.3 IEEE 802.3x IEEE 802.3at IEEE 802.3af	IEEE 802.3u IEEE 802.3ab IEEE 802.3z
Max Frame Size	10K byte jumbo frames	
Connectors	(1) DATA IN 100/1000Base-X SFP Ethernet Port (1) DATA OUT 10/100/1000Base-T PoE+ RJ-45 Ethernet Port 30 Watts	
Status LEDs	Copper Port: Link/ACT Copper Port: Gigabit Transmission SFP Port: Link/ACT PoE Power Input Power	
Dimensions	Width: 1.44" [36.7 mm] Depth: 3.72" [94.5 mm] Height: 4.26" [108.4 mm]	
Power Consumption	3.53 Watts (No PoE) 32.725 Watts (1 port PoE)	
Power Input	48-57VDC Higher Voltage (50-53VDC) may be required for some high powered PD loads	
Ingress Protection	IP31	
Environment	Operating: -40°C to 75°C Storage: -40°C to 85°C Humidity: 10% to 95% (non-condensing) Altitude: 0 – 10,000 ft.	
Weight	1.3 lbs. [0.59 kg]	
MTBF	743,594 Hours Bellcore Ground Benign, Controlled; Temp 30°C 653,092 Hours Bellcore Ground Fixed, Uncontrolled; Temp 30°C	
Certifications	Safety: UL508, Class 1, Division 2, Groups A, B, C, and D Hazardous Locations, CE Mark, FCC Class A, EN55011, EN55022/EN61000-6-4 (EMC), EN55024/EN61000-6-2 (Immunity), EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6(CS), EN61000-4-8 (Magnetic Field), IEC60068-2-27(Shock), IEC60068-2-32 (Free fall), IEC60068-2-6 (Vibration)	
Warranty	Lifetime	

Unmanaged Hardened PoE+ Injector/Converter

(1) 100/1000Base-X SFP Slot + (2) 10/100/1000Base-T PoE+ Ports

The SI-IES-121D-LRT is a (3) port unmanaged hardened PoE+ injector / converter that adds up to 30 Watts of power from its (2) PoE+ ports onto 2 network segments. The gigabit speed SFP slot provides the ultimate flexibility by allowing fiber SFP uplink ports with varying communication distances.

Ordering Information

SI-IES-121D-LRT
(1) 100/1000Base-X SFP port
+ (2) 10/100/1000Base-T PoE+ ports

Optional Accessories (sold separately)

SFP Modules

OCA-P181610
18x16x10" Polycarbonate Enclosure

Industrial Power Supplies:
(sold separately)

25131
Input: 88-264VAC, 124-370VDC
Output: 48-55VDC, 1.6A, 76.88 Watts

Media Converters

Features

- IEEE 802.3at PoE+ to supply 30 Watts per port
- Supports IEEE 802.3af
- Supports dual speed for SFP slot
- Non-blocking architecture
- Compact, space saving size
- IP31 housing protection
- Link Pass Through
- Extended operating temperature (-40°C to 75°C)
- DIN Rail mount / optional wall mount brackets included
- Full/half-duplex flow control
- Auto-MDI/MDIX
- Auto-Negotiation
- Store-and-forward transmission
- 10K byte jumbo frames

Specifications

Standards	IEEE 802.3 IEEE 802.3x IEEE 802.3at IEEE 802.3af	IEEE 802.3u IEEE 802.3ab IEEE 802.3z
Max Frame Size	10K byte jumbo frames	
Connectors	(1) DATA IN 100/1000Base-X SFP Ethernet Port (2) DATA OUT 10/100/1000Base-T PoE+ RJ-45 Ethernet Port 30 Watts	
Status LEDs	Copper Port: Link/ACT Copper Port: Gigabit Transmission SFP Port: Link/ACT PoE Power Input Power	
Dimensions	Width: 1.44" [36.7 mm] Depth: 3.72" [94.5 mm] Height: 4.26" [108.4 mm]	
Power Consumption	3.53 Watts (No PoE) 63.5 Watts (2 ports PoE)	
Power Input	48-57VDC Higher Voltage (50-53VDC) may be required for some high powered PD loads	
Ingress Protection	IP31	
Environment	Operating: -40°C to 75°C Storage: -40°C to 85°C Humidity: 10% to 95% (non-condensing) Altitude: 0 – 10,000 ft.	
Weight	1.3 lbs. [0.59 kg]	
MTBF	717,339 Hours Bellcore Ground Benign, Controlled; Temp 30°C 613,639 Hours Bellcore Ground Fixed, Uncontrolled; Temp 30°C	
Certifications	Safety: UL508, Class 1, Division 2, Groups A, B, C, and D Hazardous Locations, CE Mark, FCC Class A, EN55011, EN55022/EN61000-6-4 (EMC), EN55024/EN61000-6-2 (Immunity), EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6(CS), EN61000-4-8 (Magnetic Field), IEC60068-2-27(Shock), IEC60068-2-32 (Free fall), IEC60068-2-6 (Vibration)	
Warranty	Lifetime	

Industrial Power Supply

Features

- Universal AC input/full range
- 3 pole AC inlet IEC320-C14
- Built-in active power factor controller function
- Industrial (-30°C to +70°C) operating temperature
- No load power consumption ≤0.15 Watts
- Energy efficiency Level VI
- Compliant with EIASA 2007/DoE, NRCan, AU/NZ MEPS, EU ErP and CoC Version 5
- Class 1 power (with earth pin)
- Short circuit/overload/over voltage/ over temperature protection
- Fully enclosed 94V-0 flame retardant plastic case
- LED power on indicator

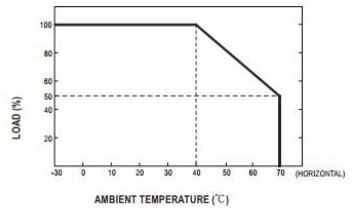
Specifications

Connector	4-pin DIN plug (see plug assignment)
Cable	UL1185 16AWG
Output Voltage	48V (Output voltage set at point measure by plug terminal +50% load)
Rated Current	1.87A
Current Range	0-1.87A
Rated Power	90W (max)
Ripple & Noise	240mVp-p (max) (Measured at 20MHz by using a 12" twisted pair terminated with a 0.1uf &47uf capacitor)
Voltage Tolerance	±2.5% (Includes set up tolerance, line regulation, load regulation)
Line Regulation	±1.0% (Line regulation is measured from low line to high line at rated load)
Load Regulation	±2.5%
Setup, Rise Time	1000ms, 50ms/230VAC; 1000ms, 50ms/115VAC at full load (Length of setup time is measured at first cost start. Turning ON/OFF the power supply may lead to increase of the setup time)
Hold Up Time	20ms/230VAC typ; 20ms/115VAC at full load typical
Input Voltage	90-264VAC, 127-370VDC (Derating may be needed under low input voltages. Check the derating curve for more details.)
Input Frequency Range	47-63 Hz
Power Factor	PF>0.91/230VAC typical; PF>0/95/115VAC at full load typical
Efficiency	91% typical
AC Current	1.3A/115VAC typical; 0.6A/230VAC typical
Inrush Current	70A/230VAC (max)
Leakage Current	1mA/240VAC (max)
Withstand Voltage	I/P-O/P: 3KVAC, I/P-FG: 2KVAC. O/P-FG: 0.5KVAC
Isolation Resistance	I/P-O/P, I/P-FG, O/P-FG: 100M Ohms/500VDC/25°C/70%RH
Protection	Overload: 110-150% rated output power (Hiccup mode, recovers automatically after fault condition is removed) Overvoltage: 105-135% rated output voltage (Shut down o/p voltage, re-power on to recover) Over Temperature: Shut down o/p voltage, re-power on to recover
Dimensions	Width: 5.71" [145 mm] Depth: 2.36" [60 mm] Height: 1.26" [32 mm]
Environment	Operating: -30°C to +70°C (See derating curve) Storage: -40°C to +85°C Humidity: 20% to 90% (non-condensing)
Weight	0.99 lbs. [0.45 kg]
MTBF	348.7K hours min MIL-HDBK-217F (25°C)
Vibration	10-500Hz, 2G 10min/1 cycle period for 60 min each along X,Y,Z axes
Certifications	Safety: UL60950-1, CSA C22.2, TUV EN60950-1, BSMI CNS 14336, CCC Gb4943, PSE J60950-1, AS/NZS 60950.1 approved Emmisions: EN55022 class B, EN61000-3-2,3, FCC Part 15/CISPR22 class B, CNS13438 class B, GB9254, GB17625.1 Immunity: EN61000-4-2,3,4,5,6,8,11 light industry level, criteria A

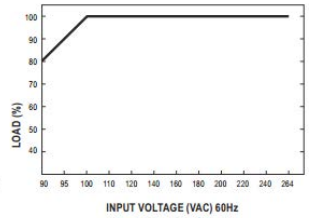
Ordering Information

25148
90 ~ 264 VAC; 127 ~ 370 VDC
(Country specific power cord included)

■ Derating Curve



■ Static Characteristics



■ Plug Assignment

DC plug: power DIN 4 pin with lock type

KYCON KPPX-4P

Pin No.	OUTPUT
1, 2	+V
3, 4	-V
Shell	NC

Enterprise Switching Built for a High Level of Service and Reliability

You need your enterprise network to do more, for more users, for less. As a result, new technologies may have outpaced your cabling infrastructure. You could begin an expensive upgrade of your cabling plant, or, you could use Transition Networks solutions to migrate to a fiber-based cabling system at a fraction of the cost.

Transition Networks' portfolio of multilayer Ethernet switching products are designed to facilitate low-cost network evolution by allowing customers to only pay for the port counts and features they need. Our switching portfolio offers customers unique configurations and a high level of service and reliability, all while serving to ease network stress caused by high bandwidth demand and applications requiring advanced capacity to run them.

Transition Networks solutions can link new fiber cabling with legacy copper-based network devices – including RJ-45 based switches, routers, and NICs – to greatly reduce the expense of a fiber upgrade while improving bandwidth, distance and security throughout the network.

Hardened Ethernet Devices - Built to Perform

Transition Networks is an industry leader with over 30 years experience designing fiber integration products which affordably deliver the reliability that today's industrial networks require. With unparalleled experience serving the unique needs of our customers, world-class 24/7 support, and a Lifetime Hardware Warranty, Transition Networks is the choice for cost-effective fiber integration, extending from the office to the factory floor, and other environments where the need for performance in extended temperatures is critical.

Our hardened Ethernet switches and media converters all provide interoperable networking solutions that will operate under extreme conditions, improve network performance and reduce operational expenses. Providing Class 1, Div 2 certified products for hazardous environments; shock, vibration and temperature enduring products for transportation networks; and intelligent products that meet security protocols for maximum protection and control in utility and process networks, Transition Networks offers the ability to affordably integrate the benefits of fiber optics into any data network – in any application – in any environment.

Gigabit Ethernet NID

(2) 10/100/1000Base-T RJ-45 Ports + (2) 100/1000Base-X SFP Slots

The Transition Networks' Net2Edge LIB-304 is a multiservice NID that provides SLA assurance & advanced fault management that is MEF CE 2.0 compliant. IEEE 802.1ag Service OAM, ITU Y.1731 Performance Monitoring & IEEE 802.3ah Link OAM are standard features. The LIB-304 supports advance features such as IPv6 & IPv4, VLANs, QoS, bandwidth allocation, ring protection, jumbo frames & numerous security features.

Features

- Fan-less design
- Optional MPLS-TP
- SNMP v1, v2c, & v3
- IPv6 & IPv4 management support
- VLAN (IEEE 802.1Q) Q-in-Q (C-Tag / S-Tag)
- RMON & Syslog
- OAM Support: IEEE 802.3ah Link OAM, IEEE 802.1ag Service OAM & ITU-T Y.1731 Performance Monitoring
- RFC-2544 & ITU-T Y.1564 Traffic Generation & Reports
- Protection: ITU-T G.8032/G.8031 IEEE RSTP, MSTP, LACP, Logical Link Forwarding
- IEEE 1588v2 (ptp)
- Future optional Sync-E capability
- Jumbo Frame Support (10K)
- Zero Touch Provisioning
- Wire speed loopbacks
- OTDR
  - Resolution of 10 meters or better
  - Accuracy of 50 meters or better
- Operates with any conventional MSA SFPs (Multisource Agreement)
  - Low power dissipation <1.5W
- SNMP management interface

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ab IEEE 802.3x IEEE 802.3ad IEEE 802.1p IEEE 802.1Q IEEE 802.1w IEEE 802.1s IEEE 802.1x IEEE 802.1AB IEEE 802.3ah IEEE 802.1ag RFC 2544 / ITU-T Y.1564 ITU-T Y.1731 ITU-T G.8032/G.8031 IEEE 1588-2008 (v2) (ptp)
Ports	(2) 10/100/1000Mbps Base-T ports (2) 100/1000Mbps or SGMII SFP slots (1) RS232 Console Management port
Dimensions	Width: 7.48" [190 mm] Depth: 8.54" [217 mm] Height: 1.71" [43.5 mm]
Power Input	Single 100-240VAC; 50-63Hz Auto-sensing PSU
Power Consumption	10 Watts (max)
Environment	Operating: -20°C to +50°C Storage: -40°C to +70°C Humidity: 5% to 90% (non-condensing)
Weight	2.2 lbs. [1 kg]
Certifications	CE
Warranty	1 Year

Applications

- MEF 2.0 Certified Services
- Mobile Backhaul
- Business Ethernet
- Fiber to the Premise (FTTP)
- SLA Enforcement Performance Statistics
- Migration to Packet Networks
- QoS for Differentiated Services
- Small Cell / DAS
- Cloud Services

Power Cord Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: LIB-304-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Ordering Information

LIB-304
(2) 10/100/1000Base-T ports
+ (2) 100/1000Base-X SFP slots (empty)

Optional Accessories (sold separately)

SFP Modules

CE-225-N-MPLS-TP-SW
Software update to enable MPLS-TP capability

Mounting Options (sold separately)

WMB-N2E-1
Bracket to mount a single LIB-304 in a 19" rack

WMB-N2E-2
Rack mount kit to mount 2 units side by side in a 19" rack

Software Features

- MEF 2.0 E-LINE (EPL & EVPL) E-LAN (EP-LAN & EVP-LAN) E-ACCESS (ACCESS EPL & EVPL) E-TREE (EP-TREE & EVP-TREE)
- UNI or NNI configuration
- TOS/Diffserv
- Quality of Service (IEEE 802.1p): 8 queues; strict priority & WRR, shaping, policing, P-bit & DSCP
- Management via CLI, Web, SS/SSL & SNMP (v1, v2c & v3)
- Port configuration, status, statistics & monitoring
- RADIUS, TACACS+ & ACL
- Remote backup / restore configuration
- Remote firmware upgrades
- Alarms via Syslog & SNMP
- Remote loopbacks
- L2CP
- LLDP
- LLF
- Diagnostic Monitoring Interface - SFF-8472
- Dying/Last Gasp
- Port Mirroring
- Link Aggregation Control Protocol (LACP)

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Gigabit Ethernet CPE with LTE Modem

(4) 10/100/1000Base-T RJ-45 Ports + (1) 100/1000Base-X SFP Slots

Transition Networks' Net2Edge ATLAS Series CPE is a fully cased, mains powered, stand-alone CPE device, offering LTE failover and backup. The ATLAS operates at full bandwidth (1Gbps bidirectional) on a single fiber link, supporting up to (4) 10/100/1000Base-T RJ-45 ports, and (1) 100/1000Mbps fiber SFP slot. The integrated LTE modem supports a single SIM card (not provided) and can be used for optional data failover. Other use cases are rapid deployment ahead of fiber roll-out.

Ordering Information

N2E-ATLAS-60000
(4) 10/100/1000Base-T RJ-45 ports
+ (1) 100/1000Base-X SFP slots (empty)
+ (1) optional LTE Modem (empty)

N2E-ATLAS-6010x
(4) 10/100/1000Base-T RJ-45 ports
+ (1) 100/1000Base-X SFP slots (empty)
+ (1) LTE Modem (country specific)

Optional Accessories (sold separately)

SFP Modules

Features

- Management over LAN, WAN or LTE (L2TPv3 session)
- Static Unmanaged L2TPv3 Ethernet Pseudowire
- Dual L2TP server
- Management VLAN on any copper or fiber port
- IPv4 management support
- VLAN (IEEE 802.1Q) Q-in-Q (C-Tag)
- Syslog
- 4K VLANS
- Auto-Negotiation
- Forced speed/duplex modes
- Full duplex / flow control
- Loop Protection
- Traffic limiting by interface
- 2000 byte Jumbo frames over Ethernet ports
- Static Routing
- Bidirectional Forwarding Detection (BFD)
- Linux based software stack
- Netconf
- QoS support on both port and logical interfaces
- Ingress and egress rate limiting per port
- TACACS+ & ACL
- Remote firmware upgrades
- LLDP

Specifications

Standards	IEEE 802.3 IEEE 802.3ad IEEE 802.1Q IEEE 802.3u IEEE 802.3z IEEE 802.3x IEEE 802.1p IEEE 802.1AB
Ports	(4) 10/100/1000Mbps Base-T ports (1) 100/1000Mbps SFP slots (1) RJ-45 Management ports
Dimensions	Width: 8.58" [218 mm] Depth: 7.48" [190 mm] Height: 1.73" [44 mm]
Power Input	100 - 240VAC (0.1A max)
Power Consumption	20 Watts
Environment	Operating: 0°C to 55°C Storage: -20°C to 65°C
Weight	2.31 lbs. [1.05 kg]
Warranty	1 Year

Features Continued

- Generic storm controllers for flooded broadcast, flooded multicast, and flooded unicast traffic
- Static IP and DHCP client support
- Read-only device config/status support via SNMP v2c and V3
- SSHv2
- NTP server syncing
- AAA accounting
- Front Panel LED for configurable alarms
- Supports OTDR capture from OTDR SFPs
- Additional features may be available by request

6010x = LTE Modem

LTE Module	Region (Carrier)	Frequency Bands
60100	Latin America / Australia (Telstra) / New Zealand	LTE-FDD: B1/B2(does not support RX diversity)/B3/B4/B5/B7/B8/B2
		LTE-TDD: B40
		WCDMA: B1/B2/B5/B8
		GSM/EDGE: B2/B3/B5/B8
60101	North America (A&T; T-Mobile) / Canada (Rogers; Telus)	LTE-FDD: B2/B4/B12
		WCDMA: B2/B4/B5
60102	EMEA (Global Vodafone; Europe Deutsche Telekom; Europe Telefonica) / South Korea (SKT; KT*; LGU+*) / Thailand / India	LTE-FDD: B1/B3/B5/B7/B8/B20
		LTE-TDD: B38/B40/B41
		WCDMA: B1/B5/B8
		GSM/EDGE: B3/B8
60103	Latin America / Australia /New Zealand	LTE-FDD: B1/B2(does not support RX diversity)/B3/B4/B5/B7/B8/B28
		LTE-TDD: B40
		WCDMA: B1/B2/B4/B5/B8
		GSM/EDGE: B2/B3/B5/B8
60104	Japan (NTT DOCOMO; SoftBank; KDDI)	LTE-FDD: B1/B3/B8/B18/B19/B26
		LTE-TDD: B41
		WCDMA: B1/B6/B8/B19
60105	North America (Verizon)	LTE-FDD: B4/B13
60106	North America (FirstNet)	LTE-FDD: B2/B4/B5/B12/B13/B14/B66/B71
		WCDMA: B2/B4/B5
60107	Mexico	LTE-FDD: B2/B4/B5/B7/B8/B66
		WCDMA: B2/B4/B5

*Under Development

Power Cord Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: N2E-ATLAS-60000-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Remotely Managed NID with Built-in Traffic Generator

Transition Networks' managed S3290 NID provides advanced packet performance metering and service creation directly at the customer premises and cell sites. The S3290 is optimized for business Ethernet and mobile backhaul deployments.

The S3290 is a multi-service NID that provides SLA-assurance and advanced fault management that is MEF CE 2.0 certified. The S3290 supports advanced features and numerous security features. The S3290 can be managed and provisioned with Transition Networks CommandPoint NMS or via Web, CLI and SNMP (v1, v2c & v3). The S3290 offers AC or DC power inputs for operation in a variety of environments. The SFP ports support 100Mbps, 1000Mbps or SGMII SFPs. CWDM and Bi-Di SFPs are also supported, allowing for flexible network architectures.

Features

- Any port can be network (NNI) or client (UNI)
- MPLS-TP
- SNMP v1, v2c, and v3
- IPv6 and IPv4 support
- VLAN (IEEE 802.1Q) in-Q (C-Tag / S-Tag)
- RMON and SYSLOG
- OAM Support:
  - IEEE 802.3ah Link OAM.
  - IEEE 802.1ag Service OAM
  - ITU Y.1731 Performance Monitoring
- Protection:
  - ITU G.8032/G.8031
  - IEEE RSTP, MSTP
- IEEE 1588v2
- DC or AC power input
- Jumbo Frame Support (10K)
- Fan-less design
- Wire speed loopbacks
- RFC 2544 and Y.1564 Traffic Generation and Reports
- SLA Enforcement Performance statistics

Software Features

- E-LINE (EPL and EVPL)
  E-LAN (EP-LAN and EVP-LAN)
  E-ACCESS (ACCESS EPL and EVPL)
  E-TREE (EP-TREE and EVP-TREE)
- UNI or NNI configuration
- TOS/DiffServ
- Quality of Service (IEEE 802.1p): 8 queues; strict priority and WRR, shaping, policing, P-bit and DSCP

Specifications

Standards	IEEE 802.3 IEEE 802.3z IEEE 802.3x IEEE 802.1p IEEE 802.1w IEEE 802.1X IEEE 802.3ah IEEE 1588-2008 (v2)	IEEE 802.3u IEEE 802.3ab IEEE 802.3ad IEEE 802.1Q IEEE 802.1s IEEE 802.1AB IEEE 802.1ag ITU Y.1731 PM
Data Rate	Copper: 10/100/1000 Mbps (RJ-45) SFP (empty): 100/1000 Mbps or SGMII	
Max MAC Address	8K	
Max VLANs	4K	
Max Frame Size	10,000 bytes (10K)	
Status LEDs	Power, Port Activity, Port Duplex	
Dimensions	Width: 5.95" [151.13 mm] Depth: 6.5" [165.1 mm] Height: 1" [25.4 mm]	
Power Consumption	Barrel input: 520 mA at 12 VDC Terminal block input: 340 mA at 21 VDC	
Power Input	AC: 12 VDC via barrel connector using 100-250VAC The following AC adapters are available: Power Supply 25025 temperature range: 0°C to 30°C (included with product) Power Supply 25132 temperature range: -30°C to 70°C (sold separately) DC: 21-60VDC via terminal block	
Environment	Operating: 0°C to +65°C Storage: -40°C to +85°C Humidity: 5% to 95% (non-condensing)	
Certifications	UL listed, CE, EN55022 Class A	
Warranty	5 Year Hardware	

Power Supply Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: S3290-24-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Ordering Information

S3290-24
(2) 10/100/1000Mbps RJ-45 ports with (4) 100/1000Mbps SFP ports

S3290-42
(4) 10/100/1000Mbps RJ-45 ports with (2) 100/1000Mbps SFP ports

Optional Accessories (sold separately)

SFP Modules

25132
Optional Power Supply supporting an operating environment of -30°C to 70°C

S3290-RPS
Isolated Wide Input 20W Power Supply Assembly

Mounting Options (sold separately)

WMBL
Wall Mount Bracket Long Kit

WMBD
DIN Rail Vertical Mount Kit

S3290-RM-BRKT
Single Rack Mount Bracket for one S3290; The use of two brackets allows two S3290 units to be installed in 1U of rack space

RMS19-NID2-01
2-Slot S3290 shelf, includes 4 device brackets and reversible rack mount ears

Software Features Continued

- Management via CommandPoint NMS, CLI, Web, SSH/SSL and SNMP (V1, V2, &V3)
- Port configuration, status, statistics and monitoring
- RADIUS, TACACS+ and ACL
- Remote backup / restore configuration
- Remote firmware upgrades
- Alarms via SYSLOG & SNMP
- Remote loopbacks
- L2CP
- LLDP
- Diagnostic Monitoring Interface SFF-8472
- Dying/Last Gasp
- Port Mirroring
- Link Aggregation Control Protocol (LACP)

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Gigabit Ethernet NID

(2 or 4) 10/100/1000Base-T RJ-45 Ports + (4 or 2) 100/1000Base-X SFP Slots

The Transition Networks' Net2Edge LIB-306 Series is a multiservice NID that provides SLA assurance & advanced fault management that is MEF CE 2.0 compliant. IEEE 802.1ag Service OAM, ITU Y.1731 Performance Monitoring & IEEE 802.3ah Link OAM are standard features. The LIB-306 Series supports advance features such as IPv6 & IPv4, VLANs, QoS, bandwidth allocation, ring protection, jumbo frames & numerous security features.

Features

- Fan-less design
- Optional MPLS-TP
- SNMP v1, v2c, & v3
- IPv6 & IPv4 management support
- VLAN (IEEE 802.1Q) Q-in-Q (C-Tag / S-Tag)
- RMON & Syslog
- OAM Support: IEEE 802.3ah Link OAM, IEEE 802.1ag Service OAM & ITU-T Y.1731 Performance Monitoring
- RFC-2544 & ITU-T Y.1564 Traffic Generation & Reports
- Protection: ITU-T G.8032/G.8031 IEEE RSTP, MSTP, LACP, Logical Link Forwarding
- IEEE 1588v2 (ptp)
- Future optional Sync-E capability
- Jumbo Frame Support (10K)
- Zero Touch Provisioning
- Wire speed loopbacks
- OTDR
  - Resolution of 10 meters or better
  - Accuracy of 50 meters or better
- Operates with any conventional MSA SFPs (Multisource Agreement)
  - Low power dissipation <1.5W
- SNMP management interface

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ab IEEE 802.3x IEEE 802.3ad IEEE 802.1p IEEE 802.1Q IEEE 802.1w IEEE 802.1s IEEE 802.1x IEEE 802.1AB IEEE 802.3ah IEEE 802.1ag RFC 2544 / ITU-T Y.1564 ITU-T Y.1731 ITU-T G.8032/G.8031 IEEE 1588-2008 (v2) (ptp)
Ports	(2 or 4) 10/100/1000Mbps Base-T ports (4 or 2) 100/1000Mbps or SGMII SFP slots (1) RJ-45 Management port
Dimensions	Width: 7.48" [190 mm] Depth: 8.54" [217 mm] Height: 1.71" [43.5 mm]
Power Input	Single 100-240VAC; 50-63Hz Auto-sensing PSU and -18VDC to -57VDC PSU
Power Consumption	10 Watts (max)
Environment	Operating: -20°C to +55°C Storage: -40°C to +70°C Humidity: 5% to 85% (non-condensing)
Weight	2.2 lbs. [1 kg]
Certifications	CE
Warranty	1 Year

Applications

- MEF 2.0 Certified Services
- Mobile Backhaul
- Business Ethernet
- Fiber to the Premise (FTTP)
- SLA Enforcement Performance Statistics
- Migration to Packet Networks
- QoS for Differentiated Services
- Small Cell / DAS
- Cloud Services

Power Cord Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU; Ex: LIB-306-24-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Ordering Information

LIB-306-24
(2) 10/100/1000Base-T ports
+ (4) 100/1000Base-X SFP slots (empty)

LIB-306-42
(4) 10/100/1000Base-T ports
+ (2) 100/1000Base-X SFP slots (empty)

Optional Accessories (sold separately)

SFP Modules

CE-306-N-MPLS-TP-SW
Software update to enable MPLS-TP capability

Mounting Options (sold separately)

WMB-N2E-1
Bracket to mount a single LIB-306 Series in a 19" rack

WMB-N2E-2
Rack mount kit to mount 2 units side by side in a 19" rack

Software Features

- MEF 2.0 E-LINE (EPL & EVPL) E-LAN (EP-LAN & EVP-LAN) E-ACCESS (ACCESS EPL & EVPL) E-TREE (EP-TREE & EVP-TREE)
- UNI or NNI configuration
- TOS/Diffserv
- Quality of Service (IEEE 802.1p): 8 queues; strict priority & WRR, shaping, policing, P-bit & DSCP
- Management via CLI, Web, SS/SSL & SNMP (v1, v2c & v3)
- Port configuration, status, statistics & monitoring
- RADIUS, TACACS+ & ACL
- Remote backup / restore configuration
- Remote firmware upgrades
- Alarms via Syslog & SNMP
- Remote loopbacks
- L2CP
- LLDP
- LLF
- Diagnostic Monitoring Interface - SFF-8472
- Dying/Last Gasp
- Port Mirroring
- Link Aggregation Control Protocol (LACP)

Unmanaged Gigabit Ethernet Switch

(8) 10/100/1000Base-T Ports

This (8) 10/100/1000Base-T port switch with Auto-MDI/MDIX is an unmanaged multi-port switch that can be used to build high-performance switched networks. This switch is a store-and-forward device that offers low latency for high speed networking. It is designed for the core of the network backbone computing environment to solve traffic block problems at SME (small, medium enterprise) businesses.

Ordering Information

S8TB
(8) 10/100/1000Base-T ports

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: S8TB-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Features

- Small Form Factor
- Internal Power Supply
- Auto-Negotiation
- Auto-MDI/MDIX
- Supports full and half-duplex for 10/100Mbps and full-duplex for 1000Mbps
- Wire-speed packet filtering and forwarding rate
- Support Jumbo Frame up to 9K bytes
- Supports IEEE 802.3az energy efficient Ethernet

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3ab IEEE 802.3az
Connectors	(8) 10/100/1000 RJ-45 ports
Protocols	CSMA/CD
Technology	Store-and-forward switching architecture
MAC Address	8K-entry (Rev A), 4K-entry (Rev B)
Memory Buffer	128K bytes (Rev A), 192K (Rev B)
Status LEDs	(8) port LEDs speed (Green: 1000Mbps, Amber 10/100 Mbps), Link/Activity (flashing)
Backplane	16 Gbps
Dimensions	Width: 3.94” [100 mm] Depth: 6.3” [160 mm] Height: 1.28” [32.5 mm]
Power Consumption	3.5 Watts (max)
Power Input	Internal Power: 100 - 240VAC
Environment	Operating: 0°C to 40°C Humidity: 10% to 90% (non-condensing)
Weight	1.35 lbs. [0.61 kg]
Certifications	Safety: LVD Emissions: FCC Class B, CE Mark, UL Listed, CCC
Warranty	Lifetime

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Managed Layer 2 Gigabit Ethernet Switch

(4) 10/100/1000Base-T Ports + (4) 100/1000Base-X SFP Slots

This switch is a high performance Layer 2 managed switch with (4) 10/100/1000Base-T copper ports and (4) dual speed 100/1000Base-X SFP slots.

Ordering Information

SM4T4DPA
(4) 10/100/1000Base-T ports
+ (4) 100/1000Base-X SFP slots

Optional Accessories (sold separately)

SFP Modules

Mounting Brackets (sold separately)

RMSM4-01
19“ Rack Mount Bracket

BRSM8-01
Wall Mount Bracket

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: SM4T4DPA-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Features

- Supports Jumbo Frame up to 9K bytes
- Authentication – RADIUS IEEE 802.1X, TACACS+
- Security - Supports SSH/SSL
- Port based or tagged (IEEE 802.1Q) VLAN, QinQ double tag VLAN, Guest VLAN
- Bandwidth Allocation Ingress and Egress
- DHCP Snooping including option 82
- IP-MAC binding for security
- ACL based on Ethernet Type / ARP / IPv4 for packets permit or deny, rate limitation and port copy
- LLDP (Link Layer Discovery Protocol)
- SYSLOG for device management
- IEEE 802.3az Energy Efficiency
- Single IP management
- Web Management, SNMP V1/V2c/V3, Telnet, CLI
- Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP)
- Support IGMP Snooping V1/V2/V3, IGMP Proxy and GVRP
- Supports 8 hardware queues with Strict priority and WRR. Per port bandwidth management
- Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- Port Based VLAN, IEEE 802.1Q tag-based, 4096 VLAN entries, MAC-based VLAN, Private VLAN Edge, Priority VLAN override
- Firmware Update, configure backup/restore through Web GUI and TFTP
- Support IPv4/IPv6 dual protocol stack
- Redundant Ring Protection Protocol

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s IEEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1AB IEEE 802.3az IEEE 802.1X
Connectors	(1) RJ-45 console port (4) 10/100/1000 RJ-45 ports (4) 100/1000 SFP slots
Protocols	CSMA/CD
Technology	Store-and-forward switching architecture
MAC Address	8K MAC address table
Backplane	16 Gbps
Dimensions	Width: 8.66” [220 mm] Depth: 6.26” [159 mm] Height: 1.69” [44 mm]
Power Input	Internal power: 100-240VAC
Environment	Operating: 0°C to 40°C Humidity: 5% to 90% (non-condensing)
Weight	3.85 lbs. [1.75 kg]
Certifications	Safety: LVD Emissions: FCC Class A, CE
Warranty	Lifetime

Managed Layer 2 Gigabit Ethernet Switch

(8) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP/RJ-45 Combo Ports

This switch is a high performance Layer 2 managed switch with (8) 10/100/1000Base-T copper ports and (2) dual speed 100/1000Base-X SFP/RJ-45 Combo ports.

Key benefits include: secure and high performance connections, flexible copper/fiber dual uplinks, and unified communications with open standard.

Ordering Information

SM10T2DPA
(8) 10/100/1000Base-T ports
+ (2) 100/1000Base-X SFP/RJ-45 combo ports

Optional Accessories (sold separately)

SFP Modules

Mounting Brackets (sold separately)

RMSM8-01
19" Rack Mount Bracket

BRSM8-01
Wall Mount Bracket

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: SM10T2DPA-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Features

- Support Jumbo Frame up to 9K bytes
- Authentication – RADIUS IEEE 802.1X, TACACS+
- Security - Support SSH/SSL
- Port based or tagged (IEEE 802.1Q) VLAN, QinQ double tag VLAN, Guest VLAN
- Bandwidth Allocation Ingress and Egress
- DHCP Snooping including option 82
- IP-MAC binding for security
- ACL based on Ethernet Type / ARP / IPv4 for packets permit or deny, rate limitation and port copy
- LLDP (Link Layer Discovery Protocol)
- SYSLOG for device management
- IEEE 802.3az Energy Efficiency
- Web Management, SNMP V1/V2c/V3, Telnet, CLI
- Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP)
- Support IGMP Snooping V1/V2/V3, IGMP Proxy and GVRP
- Supports 8 hardware queues with Strict priority and WRR. Per port bandwidth management
- Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- Port Based VLAN, IEEE 802.1Q tag-based, 4096 VLAN entries, MAC-based VLAN, Private VLAN Edge Priority VLAN override
- Firmware Update, configure backup/restore through Web GUI and TFTP
- Support IPv4/IPv6 dual protocol stack

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s IEEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1AB IEEE 802.3az IEEE 802.1X
Connectors	(1) RJ-45 console port (8) 10/100/1000 RJ-45 ports (2) 100/1000 SFP/RJ-45 ports
Protocols	CSMA/CD
Technology	Store-and-forward switching architecture
MAC Address	8K MAC address table
Backplane	20 Gbps
Dimensions	Width: 11.02" [280 mm] Depth: 6.53" [166 mm] Height: 1.73" [44 mm]
Power Input	Internal power: 100-240VAC
Environment	Operating: 0°C to 40°C Humidity: 5% to 90% (non-condensing)
Weight	4.2 lbs. [1.90 kg]
Certifications	Safety: LVD Emissions: FCC Class A, CE
Warranty	Lifetimevw

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Managed Layer 2 Gigabit Ethernet Switch

(20) 10/100/1000Base-T Ports + (4) 100/1000Base-X SFP/RJ-45 Combo Ports + (2) 100/1000Base-X SFP Slots

This switch is a high performance Layer 2 managed switch with 52Gbps switching capacity. It provides (20) 10/100/1000 copper ports, (4) 100/1000Base-X SFP/RJ-45 Combo Ports, and (2) 100/1000Base-X dual speed SFP slots.

Ordering Information

SM24T6DPA
(20) 10/100/1000Base-T ports
+ (4) 100/1000Base-X SFP/RJ-45 combo ports
+ (2) 100/1000Base-X SFP slots
(19" Rack Mount Brackets Included)

Optional Accessories (sold separately)

SFP Modules

Features

- Support IPv4/IPv6 dual protocol stack
- Support Jumbo Frame up to 9K bytes
- Authentication – RADIUS IEEE 802.1X, TACACS+
- Security - Support SSH/SSL
- Port based or tagged (IEEE 802.1Q) VLAN, MAC based VLAN, Management VLAN and Private VLAN Edge
- DHCP Relay including option 82
- L2/L3/L4 ACLs Support MAC ACL, IP standard/extended ACL
- LLDP (Link Layer Discovery Protocol)
- IEEE 802.3az Energy Efficiency
- IP Source Guard, Port Security
- DHCP Server
- Device Management System (DMS): Graphic Monitoring, Grouping, Traffic Monitoring

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ab IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s EEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1X IEEE 802.3az
Connectors	(1) RJ console port (20) 10/100/1000 RJ-45 ports (4) 100/1000 SFP/RJ-45 combo ports (2) 100/1000 SFP slots
Protocols	CSMA/CD
Technology	Store-and-forward switching architecture
MAC Address	8K MAC address table
Backplane	52 Gbps
Dimensions	Width: 17.4" [442 mm] Depth: 8.3" [211 mm] Height: 1.73" [44 mm]
Power Input	100 - 240VAC
Environment	Operating: 0°C to 50°C Humidity: 5% to 90% (non-condensing)
Weight	5.3 lbs. [2.4 kg]
Certifications	Safety: IEC 60950-1, UL Listed EMC: EN55022 Class A, IEC61000-3, EN55025, IEC61000-4, CISPR PUB.22 Class A, FCC Part 15, ICES-003 Class A
Warranty	Lifetime

Software Features

- Management: Web Management, SNMP V1/V2c/V3, Telnet, CLI
- Port Trunk: Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP) and static trunk
- IGMP: Support IGMP Snooping V1/V2/V3, GVRP, IGMP Proxy, and IGMP Querier
- Quality of Service: Supports 8 egress queues per port enable differentiated management of up to 8 traffic types across the stack. Strict priority and WRR
- Spanning Tree: Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- VLAN: Port Based VLAN, IEEE 802.1Q tag-based, up to 4k VLAN entries, QinQ, MAC-based VLAN, Private VLAN, Guest VLAN, Voice VLANs and Management VLAN
- IPv4 / IPv6 Static Routing
- Firmware Update, configure backup/restore through TFTP and HTTP

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: SM24T6DPA-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Managed Gigabit Ethernet Fiber Switch

(12) 100/1000Base-X SFP Slots + (2) 1G/10GBase-X SFP+ Slots + (2) 10/100/1000Base-T RJ-45 Ports

This switch is a next generation fully managed fiber switch with 68Gbps switching capacity. It provides (12) 100/1000 dual speed SFP slots, (2) 1G/10G SFP+ slots and (2) additional Gigabit RJ-45 ports.

Ordering Information

SM12DP2XA
(12) 100/1000Base-X SFP slots
+ (2) 1G/10GBase-X SFP+ slots
+ (2) 10/100/1000Base-T RJ-45 ports
(includes 19" rack mount brackets)

Optional Accessories (sold separately)

SFP Modules

Power Supplies (sold separately)

25130
Input: 88 -264VDC, 120-370VDC
Output: 48VDC, 39.8 Watts, -20°C to +70°C

Features

- IPv6 Management
- Support Jumbo Frame up to 9K bytes
- Authentication – RADIUS, TACACS+
- IEEE 802.1X: RADIUS authentication, authorization and accounting, MD5 hash, guest VLAN, single/multiple host mode and single/multiple sessions
- DHCP Relay, DHCP Option 82, DHCP Snooping, DHCP Server
- L2/L3/L4 ACLs Support MAC, VLAN ID or IP, protocol, port, DSCP/IP precedence/TCP.UDP, Ether Type, ICMP, TCP flag
- LLDP (Link Layer Discovery Protocol)
- IEEE 802.3az Energy Efficiency
- IP Source Guard, Port Security
- Port Mirroring
- Firmware Update through TFTP/ HTTP and console
- Syslog

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s IEEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1AB IEEE 802.1X IEEE 802.3az
Connectors	(12) 100/1000 SFP slots (2) 1G/10G SFP+ slots (2) 10/100/1000 RJ-45 ports
Protocols	CSMA/CD
Technology	Store-and-Forward switching architecture
MAC Address	32K MAC address table
Backplane	68 Gbps
Dimensions	Width: 11.02" [280 mm] Depth: 5.28" [134 mm] Height: 1.73" [44 mm]
Power Input	100-240VAC (on the front) or 24/48VDC
Power Consumption	24 Watts (max)
Environment	Operating: -20°C to +60°C Humidity: 10% to 90% (non-condensing)
Weight	2.2 lbs. [1.0 kg]
Certifications	FCC Class A, CE Safety: UL Listed
Warranty	Lifetime

Software Features

- Management: Web Management, SNMP V1/V2c/V3, SSH, CLI
- Port Trunk: Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP) and static trunk
- Multicast: Support IGMP Snooping V1/V2/V3, IGMP Proxy, IGMP Querier, MVR, and MLD Snooping V1/V2
- Spanning Tree: Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- Rapid Ring
- VLAN: Port Based VLAN, IEEE 802.1Q tag-based, up to 4k VLAN entries, QinQ, MAC-based VLAN, Private VLAN, Voice VLANs and Management VLAN
- Quality of Service: Supports 8 hardware queues
  - Scheduling: Strict priority and WRR, Queue assignment based DSCP and class of service
  - Classification: Port based, IEEE 802.1p VLAN priority based, IPv4/IPv6 precedence/ DSCP based, DiffServ, Classification and re-marking
  - Rate Limiting: Ingress policer, Egress shaping, rate control and per port
- IPv4/IPv6 Static Routing
- Device Management System: Graphic Monitoring, Grouping, Traffic Monitoring

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: SM12DP2XA-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

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Managed Gigabit Ethernet Fiber Switch

(20) 100/1000Base-X SFP Slots + (4) 100/1000Base SFP/RJ-45 Combo Ports + (4) 1G/10GBase-X SFP+ Slots

This switch is a next generation Layer 2 managed switch with 128Gbps switching capacity. It provides up to (24) dual speed fiber slots and (4) 10Gig aggregation ports, it's an ideal switch for fiber aggregation applications.

Ordering Information

SM24DP4XA
(20) 100/1000Base-X SFP slots
+ (4) 100/1000Base SFP/RJ-45 combo ports
+ (4) 1G/10GBase-X SFP+ slots
(includes 19" rack mount brackets)

Optional Accessories (sold separately)

SFP Modules

Features

- Supports IPv4/IPv6 dual protocol stack
- Support Jumbo Frame up to 10K bytes
- Authentication – IEEE 802.1X, RADIUS, TACACS+
- Security - Supports SSH/SSL
- DHCP Relay, DHCP Option 82
- L2/L3/L4 ACLs Support MAC ACL, IP standard/extended ACL, IEEE 802.1p, Ethernet type
- LLDP (Link Layer Discovery Protocol)
- DHCP Server
- IEEE 802.3az Energy Efficiency
- IP Source Guard, Port Security
- IEEE 1588v2 PTP
- IEEE 802.3ah OAM
- IEEE 802.1ag CFM
- ITU-T Y.1731 Performance Monitoring
- ITU-T G.8031 Ethernet Linear Protection Switching (EPS)
- ITU-T G.8032 Ethernet Ring Protection Switching (ERPS)
- Ethernet Virtual Circuits (EVC) for EPL and EVPL Services

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s IEEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1X IEEE 802.3az IEEE 802.3ah IEEE 802.3ag IEEE 1588v2 ITU-T Y.1731 ITU-T G.8031 ITU-T G.8032
Connectors	(1) RJ Console Port (1) Management Port (20) 100/1000 SFP slots (4) 100/1000 SFP/RJ-45 combo ports (4) 1G/10G SFP+ slots
Protocols	CSMA/CD
Technology	Store-and-Forward switching architecture
MAC Address	32K MAC address table
Backplane	128 Gbps
Dimensions	Width: 17.4" [442 mm] Depth: 8.31" [211 mm] Height: 1.73" [44 mm]
Power Input	Single 100-240VAC Dual +24/+48 VDC or -24V/-48V VDC
Power Consumption	60 Watts (max)
Environment	Operating: -20°C to +60°C Humidity: 5% to 90% (non-condensing)
Weight	2.87 lbs. [1.3 kg]
Certifications	FCC Class A, CE Safety: UL Listed
Warranty	5 Years

Software Features

- Management: Web Management, SNMP V1/V2c/V3, Telnet, CLI
- Port Trunk: Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP) and static trunk
- Support IGMP Snooping V1/V2/V3, IGMP Proxy, GVRP, IGMP Querier, and MLD Snooping V1/V2
- Spanning Tree: Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- Rapid Ring
- VLAN: Port Based VLAN, IEEE 802.1Q tag-based, up to 4k VLAN entries, QinQ, MAC-based VLAN, Private VLAN, Voice VLANs and Management VLAN
- Quality of Service: Supports 8 egress queues per port enable differentiated management of up to 8 traffic types across the stack. Strict priority and WRR
- IPv4/IPv6 Unicast Static Routing
- Firmware Update, configure backup/ restore through TFTP & HTTP
- AC/DC Dual Power Supply
- Device Management System: Graphic Monitoring, Grouping, Traffic Monitoring

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: SM24DP4XA-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Multiservice Edge Aggregation Switch

(24) 100/1000Base-X SFP Slots + (4) 10GBase-X SFP+ Slots

The LIB-4424 Series is a multiservice edge aggregator that provides SLA-assurance and advanced MEF Compliant fault management. IEEE 802.1ag Service OAM, ITU Y.1731 Performance Monitoring and IEEE 802.3ah Link OAM.

The LIB-4424 Series supports advance features such as IPv6 and IPv4, VLANs, QoS, bandwidth allocation, ring protection, jumbo frames and numerous security features.

Features

- Twin fan design
- SNMP v1, v2c, and v3
- IPv6 and IPv4 support
- VLAN (IEEE 802.1Q) Q-in-Q (C-Tag/S-Tag)
- RMON and Syslog
- OAM Support: IEEE 802.3ah Link OAM. IEEE 802.1ag
- Service OAM and ITU-T Y.1731 Performance Monitoring
- IETF RFC 2544 and ITU-T Y.1564 Traffic Generation and Reports
- Protection: ITU-T G.8032/G.8031 IEEE RSTP, MSTP
- IEEE 1588v2
- Jumbo Frame Support (10K)
- Wire speed loopbacks
- IGMP Snooping

Applications

- MEF Compliant
- Mobile Backhaul
- Business Ethernet
- Fiber to the Premise (FTTP)
- SLA Enforcement Performance Statistics
- QoS for Differentiated Services
- Small Cell / DAS
- Cloud Services

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ab IEEE 802.3x IEEE 802.3ad IEEE 802.1p IEEE 802.1Q IEEE 802.1w IEEE 802.1s IEEE 802.1x IEEE 802.1AB IEEE 802.3ah IEEE 802.1ag IEEE 1588-2008 (v2) (ptp) RFC 2544 / ITU-T Y.1564 ITU-T Y.1731 ITU-T G.8032/G.8031
Ports	(24) 100/1000Mbps Base-X slots (empty) (4) 10Gbps SFP slots (1) RJ-45 console port (1) management port Any port can be network (NNI) or client (UNI)
Dimensions	Width: 17.4" [442 mm] Depth: 9.65” [245 mm] Height: 1.71” [43.5 mm]
Power Input	Hot Swappable Power Supplies: 100 - 240VAC; 47-63Hz auto-sensing or -18VDC to -75VDC
Power Consumption	75 Watts (max)
Environment	Operating: 0°C to +55°C Humidity: 10% to 90% (non-condensing)
Weight	3.92 lbs. [1.78 kg]
Certifications	Safety: UL Listed, CE, EN55022 Class A, IEC60950-1:2002, AS/NZS3260:1993, AS/NZS60950:2000, ACA TS001:1997; Regulatory: FCC Class A; CE Mark; CB Scheme Certified, MET Mark, EN60950-1:2006 + A1:2010 + A12:2011, EN55022:2010, EN55024:2010
Warranty	1 Year

Power Cord Included
To order the corresponding country specific power supply, add the extension from the list below to the end of the SKU;
Ex: LIB-4424-80500-NA

-NA = Country Code
-NA = North America, -LA = Latin America, -EU = Europe
-UK = United Kingdom, -SA = South Africa, -JP = Japan
-OZ = Australia, -BR = Brazil

Ordering Information

LIB-4424-80500
(24) 100/1000Base-X SFP slots (empty)
+ (4) 10G-X SFP+ slots (empty)
with (2) AC power supplies
(19" rack mount ears included)

LIB-4424-80510
(24) 100/1000Base-X SFP slots (empty)
+ (4) 10G-X SFP+ slots (empty)
with (2) DC power supplies
(19" rack mount ears included)

LIB-4424-80520
(24) 100/1000Base-X SFP slots (empty)
+ (4) 10G-X SFP+ slots (empty)
with (1) AC + (1) DC power supply
(19" rack mount ears included)

Optional Accessories (sold separately)

SFP Modules

LIB-FAN44
Removable Fan Tray

LIB-PSU44AC
AC Power Supply for LIB-4424

LIB-PSU44DC
DC Power Supply for LIB-4424

Software Features

- E-LINE (EPL and EVPL) E-LAN (EP-LAN and EVP-LAN) E-ACCESS (ACCESS EPL and EVPL) E-TREE (EP-TREE and EVP-TREE)
- UNI or NNI configuration
- TOS/Diffserv
- Quality of Service (IEEE 802.1p): 8 queues; strict priority and WRR, shaping, policing, P-bit and DSCP
- Management via CLI, Web, SSH/SSL and SNMP (V1, V2, & V3)
- Port configuration, status, statistics and monitoring
- RADIUS, TACACS+ and ACL
- Remote backup/restore configuration
- Remote firmware upgrades
- Alarms via Syslog & SNMP
- Remote loopbacks
- L2CP
- LLDP
- Diagnostic Monitoring Interface - SFF-8472
- Dying/Last Gasp
- Port Mirroring
- Link Aggregation Control Protocol (LACP)

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Smart Managed Gigabit Ethernet PoE+ Switch

(8) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Slots

This switch is a next generation smart managed switch with 20Gbps switching capacity. It provides (8) 10/100/1000Base-T copper ports with IEEE 802.3at PoE+ capability and (2) additional 100/1000 dual speed SFP slots. The embedded Device Management System (DMS) software provides the benefits of ease of use in IP surveillance, Wireless Access Point and other applications. The DMS capability built into the switch provides time-saving features enabling security integrators or network administrators to establish and document a baseline deployment, automatically discover and remotely configure attached IP-powered devices (PDs).

Ordering Information

SM8TAT2SA
(8) 10/100/1000Base-T ports
+ (2) 100/1000Base-X SFP slots
(includes 19" rack mount brackets)

Optional Accessories (sold separately)

SFP Modules

Features

- IPv6 Access Management
- Support Jumbo Frame up to 9K bytes
- Authentication – RADIUS, TACACS+
- DHCP Relay, DHCP Snooping, DHCP Server
- L2/L3/L4 ACLs Support MAC ACL, IP standard/extended ACL
- LLDP (Link Layer Discovery Protocol)
- IEEE 802.3az Energy Efficiency
- IP Source Guard, Port Security
- Syslog
- Fanless Design

PoE Features

- Compliant with IEEE 802.3at PoE+
- Compliant with IEEE 802.3af PoE
- PoE configuration
- Auto Power Reset (APR)
- Always on PoE

Device Management System (DMS)

- Graphical Monitoring – Topology view, Floor view, Map view
- Traffic Monitoring
- Troubleshooting – Network diagnostic, protection mechanism, performance and link management

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s IEEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1AB IEEE 802.3af IEEE 802.3at IEEE 802.3az
Connectors	(8) 10/100/1000 RJ-45 ports (2) 100/1000 SFP slots
Protocols	CSMA/CD
Technology	Store-and-Forward switching architecture
MAC Address	8K MAC address table
Backplane	20 Gbps
Dimensions	Width: 8.66" [220 mm] Depth: 9.53" [242 mm] Height: 1.73" [44 mm]
Power Input	100-240VAC
Power Consumption	147 Watts (full load with PoE)
Power-over-Ethernet	Max PoE budget 130 Watts 30 Watts for (4) ports simultaneously 15.4 Watts for (8) ports simultaneously
Surge Protection	6KV
Environment	Operating: 0°C to +50°C Humidity: 10% to 90% (non-condensing)
Weight	4.4 lbs. [2.0 kg]
Certifications	FCC Class A, CE Safety: IEC60950, UL Listed
Warranty	Lifetime

Software Features

- Management: Web Management, SNMP V1/V2c/V3, Telnet, CLI
- Port Trunk: Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP) and static trunk
- Multicast: Support IGMP Snooping V1/V2, MVR, MLD Snooping V1/V2
- Quality of Service: Supports 8 hardware queues. Strict priority and WRR, Ingress policer, Egress shaping and per port rate limiting
- Spanning Tree: Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- VLAN: Port Based VLAN, IEEE 802.1Q tag-based, up to 4k VLAN entries, QinQ, MAC based VLAN, Private VLAN
- Firmware Update through TFTP and HTTP

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: SM8TAT2SA-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

DC-Powered Smart Managed Gigabit Ethernet PoE+ Switch

(8) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Slots

This switch is a next generation smart managed switch with 20Gbps switching capacity. It provides (8) 10/100/1000Base-T copper ports with IEEE 802.3at PoE+ capability and (2) additional 100/1000 dual speed SFP slots. The embedded Device Management System (DMS) software provides the benefits of ease of use in IP surveillance, Wireless Access Point and other applications. The DMS capability built into the switch provides time-saving features enabling security integrators or network administrators to establish and document a baseline deployment, automatically discover and remotely configure attached IP-powered devices (PDs).

Ordering Information

SM8TAT2SA-DC
(8) 10/100/1000Base-T ports
+ (2) 100/1000Base-X SFP slots
(includes 19" rack mount brackets)
+52 to +54VDC or -52 to -54VDC

Optional Accessories (sold separately)

SFP Modules

Optional Power Supplies
(sold separately)

25104
Input: 85-264 VAC, 124-370 VDC
Output: 48 ~ 55 VDC, 5A, 240 Watts

25015
Input: 85-264 VAC, 124-370 VDC
Output: 48~55 VDC, 2.5A, 120 Watts

Features

- IPv6 Access Management
- Support Jumbo Frame up to 9K bytes
- Authentication – RADIUS, TACACS+
- DHCP Relay, DHCP Snooping, DHCP Server
- L2/L3/L4 ACLs Support MAC ACL, IP standard/extended ACL
- LLDP (Link Layer Discovery Protocol)
- IEEE 802.3az Energy Efficiency
- IP Source Guard, Port Security
- Syslog
- Fanless Design

PoE Features

- Compliant with IEEE 802.3at PoE+
- Compliant with IEEE 802.3af PoE
- PoE configuration
- Auto Power Reset (APR)

Device Management System (DMS)

- Graphical Monitoring – Topology view, Floor view, Map view
- Traffic Monitoring
- Troubleshooting – Network diagnostic, protection mechanism, performance and link management

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s IEEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1AB IEEE 802.3af IEEE 802.3at IEEE 802.3az
Connectors	(8) 10/100/1000 RJ-45 ports (2) 100/1000 SFP slots
Protocols	CSMA/CD
Technology	Store-and-Forward switching architecture
MAC Address	8K MAC address table
Backplane	20 Gbps
Dimensions	Width: 8.66" [220 mm] Depth: 9.53" [242 mm] Height: 1.73" [44 mm]
Power Input	+52 to +54VDC or -52 to -54VDC
Power Consumption	140 Watts (full load with PoE)
Power-over-Ethernet	Max PoE budget 130 Watts 30 Watts for (4) ports simultaneously 15.4 Watts for (8) ports simultaneously
Environment	Operating: 0°C to +50°C Humidity: 10% to 90% (non-condensing)
Weight	2.2 lbs. [1.0 kg]
Certifications	Safety: EN60950, UL/cUL Listed
Warranty	Lifetime

Software Features

- Management: Web Management, SNMP V1/V2c/V3, Telnet, CLI
- Port Trunk: Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP) and static trunk
- Multicast: Support IGMP Snooping V1/V2, MVR, MLD Snooping V1/V2
- Quality of Service: Supports 8 hardware queues. Strict priority and WRR, Ingress policer, Egress shaping and per port rate limiting
- Spanning Tree: Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- VLAN: Port Based VLAN, IEEE 802.1Q tag-based, up to 4k VLAN entries, QinQ, MAC based VLAN, Private VLAN
- Firmware Update through TFTP and HTTP

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Smart Managed Gigabit Ethernet PoE+ Switch

(16) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Slots

This switch is a next generation smart managed switch with 36Gbps switching capacity. It provides (16) 10/100/1000Base-T copper ports with IEEE 802.3at PoE+ capability and (2) additional 100/1000 dual speed SFP slots. The embedded Device Management System (DMS) software provides the benefits of ease of use in IP surveillance, Wireless Access Point and other applications. The DMS capability built into the switch provides time-saving features enabling security integrators or network administrators to establish and document a baseline deployment, automatically discover and remotely configure attached IP-powered devices (PDs).

Ordering Information

SM16TAT2SA
(16) 10/100/1000Base-T ports
+ (2) 100/1000Base-X SFP slots
(includes 19" rack mount brackets)

Optional Accessories (sold separately)

SFP Modules

Switches

Features

- IPv6 Access Management
- Support Jumbo Frame up to 9K bytes
- Authentication – RADIUS, TACACS+
- DHCP Relay, DHCP Snooping, DHCP Server
- L2/L3/L4 ACLs Support MAC ACL, IP standard/extended ACL
- LLDP (Link Layer Discovery Protocol)
- IEEE 802.3az Energy Efficiency
- IP Source Guard, Port Security
- Syslog

PoE Features

- Compliant with IEEE 802.3at PoE+
- Compliant with IEEE 802.3af PoE
- PoE configuration
- Auto Power Reset (APR)
- Always on PoE

Device Management System (DMS)

- Graphical Monitoring – Topology view, Floor view, Map view
- Traffic Monitoring
- Troubleshooting – Network diagnostic, protection mechanism, performance and link management

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s IEEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1AB IEEE 802.3af IEEE 802.3at IEEE 802.3az
Connectors	(16) 10/100/1000 RJ-45 ports (2) 100/1000 SFP slots
Protocols	CSMA/CD
Technology	Store-and-Forward switching architecture
MAC Address	8K MAC address table
Backplane	36 Gbps
Dimensions	Width: 17.4" [442 mm] Depth: 8.3" [211 mm] Height: 1.73" [44 mm]
Power Input	100-240VAC
Power Consumption	296 Watts (full load with PoE)
Power-over-Ethernet	Max PoE budget 250 Watts 30 Watts for (8) ports simultaneously 15.4 Watts for (16) ports simultaneously
Surge Protection	6KV
Environment	Operating: 0°C to +50°C Humidity: 10% to 90% (non-condensing)
Weight	6.6 lbs. [3.0 kg]
Certifications	FCC Class A, CE Safety: IEC60950, UL listed
Warranty	Lifetime

Software Features

- Management: Web Management, SNMP V1/V2c/V3, Telnet, CLI
- Port Trunk: Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP) and static trunk
- Multicast: Support IGMP Snooping V1/V2, MVR, MLD Snooping V1/V2
- Quality of Service: Supports 8 hardware queues. Strict priority and WRR, Ingress policer, Egress shaping and per port rate limiting
- Spanning Tree: Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- VLAN: Port Based VLAN, IEEE 802.1Q tag-based, up to 4k VLAN entries, QinQ, MAC based VLAN, Private VLAN
- Firmware Update through TFTP and HTTP

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: SM16TAT2SA-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

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SM24TAT2SA

Smart Managed Gigabit Ethernet PoE+ Switch

(24) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Slots

This switch is a next generation smart managed switch with 52Gbps switching capacity. It provides (24) 10/100/1000Base-T copper ports with IEEE 802.3at PoE+ capability and (2) additional 100/1000 dual speed SFP slots. The embedded Device Management System (DMS) software provides the benefits of ease of use in IP surveillance, Wireless Access Point and other applications. The DMS capability built into the switch provides time-saving features enabling security integrators or network administrators to establish and document a baseline deployment, automatically discover and remotely configure attached IP-powered devices (PDs).

Ordering Information

SM24TAT2SA
(24) 10/100/1000Base-T ports
+ (2) 100/1000Base-X SFP slots
(includes 19" rack mount brackets)

Optional Accessories (sold separately)

SFP Modules

Features

- IPv6 Access Management
- Support Jumbo Frame up to 9K bytes
- Authentication – RADIUS, TACACS+
- DHCP Relay, DHCP Snooping, DHCP Server
- L2/L3/L4 ACLs Support MAC ACL, IP standard/extended ACL
- LLDP (Link Layer Discovery Protocol)
- IEEE 802.3az Energy Efficiency
- IP Source Guard, Port Security
- Syslog

PoE Features

- Compliant with IEEE 802.3at PoE+
- Compliant with IEEE 802.3af PoE
- PoE configuration
- Auto Power Reset (APR)
- Always on PoE

Device Management System (DMS)

- Graphical Monitoring – Topology view, Floor view, Map view
- Traffic Monitoring
- Troubleshooting – Network diagnostic, protection mechanism, performance and link management

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s IEEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1AB IEEE 802.3af IEEE 802.3at IEEE 802.3az
Connectors	(24) 10/100/1000 RJ-45 ports (2) 100/1000 SFP slots
Protocols	CSMA/CD
Technology	Store-and-Forward switching architecture
MAC Address	8K MAC address table
Backplane	52 Gbps
Dimensions	Width: 17.4" [442 mm] Depth: 8.3" [211 mm] Height: 1.73" [44 mm]
Power Input	100-240VAC
Power Consumption	438 Watts (full load with PoE)
Power-over-Ethernet	Max PoE budget 370 Watts 30 Watts for (12) ports simultaneously 15.4 Watts for (24) ports simultaneously
Surge Protection	6KV
Environment	Operating: 0°C to +50°C Humidity: 10% to 90% (non-condensing)
Weight	6.6 lbs. [3.0 kg]
Certifications	FCC Class A, CE Safety: IEC60950, UL listed
Warranty	Lifetime

Software Features

- Management: Web Management, SNMP V1/V2c/V3, Telnet, CLI
- Port Trunk: Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP) and static trunk
- Multicast: Support IGMP Snooping V1/V2, MVR, MLD Snooping V1/V2
- Quality of Service: Supports 8 hardware queues. Strict priority and WRR, Ingress policer, Egress shaping and per port rate limiting
- Spanning Tree: Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- VLAN: Port Based VLAN, IEEE 802.1Q tag-based, up to 4k VLAN entries, QinQ, MAC based VLAN, Private VLAN
- Firmware Update through TFTP and HTTP

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: SM24TAT2SA-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Managed Gigabit Ethernet PoE++ Switch

(24) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP/RJ-45 Combo Ports

This switch is a high performance Layer 2 managed switch with 52 Gbps switching capacity. It provides (24) 10/100/1000 copper ports with IEEE 802.3bt PoE++ capability and (2) additional 100/1000 dual speed SFP/RJ-45 combo ports. The SM24TBT2DPA complies with the latest IEEE 802.3bt PoE++ standard and supplies up to 90 Watts per port. It can provide up to 1640 Watts PoE output with the dual hot-swappable power supplies equipped.

Features

- Hot-swappable dual power supply modules
- Support IPv4/IPv6 dual protocol stack
- Support Jumbo Frame up to 9K bytes
- Authentication – RADIUS, TACACS+
- Security - Support SSH v1/SSH v2/ SSL
- Port based or tagged (IEEE 802.1Q) VLAN, MAC based, Management VLAN and Private VLAN Edge
- DHCP Relay, DHCP Server
- L2/L3/L4 ACLs Support MAC ACL, IP standard/extended ACL
- LLDP (Link Layer Discovery Protocol)
- IEEE 802.3az Energy Efficiency
- IP Source Guard, Port Security

PoE Features

- Compliant with IEEE 802.3bt PoE++
- Compliant with IEEE 802.3at PoE+
- Compliant with IEEE 802.3af PoE
- IEEE 802.1AB LLDP-MED Configuration
- PoE Configuration
- PoE Scheduling
- Auto Power Reset
- DHCP per Port
- Soft Boot
- Always on PoE

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s IEEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1AB IEEE 802.3af IEEE 802.3at IEEE 802.3bt IEEE 802.3az
Connectors	(1) RJ console port (24) 10/100/1000 RJ-45 ports (2) 100/1000 SFP/RJ-45 combo ports
Protocols	CSMA/CD
Technology	Store-and-Forward switching architecture
MAC Address	8K MAC address table
Backplane	52 Gbps
Dimensions	Width: 17.4” [442 mm] Depth: 11.8” [300 mm] Height: 1.73” [44 mm]
Power Input	100-240VAC Dual Hot Swappable Power Supplies; Power Redundancy, Failover
Power Consumption	Maximum Power Consumption without PoE 79 Watts with dual AC power modules 52 Watts with single AC power module
Power-over-Ethernet	Max 90 Watts output per port Max PoE Budget 1640 Watts with dual power supply 60 Watts for (24) ports simultaneously 90 Watts for (18) ports simultaneously Max PoE budget 820 Watts with single power supply 30 Watts for (24) ports simultaneously 60 Watts for (13) ports simultaneously 90 Watts for (9) ports simultaneously
Environment	Operating: 0°C to +40°C Humidity: 10% to 90% (non-condensing)
Weight	10.47 lbs. [4.75 kg]
Certifications	FCC Class A, CE Safety: IEC60950-1, UL Listed
Compliant* (Designed to Meet)	UL 2043, UL 2108, Plenum Rated
Warranty	Lifetime

*Please **contact sales** with certification needs

Ordering Information

SM24TBT2DPA
(24) 10/100/1000Base-T ports
+ (2) 100/1000Base-X SFP/RJ-45 combo ports
(includes (1) AC power supply and 19” rack mount brackets)

Optional Accessories (sold separately)

SFP Modules

Power Supplies (sold separately)

PS-AC-920
Secondary AC Power Supply (920 Watts)
Warranty: 5 Years

Software Features

- Management: Web Management, SNMP V1/V2c/V3, Telnet, CLI
- Port Trunk: Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP) and static trunk
- IGMP: Support IGMP Snooping V1/ V2/V3, GVRP, IGMP Proxy, and IGMP Querier
- Quality of Service: Supports 8 hardware queues. Strict priority and WRR
- Spanning Tree: Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- Rapid Ring
- VLAN: Port Based VLAN, IEEE 802.1Q tag-based, up to 4k VLAN entries, QinQ, MAC-based VLAN, Private VLAN, Voice VLANs and Management VLAN
- Firmware Update, configure backup/ restore through TFTP and HTTP

Device Management System (DMS)

- Graphical Monitoring – Topology view, Floor view, Map view
- Traffic Monitoring
- Troubleshooting – Network diagnostic, protection mechanism, performance and link management

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: SM24TBT2DPA-NA

-NA = Country Code
-NA = North America, -LA = Latin America
-EU = Europe, -UK = United Kingdom
-SA = South Africa, -JP = Japan
-OZ = Australia, -BR = Brazil

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Managed Gigabit Ethernet PoE+ Switch

(24) 10/100/1000Base-T Ports + (4) 1G/10GBase-X SFP+ Ports

This switch is a high performance managed PoE+ switch with (24) 10/100/1000 copper ports and (4) dual speed 1G/10G SFP+ slots.

Ordering Information

SM24TAT4XB
(24) 10/100/1000Base-T ports
+ (4) 1G/10GBase-X SFP+ slots (empty)

Optional Accessories (sold separately)

SFP and SFP+ Modules

Features

- Supports Jumbo Frame up to 10240 bytes
- Authentication – RADIUS IEEE 802.1X, TACACS+
- Security - Support SSH/SSL
- Port based or tagged (IEEE 802.1Q) VLAN, MAC based VLAN, Management VLAN and Private VLAN Edge
- DHCP Server, Client, Relay
- IEEE 1588v2 PTP (TC)
- ACLs Support for up to 512 entries, drop or rate limitation based on source and destination MAC, VLAN ID or IP address, protocol, port, DSCP/IP precedence, TCP/IP source and destination ports, IEEE 802.1p priority, Ethernet Type / IGMP packets, TCP flag
- LLDP (Link Layer Discovery Protocol)
- IEEE 802.3az Energy Efficiency

PoE Features

- Compliant with IEEE 802.3at PoE+
- Compliant with IEEE 802.3af PoE
- IEEE 802.1AB LLDP-MED Configuration
- Auto Power Reset
- DHCP per port
- Always on PoE

Device Management System (DMS)

- Graphical Monitoring – Topology view, Floor view, Map view
- Traffic Monitoring
- Troubleshooting – Network diagnostic, protection mechanism, performance and link management

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s IEEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1AB IEEE 802.3af IEEE 802.3at IEEE 802.3az IEEE 802.1X
Connectors	(1) RS-232 Serial port (24) 10/100/1000 RJ-45 ports (4) 1G/10G SFP+ slots
Protocols	CSMA/CD
Technology	Store-and-forward switching architecture
MAC Address	32K MAC address table
Backplane	128 Gbps
Dimensions	Width: 17.4" [442 mm] Depth: 8.31" [211 mm] Height: 1.73" [44 mm]
Power Consumption	44 Watts (max without PoE) 450 Watts (full load with PoE)
Power Input	Internal Power: 100 - 240VAC
Power-over-Ethernet	Max PoE budget 370 Watts 30 Watts for (12) ports simultaneously 15.4 Watts for (24) ports simultaneously
Environment	Operating: 0°C to 50°C Humidity: 5% to 90% (non-condensing)
Weight	8.38 lbs. [3.8 kg]
Certifications	Safety: UL Listed Emissions: FCC Class A, CE Mark
Warranty	Lifetime

Features (Continued)

- Web Management, SNMP V1/V2c/V3, Telnet, CLI
- Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP). Supports up to 26 groups with (4) ports per group.
- Supports IGMP Snooping V1/V2/V3, up to 1024 multicast groups, GVRP, IGMP Proxy, IGMP Querier
- MLD snooping V1/V2: deliver IPv6 multicast packages only to the required receivers
- Supports 8 hardware queues, Strict priority and WRR. Queue assignment based on DSCP and IEEE 802.1p CoS; IPv4/IPv6 precedence/ Type of Service / DiffServ / classification and remarking ACLs; rate limiting, ingress policer, egress shaping and rate control
- IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- Firmware Update, configure backup/ restore through web GUI and TFTP
- Supports IPv4/IPv6 Layer 3 static routing
- ITU-T G.8031, G8032, loop detection

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: SM24TAT4XB-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

Managed Gigabit Ethernet PoE+ Switch

(48) 10/100/1000Base-T Ports + (4) 1G/10GBase-X SFP+ Ports

This switch is a high performance managed PoE+ switch with (48) 10/100/1000 copper ports and (4) dual speed 1G/10G SFP+ slots.

Features

- Supports Jumbo Frame up to 10240 bytes
- Authentication – RADIUS IEEE 802.1X, TACACS+
- Security - Support SSH/SSL
- Port security: MAC addresses to ports
- Port based or tagged (IEEE 802.1Q) VLAN, MAC based VLAN, Management VLAN and Private VLAN Edge
- DHCP Server, Client, Relay
- IEEE 1588v2 PTP (TC)
- ACLs Support for up to 512 entries, drop or rate limitation based on source and destination MAC, VLAN ID or IP address, protocol, port, DSCP/IP precedence, TCP/IP source and destination ports, IEEE 802.1p priority, Ethernet Type / IGMP packets, TCP flag
- LLDP (Link Layer Discovery Protocol)
- IEEE 802.3az Energy Efficiency

PoE Features

- Compliant with IEEE 802.3at PoE+
- Compliant with IEEE 802.3af PoE
- IEEE 802.1AB LLDP-MED Configuration
- Auto Power Reset
- DHCP per port
- Always on PoE

Device Management System (DMS)

- Graphical Monitoring – Topology view, Floor view, Map view
- Traffic Monitoring
- Troubleshooting – Network diagnostic, protection mechanism, performance and link management

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s EEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1AB IEEE 802.3af IEEE 802.3at IEEE 802.3az IEEE 802.1X
Connectors	(1) RS-232 Serial port (48) 10/100/1000 RJ-45 ports (4) 1G/10G SFP+ slots
Protocols	CSMA/CD
Technology	Store-and-forward switching architecture
MAC Address	32K MAC address table
Backplane	176 Gbps
Dimensions	Width: 17.4" [442 mm] Depth: 14.76" [375 mm] Height: 1.73" [44 mm]
Power Input	Internal Power: 100 - 240VAC Dual hot-swappable power supplies Redundant mode, burst mode
Power-over-Ethernet	Single power supply: Max PoE budget 820 Watts 30 Watts for (27) ports simultaneously 15.4 Watts for (48) ports simultaneously Dual power supply: Max PoE budget 1640 Watts 30 Watts for (48) ports simultaneously
Environment	Operating: 0°C to 50°C Humidity: 5% to 90% (non-condensing)
Weight	8.38 lbs. [3.8 kg]
Certifications	Safety: UL Listed Emissions: FCC Class A, CE Mark
Warranty	Lifetime

Ordering Information

SM48TAT4XA-RP
(48) 10/100/1000Base-T ports
+ (4) 1G/10GBase-X SFP+ slots (empty)
(includes (1) AC power supply and 19" rack mount brackets)

Optional Accessories (sold separately)

SFP and SFP+ Modules

Power Supply (sold separately)

PS-AC-920
920 Watts Secondary AC Power Supply
(5 Year Warranty)

Features (Continued)

- Web Management, SNMP V1/V2c/V3, Telnet, CLI
- Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP). Supports up to 26 groups with up to (16) ports per group.
- Supports IGMP Snooping V1/V2/V3, up to 1024 multicast groups, GVRP, IGMP Proxy, IGMP Querier
- MLD snooping V1/V2: deliver IPv6 multicast packages only to the required receivers
- Supports 8 hardware queues, Strict priority and WRR. Queue assignment based on DSCP and IEEE 802.1p CoS; IPv4/IPv6 precedence/ Type of Service / DiffServ / classification and remarking ACLs; rate limiting, ingress policer, egress shaping and rate control
- IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- Firmware Update, configure backup/ restore through web GUI and TFTP
- Supports IPv4/IPv6 Layer 3 static routing
- ITU-T G.8031, G8032, loop detection

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: SM48TAT4XA-RP-NA

-NA = Country Code
-NA = North America
-LA = Latin America
-EU = Europe
-UK = United Kingdom
-SA = South Africa
-JP = Japan
-OZ = Australia
-BR = Brazil

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Wall Mount Accessories & Rack Mount Assembly

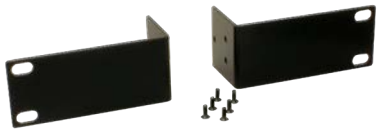
The Transition Networks portfolio of switches have the power and design to operate in multiple environments; as a desktop, workgroup or departmental switch.

In order to meet the demands of various operating environments, these products have been designed to accommodate switch mounting accessories to allow for wall or rack mounting of the devices.

Features

- Flexibility in design and deployment
- Securely fasten to wall or desk
- 19” rack mount options
- Lifetime Warranty

RMSM8-01



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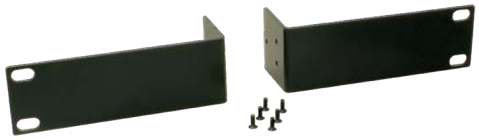
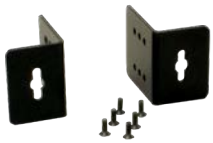
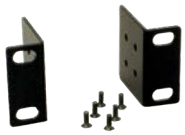


BRSM8-01



BRSM24-01



Ordering Information

RMSM8-01
19" Rack Mount Bracket for SM10T2DPA

RMSM4-01
19" Rack Mount Bracket for SM4T4DPA

BRSM8-01
Wall Mount Bracket for SM10T2DPA, SM4T4DPA

BRSM24-01
Wall Mount Bracket for SM24TAT4XB

WMBH-01
Wall Mount Bracket for SISPM1040-384-LRT-C, SISPM1040-362-LRT, SISPM1040-582-LRT

SISTM1040-262D-LRT-B

Managed Hardened Fast Ethernet Switch

(16) 10/100Base-TX Ports + (2) 10/100/1000Base-X SFP/RJ-45 Combo Ports

The SISTM1040-262D-LRT-B switch is a (16) port managed hardened switch with (2) copper ports or (2) dual speed SFP slots supporting Fast Ethernet to Gigabit Ethernet speeds. The (2) SFP slots provide the ultimate flexibility by allowing SFP fiber connections at different speeds and at a variety of communication distances. The ports can also be used in a redundant ring for maximum network reliability

Transition Networks' managed hardened switches are devices designed to reliably operate in harsh environments such as those found on factory floors, outdoor enclosures or other hazardous environments.

Ordering Information

SISTM1040-262D-LRT-B
(16) 10/100Base-TX (RJ-45)
[100 m/328 ft.] ports
+ (2) 10/100/1000Base-T (RJ-45)
or (2) 100/1000Base-X SFP combo slots

Optional Accessories (sold separately)

SFP Modules

OCA-P181610
18x16x10" Polycarbonate Enclosure

External AC/DC Power Supply (sold separately)

25165
Universal AC/DC Input DIN Rail Mountable
+12 VDC Power Supply

SPS-UA12DHT
Input: 90 ~ 264 VAC
Output: 12 VDC, 1.3A, 18 Watts
0oC to +70oC operating temperature

Features

- Auto-Negotiation
- Auto-MDI/MDIX
- Combo SFP ports support 100/1000Base-X SFPs
- Extended Operating Temperature (-40oC to 70oC)
- Dry Contact Relay Alarm Output
- Dual, Redundant, Auto-Sensing 12-48 VDC Power Inputs
- Overload Current Protection
- DIN Rail Mounting and Wall Mount Brackets Included
- PTP- Precision Timing Protocol
- RMON

Specifications

Standards	IEEE 802.3 IEEE 802.3ab IEEE 802.3u IEEE 802.1X IEEE 802.3ad IEEE 802.1d IEEE 802.1p IEEE 802.1Q IEEE 802.3z IEEE 802.3x IEEE 802.1W IEEE 802.1S IEEE 802.1AB
Status LEDs	PWR 1 (Power): ON = primary power connected PWR 2 (Power): ON = backup power connected FAULT: ON = power input failure on PWR1 or PWR2 LNK/ACT: ON = Link; FLASHING = data transmitting FDX/COL: ON = Full-duplex mode; FLASHING = collisions occurring RM: Ring Master
Dimensions	Width: 3.8" [96.4 mm] Depth: 4.27" [108.5 mm] Height: 6.06" [154 mm]
Power Consumption	12 Watts
Power Input	12 to 48 VDC; redundant inputs with over current protection
Ingress Protection	IP30
Environment	Operating: -40°C to +70°C Storage: -40°C to +85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	3.85 lbs. [1.75 kg]
Certifications	Safety: UL EN60950-1, Class 1/Div 2, Groups A, B, C, D, ATEX, FCC Class A, CE Mark, CE EN61000-4-2, CE EN61000-4-3, CE EN-61000-4-4, CE EN61000-4-5, CE EN61000-4-6, CE EN61000-4-8, CE EN61000-6-11, Environmental: IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration)
Warranty	Lifetime

Management Features

- Port Based VLAN (4096)
- IEEE 802.1Q Tag VLAN
- GVRP
- Port Trunk with LACP QoS (Quality of Service)
- IEEE 802.1p Class of Service, Per port provides priority queues
- Port Based, Tag Based and Type of Service Priority
- Port Security: MAC address entries/filter
  - IP Security: IP address security management to prevent unauthorized intruder
  - Login Security: IEEE 802.1X/RADIUS Authentication IGMP Query mode for Multi-Media Application
  - IGMP Multicast groups 1024
  - Support 0-ring and multi-ring, STP, RSTP, MSTP
  - Provide redundant backup feature and recovery time below 20ms.
- SNMP v1 v2c, v3/Web/Telnet/CLI
- DHCP Client/DHCP Server
- TFTP Firmware Upgrade
- TFTP Configuration Backup/Restore
- IPv4/IPv6 dual-stack

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Unmanaged Hardened Gigabit Ethernet Switch

(4) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Slots

This switch is an unmanaged full Gigabit Ethernet hardened switch that has (4) 10/100/1000Base-T ports with (2) 100/1000 dual speed SFP slots. The SISTG1040-242-LRT can be used at the edge of a hardened network to provide Gigabit Ethernet connections in hazardous locations. The two fiber uplink ports can also be used in a daisy chain for maximum network reliability. It has redundant input power connections to ensure safe reliable operation in temperatures between -40°C and +75°C. Transition Networks' hardened switches are certified to operate reliably in harsh environments such as those found on factory floors, outdoor enclosures or other hazardous environments.

Features

- Support Jumbo Frame up to 9K bytes
- Layer 2 wire-speed switching engine
- Ruggedized metal closure
- IEEE 802.3az Energy Efficient Ethernet
- Fan-less design
- Wide operating temperature range (-40°C to +75°C)
- Dual Power input
- Din Rail and Wall Mount options

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.1p IEEE 802.3az
Protocols	CSMA/CD
Technology	Store-and-forward switching architecture
Switching Capacity	12 Gbps
Connectors	(4) 10/100/1000Base-T RJ-45 ports (2) 100/1000Base-X SFP slots
MAC Address	4K MAC address table
Status LEDs	System, Power1, Power2, Port Status
Dimensions	Width: 1.7" [44 mm] Depth: 5.1" [130 mm] Height: 5.3" [135 mm]
Reset button	Reset the switch
Power Input	12 - 48 VDC; Redundant input; reverse power protection
Power Consumption	4.4 Watts
Ingress Protection	IP30
Environment	Operating: -40°C to +75°C Humidity: 5% to 95% (non-condensing)
Weight	0.79 lbs. [0.36 kg]
Certifications	UL Class 1 / Div 2; EMI: CE, FCC Part 15; Safety: EN60950
Warranty	5 Years

Ordering Information

SISTG1040-242-LRT
(4) 10/100/1000Base-T [100 m/328 ft.] ports + (2) 100/1000Base-X SFP slots (Din Rail Bracket included)

Optional Accessories (sold separately)

SFP Modules

OCA-P181610
18x16x10" Polycarbonate Enclosure

Industrial Power Supplies (sold separately)

25135
Input: 85 -264VAC, 120-370VDC
Output: 24VDC, 10Watts, -20°C to +70°C

25130
Input: 88 -264VAC, 120-370VDC
Output: 48VDC, 39.8Watts, -20°C to +70°C

Mounting Brackets (sold separately)

WMBH-01
Wall Mount Bracket

DRBH-01
Din Rail Bracket

Unmanaged Hardened Gigabit Ethernet Switch

(8) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Slots

This switch is an unmanaged full Gigabit Ethernet hardened switch that has (8) 10/100/1000Base-T ports with (2) 100/1000 dual speed SFP slots. The SISTG1040-282-LRT can be used at the edge of a hardened network to provide Gigabit Ethernet connections in hazardous locations. The two fiber uplink ports can also be used in a daisy chain for maximum network reliability. It has redundant input power connections to ensure safe reliable operation in temperatures between -40°C and +75°C. Transition Networks' hardened switches are certified to operate reliably in harsh environments such as those found on factory floors, outdoor enclosures or other hazardous environments.

Features

- Support Jumbo Frame up to 9K bytes
- Layer 2 wire-speed switching engine
- Ruggedized metal closure
- IEEE 802.3az Energy Efficient Ethernet
- Fan-less design
- Wide operating temperature range (-40°C to +75°C)
- Dual Power input
- Din Rail and Wall Mount options

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.1p IEEE 802.3az
Protocols	CSMA/CD
Technology	Store-and-forward switching architecture
Switching Capacity	20 Gbps
Connectors	(8) 10/100/1000Base-T RJ-45 ports (2) 100/1000Base-X SFP slots
MAC Address	4K MAC address table
Status LEDs	System, Power1, Power2, Port Status
Dimensions	Width: 1.7" [44 mm] Depth: 5.1" [130 mm] Height: 5.3" [135 mm]
Reset button	Reset the switch
Power Input	12 - 48 VDC; Redundant input; reverse power protection
Power Consumption	5.8 Watts
Ingress Protection	IP30
Environment	Operating: -40°C to +75°C Humidity: 5% to 95% (non-condensing)
Weight	0.86 lbs. [0.39 kg]
Compliance	UL Class 1 / Div 2; EMI: CE, FCC Part 15; Safety: EN60950
Warranty	5 Years

Ordering Information

SISTG1040-282-LRT
(8) 10/100/1000Base-T [100 m/328 ft.] ports + (2) 100/1000Base-X SFP slots (Din Rail Bracket included)

Optional Accessories (sold separately)

SFP Modules

OCA-P181610
18x16x10" Polycarbonate Enclosure

Industrial Power Supplies (sold separately)

25135
Input: 85 -264VAC, 120-370VDC
Output: 24VDC, 10Watts, -20°C to +70°C

25130
Input: 88 -264VAC, 120-370VDC
Output: 48VDC, 39.8Watts, -20°C to +70°C

Mounting Brackets (sold separately)

WMBH-01
Wall Mount Bracket

DRBH-01
Din Rail Bracket

Managed Hardened Gigabit Ethernet Switch

(8) 10/100/1000Base-T Ports + (4) 100/1000Base-X SFP Slots

The SISGM1040-284-LRT is a managed switch suitable for connecting devices in hardened environments. The switch has 24Gbps switching capacity. The switch also includes the embedded Device Management System (DMS) software that provides the advanced tools necessary for total management of all IP addressable devices. The unique DMS provides security integrators with lower overall cost, less downtime and easier management of the entire network.

Transition Networks' hardened switches are certified to operate reliably in harsh environments such as those found on factory floors, outdoor enclosures or other challenging environments.

Features

- Store-and-Forward Architecture with 24 Gbps Switching Bandwidth
- IPv4/IPv6 dual protocols
- Supports Jumbo frames up to 9K Bytes
- Rapid Ring for fast recovery
- Radius, TACACS+, User Authentication
- Supports LLDP Protocol
- IEEE 1588 v2 PTP
- Port Mirroring
- Syslog
- Static routing
- Port Security, IP Source Guard
- Web / SNMP v1,v2c,v3 / SSH / CLI management
- DHCP Relay, DHCP Snooping, DHCP Server
- Port based network access control (IEEE 802.1X)
- L2/L3/L4 ACLs Support MAC, VLAN ID or IP address, protocol, per port
- Port Trunk: Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP) and static trunk
- Multicast: Support IGMP Snooping V1/V2/V3, MVR, MLD Snooping V1/V2
- Quality of Service: Supports 8 hardware queues. Strict priority and WRR, Ingress policer, Egress shaping and per port rate control

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.3az IEEE 802.3ad IEEE 802.1p IEEE 802.1Q IEEE 802.1w IEEE 802.1s IEEE 802.1AB IEEE 802.1ad IEEE 802.3ah IEEE 802.1ag IEEE 802.1D IEEE 802.1X IEEE 1588 v2 ITU-T Y.1731 ITU-T G.8031 ITU-T G.8032 IEC62439-2
MAC Address	8K
Backplane	24Gbps
Protocol Technology	CSMA/CD Store-and-Forward Switching Architecture
Connectors	(8) 100/1000 RJ-45 (4) 100/1000 SFP (1) Console RJ-45
Dimensions	Width: 2.4" [62 mm] Depth: 5.3" [135 mm] Height: 5.4" [130 mm]
Power Input	12 - 48VDC; dual inputs terminal block
Ingress Protection	IP30
Environment	Operating: -40°C to +75°C (DC Input)
Weight	2.2 lbs. [1 kg]
Certifications	FCC Class A, CE, UL Listed
Compliant* (Designed to Meet)	IEC61850-3, IEEE1613, UL C1/D2, NEMA TS-2
Warranty	5 Years

*Please **contact sales** with certification needs

Ordering Information

SISGM1040-284-LRT
(8) 10/100/1000Base-T [100 m/328 ft.] ports + (4) 100/1000Base-X SFP slots (Din Rail Bracket included)

Optional Accessories (sold separately)

SFP Modules

EDCA-DIO-01
Enclosure Door Contact Alarm

OCA-P181610
18x16x10" Polycarbonate Enclosure

Industrial Power Supplies (sold separately)

25165
12VDC, 24 Watts output

25130
48VDC, 40 Watts output

SPS-UA12DHT
Input: 90-264 VAC, 12VDC, 18 Watts output

PS-DC-DUAL Series
Input: 100-240 VAC, Dual 56VDC + 12 or 24V output

Mounting Brackets (sold separately)

WMBH-01
Wall Mount Bracket

DRBH-01
Din Rail Bracket

Features Continued

- Spanning Tree: Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1d STP Compliant
- VLAN: Port Based VLAN, IEEE 802.1Q tag-based, up to 4k VLAN entries, Q-in-Q, MAC-based VLAN, Management VLAN, Voice VLAN, Private VLAN
- Firmware Update through TFTP and HTTP/HTTPs
- Media Redundancy Protocol (MRP)

Device Management System (DMS)

- Graphical Monitoring – Topology view, Floor view, Map view
- Traffic Monitoring
- Troubleshooting – Network diagnostic, protection mechanism, performance and link management

Unmanaged Hardened Gigabit Ethernet PoE+ Switch

(4) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Slots

This switch is an unmanaged full Gigabit Ethernet hardened PoE+ switch that complies with IEEE 802.3at and IEEE 802.3af. The switch has (4) 10/100/1000Base-T PoE+ ports with (2) 100/1000 dual speed SFP slots. It can deliver up to 30 Watts on each PoE+ port simultaneously. The SISTP1040-342-LRT can be used at the edge of a hardened network to provide connections for PoE devices in hazardous locations. The two fiber uplink ports can also be used in a daisy chain for maximum network reliability. It has redundant input power connections to ensure safe reliable operation in temperatures between -40°C and +75°C. Transition Networks' hardened switches are certified to operate reliably in harsh environments such as those found on factory floors, outdoor enclosures or other hazardous environments.

Features

- Support Jumbo Frame up to 9K bytes
- Layer 2 wire-speed switching engine
- Ruggedized metal closure
- IEEE 802.3az Energy Efficient Ethernet
- Fan-less design
- Wide operating temperature range (-40°C to +75°C)
- Dual Power input
- Din Rail and Wall Mount options

PoE Features

- IEEE 802.3at compliant
- IEEE 802.3af compliant

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.1p IEEE 802.3az IEEE 802.3af IEEE 802.3at
Protocols	CSMA/CD
Technology	Store-and-forward switching architecture
Switching Capacity	12 Gbps
Connectors	(4) 10/100/1000Base-T RJ-45 ports (2) 100/1000Base-X SFP slots
MAC Address	4K MAC address table
Status LEDs	System, Power1, Power2, Port Status
Dimensions	Width: 1.7" [44 mm] Depth: 5.1" [130 mm] Height: 5.3" [135 mm]
Reset button	Reset the switch
Power Input	48-57 VDC; Redundant input; reverse power protection
Power Consumption	4.4 Watts (without PoE)
Power-over-Ethernet	Total PoE Budget: 120 Watts 30 Watts on all 4 ports simultaneously
Ingress Protection	IP30
Environment	Operating: -40°C to +75°C Humidity: 5% to 95% (non-condensing)
Weight	0.95 lbs. [0.43 kg]
Certifications	UL Class 1 / Div 2; EMI: CE, FCC Part 15; Safety: EN60950
Warranty	5 Years

Ordering Information

SISTP1040-342-LRT
(4) 10/100/1000Base-T PoE+ [100 m/328 ft.] ports
+ (2) 100/1000Base-X SFP slots
(Din Rail Bracket included)

Optional Accessories (sold separately)

SFP Modules

OCA-P181610
18x16x10" Polycarbonate Enclosure

Industrial Power Supplies (sold separately)

25105
Input: 85-264 VAC, 124-370 VDC
Output: 48~55 VDC, 2.5A, 120 Watts

Mounting Brackets (sold separately)

WMBH-01
Wall Mount Bracket

DRBH-01
Din Rail Bracket

Unmanaged Hardened Gigabit Ethernet PoE+ Switch

(8) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Slots

This switch is an unmanaged full Gigabit Ethernet hardened PoE+ switch that complies with IEEE 802.3at and IEEE 802.3af. The switch has (8) 10/100/1000Base-T PoE+ ports with (2) 100/1000 dual speed SFP slots. It can deliver up to 30 Watts on each PoE+ port simultaneously. The SISTP1040-382-LRT can be used at the edge of a hardened network to provide connections for PoE devices in hazardous locations. The two fiber uplink ports can also be used in a daisy chain for maximum network reliability. It has redundant input power connections to ensure safe reliable operation in temperatures between -40°C and +75°C. Transition Networks' hardened switches are certified to operate reliably in harsh environments such as those found on factory floors, outdoor enclosures or other hazardous environments.

Features

- Support Jumbo Frame up to 9K bytes
- Layer 2 wire-speed switching engine
- Ruggedized metal closure
- IEEE 802.3az Energy Efficient Ethernet
- Fan-less design
- Wide operating temperature range (-40°C to +75°C)
- Dual Power input
- Din Rail and Wall Mount options

PoE Features

- IEEE 802.3at compliant
- IEEE 802.3af compliant

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.1p IEEE 802.3az IEEE 802.3af IEEE 802.3at
Protocols	CSMA/CD
Technology	Store-and-forward switching architecture
Switching Capacity	20 Gbps
Connectors	(8) 10/100/1000Base-T RJ-45 ports (2) 100/1000Base-X SFP slots
MAC Address	4K MAC address table
Status LEDs	System, Power1, Power2, Port Status
Dimensions	Width: 1.7" [44 mm] Depth: 5.1" [130 mm] Height: 5.3" [135 mm]
Reset button	Reset the switch
Power Input	48-57 VDC; Redundant input; reverse power protection
Power-over-Ethernet	Total PoE Budget: 240 Watts 30 Watts on all 8 ports simultaneously
Ingress Protection	IP30
Environment	Operating: -40°C to +75°C Humidity: 5% to 95% (non-condensing)
Weight	1.01 lbs. [0.46 kg]
Certifications	UL Class 1 / Div 2; EMI: CE, FCC Part 15; Safety: EN60950
Warranty	5 Years

Ordering Information

SISTP1040-382-LRT
(8) 10/100/1000Base-T PoE+ [100 m/328 ft.] ports
+ (2) 100/1000Base-X SFP slots
(Din Rail Bracket included)

Optional Accessories (sold separately)

SFP Modules

OCA-P181610
18x16x10" Polycarbonate Enclosure

Industrial Power Supplies (sold separately)

25104
Input: 85-264 VAC, 124-370 VDC
Output: 48~55 VDC, 5.0A, 240 Watts

25105
Input: 85-264 VAC, 124-370 VDC
Output: 48~55 VDC, 2.5A, 120 Watts

Mounting Brackets (sold separately)

WMBH-01
Wall Mount Bracket

DRBH-01
Din Rail Bracket

Unmanaged Hardened Gigabit Ethernet PoE+ Switch with Low Voltage Input

(8) 10/100/1000Base-T Ports + (2) 100/1000Base-X SFP Slots

This switch is an unmanaged full Gigabit Ethernet hardened PoE+ switch that complies with IEEE 802.3at and IEEE 802.3af. The switch has (8) 10/100/1000Base-T PoE+ ports with (2) 100/1000 dual speed SFP slots. In many fields such as Vehicle, Factory or Solar systems, there are no standard power input requirements of 52 to 57 volts for PoE devices. The SISTP1040-382B-LRT uses booster technology to allow the user to deploy the PoE switches in the power input range of 12 to 24 volts. It can still deliver up to 30 Watts on each PoE+ port. The two fiber uplink ports can also be used in a daisy chain for maximum network reliability. It has redundant input power connections to ensure safe reliable operation in temperatures between -40°C and +70°C. Transition Networks' hardened switches are certified to operate reliably in harsh environments such as those found on factory floors, outdoor enclosures or other hazardous environments.

Features

- Support Jumbo Frame up to 9K bytes
- Layer 2 wire-speed switching engine
- Ruggedized metal closure
- IEEE 802.3az Energy Efficient Ethernet
- Fan-less design
- Wide operating temperature range (-40°C to +70°C)
- Dual Power input
- Din Rail and Wall Mount options

PoE Features

- IEEE 802.3at compliant
- IEEE 802.3af compliant

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.1p IEEE 802.3az IEEE 802.3af IEEE 802.3at
Protocols	CSMA/CD
Technology	Store-and-forward switching architecture
Switching Capacity	20 Gbps
Connectors	(8) 10/100/1000Base-T RJ-45 ports (2) 100/1000Base-X SFP slots
MAC Address	4K MAC address table
Status LEDs	System, Power1, Power2, Port Status
Dimensions	Width: 1.7" [44 mm] Depth: 5.1" [130 mm] Height: 5.3" [135 mm]
Reset button	Reset the switch
Power Input	12 / 24VDC; Redundant input; reverse power protection
Power-over-Ethernet	24VDC Input: Total PoE Budget: 120 Watts 30 Watts output on 4 ports 15 Watts output on all 8 ports 12VDC Input: Total PoE Budget: 60 Watts 30 Watts output on 2 ports 15 Watts output on 4 ports
Ingress Protection	IP30
Environment	Operating: -40°C to +70°C Humidity: 5% to 95% (non-condensing)
Weight	1.01 lbs. [0.46 kg]
Certifications	UL Listed; EMI: CE, FCC Part 15; Safety: EN60950
Compliant* (Designed to Meet)	Class 1 Div 2
Warranty	5 Years

*Please **contact sales** with certification needs

Ordering Information

SISTP1040-382B-LRT
(8) 10/100/1000Base-T PoE+ [100 m/328 ft.] ports
+ (2) 100/1000Base-X SFP slots
(Din Rail Bracket included)

Optional Accessories (sold separately)

SFP Modules

OCA-P181610
18x16x10" Polycarbonate Enclosure

Industrial Power Supplies (sold separately)

25079
Input: 85-152 VAC, 176 – 264VAC, 248-370VDC
Output: 24 - 28 VDC, 5.0A, 120 Watts

Mounting Brackets (sold separately)

WMBH-01
Wall Mount Bracket

DRBH-01
Din Rail Bracket

Self-Enclosed Managed Hardened Gigabit Ethernet PoE++ Switch

(4) 10/100/1000Base-T PoE++ Ports + (1) 10/100/1000Base-T or 100/1000Base-X SFP/RJ-45 Combo Port


Mobile Device Not Included

Transition Networks' SESPM1040-541-LT-xx Switch is a Layer 2 managed switch with (4) 10/100/1000Base-T IEEE 802.3bt compliant PoE++ ports and (1) combination 10/100/1000Base-T RJ-45 or 100/1000Base-X SFP port (additional optional ports available), that is ideal for use in security and surveillance, PoE lighting, digital signage and many other applications. It is self-enclosed in an outdoor NEMA 4X/IP66 rated enclosure with 6KV surge protection on the AC line. Additional fuse protection on the PoE ports and included data port eliminates the need for external circuit cross protection between the attached powered device and the switch. It can be mounted on a wall or side of a building, or optional brackets are available for mounting on a pole. The switch is available in multiple configurations: as either an AC- or DC-powered power source (PSE) providing ≤90 Watts per port (not to exceed 180 Watts total on the AC-powered unit or 240 Watts total on the DC-powered unit), or as a PoE-powered device (PD) which is also a PSE providing up to 80 Watts of total PoE power. The PD version requires PoE power from an IEEE 802.3bt Type 4 Class 8 compliant PSE, or it can receive power over copper cable running parallel to a fiber optic cable for data (i.e. composite cable). The PD also includes a 12V Aux port which can be used to provide auxiliary power to a PC, lighting or other accessories. A second combo 10/10/1000Base-T RJ-45 maintenance or 100/1000Base-X SFP uplink port can be activated by installing an optional Combo Port Module. Alternatively, an IEEE 802.11 b/g/n wireless Ethernet extension port is available as an option to extend the Ethernet network to devices in locations where new Ethernet cable runs are not practical. An optional Digital Input/Output Module with four optical isolators configurable as either input or outputs provide connections for alarms, event notifications or other customer designated items. All versions are equipped with Near Field Communication (NFC) to allow simple and repeatable configuration of the switch using a user-friendly app on a mobile device prior to connecting or powering up the switch. Bluetooth Low Energy (BLE) allows remote access to alarm information or to read or change equipment settings without requiring physical access using ladders or scissor lifts. The switch also incorporates integrated management software for setup, monitoring and control of connected devices.

Features

- Management: Web GUI, CLI, SNMP
- Monitoring: SNMP, Syslog
- Jumbo Frame support 10K bytes max
- Auto-MDI/MDIX
- IPv4
- Secure Shell (SSH) / Secure Sockets Layer (SSL)
- Authentication: RADIUS/TACACS+
- Auto Power Reset (APR)
- 6 kV surge protection
- PoE port configuration/power management/power scheduling
- VLAN: Port based VLAN, IEEE 802.1Q tag-based, up to 4K VLAN entries, Private VLAN
- DMI
- Cable diagnostics
- Tamper detection
- NTP with onboard RTC for backup
- Four Independently Configurable digital I/O channels (optional)

Coming Soon Features

- IPv6
- LACP Trunking
- Link Layer Discovery Protocol (LLDP)
- Q in Q

Power Cord Preinstalled

Note: Only for SESPM1040-541-LT-AC

To order the AC version with the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: SESPM1040-541-LT-AC-xx

-xx = Country Code

-NA = North America, -EU = Europe, -UK = United Kingdom, -SA = South Africa, -JP = Japan, -OZ = Australia, -BR = Brazil, -AR = Argentina

Specifications

Standards	IEEE 802.3 IEEE 802.1Q IEEE 802.3af IEEE 802.3ab IEEE 802.3at IEEE 802.3bt *Designed to Comply IEEE 802.3AX*Coming Soon* IEEE 802.1X*Coming Soon* IEEE 802.1ad*Coming Soon*
Ethernet Ports	(4) 10/100/1000 Mbps RJ-45 ports (1) 100/1000 Mbps SFP/RJ-45 combo ports CAT5e cable or higher recommended for 60 Watts; CAT6 cable or higher recommended for 90 Watts
Auxiliary Power Port	2-position wire terminal block (≤12AWG) with screw retention
Serial Console Port	RS-232 RJ-45
MAC Address	8K MAC address table
Max Frame Size	10K bytes
Alarm Status	Accessible through CLI access, BLE interface or Integrated Management Software
Dimensions	Width: 10.05" [255.3 mm] Depth: 4.34" [110.1 mm] Height: 8.48" [215.4 mm]
Power Input	AC Version: Universal input 120-240VAC Low Voltage DC Version: 48VDC (input range 40-59VDC) PoE Powered PD Version: 90 Watts PoE
Power Consumption (no PoE load)	AC Version: < 20 vA DC Version: < 10 W PoE Powered PD Version: ≤ 5 W
Power-over-Ethernet	Max PoE Budget ≤90 Watts on individual ports (specific port configuration may apply) AC Version: 180 Watts total DC Version: 240 Watts total PD Version: 80 Watts total 12VDC auxiliary power (on PD version only) 2-position bare wire terminal block with screw retention up to 12AWG wire size
Environment	Operating: -30°C to +70°C (Inside Enclosure) External Operating: -40°C to +50°C Storage: -40°C to +85°C Humidity: 5% to 95% (non-condensing)
Weight	4.8 lbs. [2.18 kg]
Certifications	Emission EN55022, Class A, Immunity EN55024, Meets Surge Protection as specified in GR-1089 CORE Issue 4; ITU-T K.21 6 kV on AC line, Ingress Protection IP66, NEMA 4X, CE, IEC61000-4-2 (ESD), IEC61000-4-4 (EFT), IEC61000-4-5 (Lightning), IEC60950-1, IEC60950-22, UL EN60950-1, NFC: NFC Forum Type 2 Tag, ISO/IEC 14443A; BLE: BLE 4.2
Warranty	2 Years

Ordering Information

SESPM1040-541-LT-AC
AC-powered self-enclosed switch with (4) 10/100/1000Base-T PoE++ ports + (1) combo 10/100/1000Base-T RJ-45 or 100/1000Base-X SFP port
Note: power cord preinstalled - see note

SESPM1040-541-LT-DC
DC-powered self-enclosed switch with (4) 10/100/1000Base-T PoE++ ports + (1) combo 10/100/1000Base-T RJ-45 or 100/1000Base-X SFP port

SESPM1040-541-LT-PD
PoE-powered Type 4 Class 8 self-enclosed switch with (4) 10/100/1000Base-T PoE++ ports + (1) combo 10/100/1000Base-T RJ-45 or 100/1000Base-X SFP port

Optional Accessories (sold separately)

Hardened SFP Modules

SESPM-2P-1G-CP
Additional Combo Port Module to activate a 2nd combination 10/100/1000Base-T maintenance port or 100/1000Base-X combo uplink port
Note: SFP from included combo port is only usable on PD version when unit is powered with parallel power and fiber cables as opposed to PoE.
Note: This module cannot be used with Wireless Extension Port Module SESPM-3P-BGN-WE

SESPM-3P-BGN-WE *Coming Soon*
IEEE 802.11b/g/n Wireless Extension Port Module
Note: This module cannot be used in conjunction with Additional Combo Port Module SESPM-2P-1G-CP

SESPM-4P-DIG
Digital Input/Output Module with 4 optical isolators and a 12V integral power source with 1500VDC isolation

SESPM-4P-ANTKIT-BGN *Coming Soon*
IEEE 802.11b/g/n Wireless Antenna Kit: includes antenna, surge protector, 48" cable and wall/pole mounting kit (2 required per link)

SESPM-4P-PMB
Pole Mount Bracket Kit
Note: screws, pole straps, or rubber lined zip ties can be used in conjunction with brackets (not included as pole sizes vary)

SESPM-4P-FMKIT
Fiber Management Kit: Includes fiber management tray, mounting screws, and alternative cable gland / inserts

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Managed Hardened Gigabit Ethernet PoE+ Switch

(4) 10/100/1000Base-T PoE+ Ports + (2) 10/100/1000Base-T RJ-45 ports + (2) 100/1000Base-X SFP Slots

The SISPM1040-362-LRT is a managed PoE+ switch suitable for connecting and powering devices in hardened environments. The switch can supply up to 30 Watts per port on all (4) PoE ports simultaneously. The switch also includes the embedded Device Management System (DMS) software that provides the advanced tools necessary for total management of all IP addressable devices. The unique DMS provides security integrators with lower overall cost, less downtime and easier management of the entire PoE+ network.

Transition Networks' hardened switches are certified to operate reliably in harsh environments such as those found on factory floors, outdoor enclosures or other challenging environments.

Features

- Store-and-Forward Architecture with 16 Gbps Switching Bandwidth
- Supports Jumbo frames up to 9.6K Bytes
- Ring Protections
  - Industry standard G.8032 Ethernet Ring Protection Switching (ERPS)
  - Support G.8031 Ethernet Linear Protection Switching (EPS)
  - Rapid Ring with recovery time less than 20ms
- Radius, TACACS+, User Authentication
- Supports LLDP Protocol
- HTTPS/SSH v1/v2 Network Security
- Temperature Detection and Alarm
- Support HW Watchdog to resume operation from CPU hang up
- IEEE 1588 v2 PTP
- Port Mirroring
- Power-over-Ethernet
  - Port Configuration
  - Auto Power Reset (APR)
  - DHCP per Port
  - PoE Scheduling
  - Complies to IEEE 802.3at, IEEE 802.3af
- IEEE 802.3ad LACP, up to 6 groups and up to 4 ports per group
- Up to 4K VLAN groups, Port based, IEEE 802.1Q tag, Q-in-Q, MAC based VLAN, Management VLAN, Private VLAN Edge, Voice VLAN, GVRP
- ACL - up to 256 entries, Drop or Rate limiting based on: Source and Destinations MAC, VLAN ID and IP address, protocol, port, DSCP/IP precedence, TCP/UDP source and destination ports, IEEE 802.1p priority, Ethernet type, ICMP packets and TCP flag

Specifications

Standards	IEEE 802.3 IEEE 802.3z IEEE 802.3x IEEE 802.1p IEEE 802.1w IEEE 802.1X IEEE 802.1ad IEEE 802.3at IEEE 802.1ag IEEE 1588 v2 ITU-T G.8031 IEC62439-2	IEEE 802.3u IEEE 802.3ab IEEE 802.3ad IEEE 802.1Q IEEE 802.1s IEEE 802.1AB IEEE 802.3af IEEE 802.3ah IEEE 802.1D ITU-T Y.1731 ITU-T G.8032
MAC Address	8K	
Backplane	16Gbps	
Serial Console	RJ-45	
Status LEDs	System, Power1, Ring Master, Coupling, Power2, Alarm, Port Status	
Dimensions	Width: 2.4" [62 mm] Depth: 5.3" [135 mm] Height: 5.4" [130 mm]	
DIP Switch (2-pin)	Rapid Ring setting	
Reset button	Reset the switch, Restore Factory default	
Digital output (relay)	24VDC/1A	
Digital input	Level 0 (Low): 0V to 6V Level 1 (High): 10V to 24V	
Power Input	48 - 57VDC; redundant inputs with reverse polarity protection and overload current protection	
Power Consumption Without PoE	8.2 Watts	
Power-over-Ethernet	120 Watts Max Budget 30 Watts on all (4) PoE+ Ports Simultaneously	
Ingress Protection	IP30	
Environment	Operating: -40°C to +75°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.	
Weight	2 lbs. [0.9 kg]	
Certifications	EMI: CE, FCC Part 15, EN61000-4-2, EN61000-4-3, EN-61000-4-4, EN61000- 4-5, EN61000-4-6, EN61000-4-8, IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration), NEMA TS-2; Safety: IEC60950-1, UL Class 1/Div 2	
Compliant* (Designed to Meet)	EN50155, EN50121-4, DNV, IEC61850-3, IEEE1613	
Warranty	5 Years	

*Please **contact sales** with certification needs

Device Management System (DMS)

- Graphical Monitoring – Topology view, Floor view, Map view
- Traffic Monitoring
- Troubleshooting – Network diagnostic, protection mechanism, performance and link management

Ordering Information

SISPM1040-362-LRT
(4) 10/100/1000Base-T PoE+ ports
+ (2) 10/100/1000Base-T RJ-45 ports
+ (2) 100/1000Base-X SFP slots
(Din Rail Bracket included)

Optional Accessories (sold separately)

SFP Modules

EDCA-DIO-01
Enclosure Door Contact Alarm

OCA-P181610
18x16x10" Polycarbonate Enclosure

Industrial Power Supplies (sold separately)

25104
Input: 85-264 VAC, 124-370 VDC
Output: 48~55 VDC, 5.0A, 240 Watts

25105
Input: 85-264 VAC, 124-370 VDC
Output: 48~55 VDC, 2.5A, 120 Watts

PS-DC-DUAL Series
Input: 100-240 VAC, Dual 56VDC + 12 or 24V output

Mounting Brackets (sold separately)

WMBH-01
Wall Mount Bracket

DRBH-01
Din Rail Bracket

Features (Continued)

- Loop Protection
- Quality of Service
  - Supports 8 hardware queues
  - Scheduling: strict priority and WRR, Queue assignment based on DSCP and class of service
  - Classification: Port based, IEEE 802.1p VLAN priority based, IPV4/IPV6 precedence /DSCP based, DiffServ, Classification and re-marking ACLs
  - Rate limiting: Ingress policer, Engress shaping and rate control, per port
- IPv4/IPv6 dual stacks and static routing
- Port Security, IP Source Guard
- System Alarms via SYSLOG / SNMP Trap
- DHCP Client/Server, DHCP relay, Option 82
- Port based network access control (IEEE 802.1X)
- Web / SNMP v1,v2c,v3 / Telnet / CLI management
- Media Redundancy Protocol (MRP)

Managed Hardened Gigabit Ethernet PoE+ Switch

(8) 10/100/1000Base-T Ports + (4) 100/1000Base-X SFP Slots

The SISPM1040-384-LRT-C is a managed PoE+ switch suitable for connecting and powering devices in hardened environments. The switch can supply up to 30 Watts per port on all (8) ports simultaneously. The switch also includes the embedded Device Management System (DMS) software that provides the advanced tools necessary for total management of all IP addressable devices. The unique DMS provides security integrators with lower overall cost, less downtime and easier management of the entire PoE+ network.

Transition Networks' hardened switches are certified to operate reliably in harsh environments such as those found on factory floors, outdoor enclosures or other challenging environments.

Features

- Store-and-Forward Architecture with 24 Gbps Switching Bandwidth
- Supports Jumbo frames up to 9.6K Bytes
- Ring Protections
  - Industry standard G.8032 Ethernet Ring Protection Switching (ERPS)
  - Support G.8031 Ethernet Linear Protection Switching (EPS)
  - Rapid Ring with recovery time less than 20ms
- Radius, TACACS+, User Authentication
- Supports LLDP Protocol
- HTTPS/SSH v1/v2 Network Security
- Temperature Detection and Alarm
- Support HW Watchdog to resume operation from CPU hang up
- IEEE 1588 v2 PTP
- Port Mirroring
- Power-over-Ethernet
  - Port Configuration
  - Auto Power Reset (APR)
  - DHCP per Port
  - Always on PoE
  - PoE Scheduling
  - Complies to IEEE 802.3at, IEEE 802.3af
- IEEE 802.3ad LACP, up to 6 groups and up to 4 ports per group
- Up to 4K VLAN groups, Port based, IEEE 802.1Q tag, Q-in-Q, MAC based VLAN, Management VLAN, Private VLAN Edge, Voice VLAN, GVRP
- ACL - up to 256 entries, Drop or Rate limiting based on: Source and Destinations MAC, VLAN ID and IP address, protocol, port, DSCP/IP precedence, TCP/UDP source and destination ports, IEEE 802.1p priority, Ethernet type, ICMP packets and TCP flag

Specifications

Standards	IEEE 802.3 IEEE 802.3z IEEE 802.3x IEEE 802.1p IEEE 802.1w IEEE 802.1X IEEE 802.1ad IEEE 802.3at IEEE 802.1ag IEEE 1588 v2 ITU-T G.8031 IEC62439-2	IEEE 802.3u IEEE 802.3ab IEEE 802.3ad IEEE 802.1Q IEEE 802.1s IEEE 802.1AB IEEE 802.3af IEEE 802.3ah IEEE 802.1D ITU-T Y.1731 ITU-T G.8032
MAC Address	8K	
Backplane	24Gbps	
Serial Console	RJ-45	
Status LEDs	System, Power1, Ring Master, Coupling, Power2, Alarm, Port Status	
Dimensions	Width: 2.4" [62 mm] Depth: 5.3" [135 mm] Height: 5.4" [130 mm]	
DIP Switch (2-pin)	Rapid Ring setting	
Reset button	Reset the switch, Restore Factory default	
Digital output (relay)	24VDC/1A	
Digital input	Level 0 (Low): 0V to 6V Level 1 (High): 10V to 24V	
Power Input	48 - 57VDC; redundant inputs	
Power Consumption Without PoE		11.1 Watts
Power-over-Ethernet	Total PoE Budget: 240 Watts 30 Watts output on all 8 ports simultaneously	
Ingress Protection	IP30	
Environment	Operating: -40°C to +75°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.	
Weight	2.2 lbs. [1 kg]	
Certifications	EMI: CE, FCC Part 15, EN61000-4-2, EN61000-4-3, EN-61000-4-4, EN61000- 4-5, EN61000-4-6, EN61000-4-8, IEC60068-2-32 (Free fall), IEC60068-2-27 (Shock), IEC60068-2-6 (Vibration), NEMA TS-2 Safety: IEC60950-1, UL Class 1/Div 2	
Compliant* (Designed to Meet)		EN50155, EN50121-4, DNV, IEC61850-3, IEEE1613
Warranty		5 Years

*Please **contact sales** with certification needs

Ordering Information

SISPM1040-384-LRT-C
(8) 10/100/1000Base-T PoE+ [100 m/328 ft.] ports + (4) 100/1000Base-X SFP slots (Din Rail Bracket included)

Optional Accessories (sold separately)

SFP Modules

EDCA-DIO-01
Enclosure Door Contact Alarm

OCA-P181610
18x16x10" Polycarbonate Enclosure

Industrial Power Supplies (sold separately)

25104
Input: 88-264 VAC, 124-370 VDC
Output: 48~55 VDC, 5.0A, 240 Watts

25160
Input 90-264 VAC, 127-370 VDC
Output: 48 ~ 55 VDC, 10A, 480 Watts

PS-DC-DUAL Series
Input: 100-240 VAC, Dual 56VDC + 12 or 24V output

Mounting Brackets (sold separately)

WMBH-01
Wall Mount Bracket

DRBH-01
Din Rail Bracket

Features (Continued)

- Loop Protection
- Quality of Service
  - Supports 8 hardware queues
  - Scheduling: strict priority and WRR, Queue assignment based on DSCP and class of service
  - Classification: Port based, IEEE 802.1p VLAN priority based, IPV4/IPV6 precedence /DSCP based, DiffServ, Classification and re-marking ACLs
  - Rate limiting: Ingress policer, Engress shaping and rate control, per port
- IPv4/IPv6 dual stacks and static routing
- Port Security, IP Source Guard
- System Alarms via SYSLOG / SNMP Trap
- DHCP Client/Server, DHCP relay, Option 82
- Port based network access control (IEEE 802.1X)
- Web / SNMP v1,v2c,v3 / Telnet / CLI management
- Media Redundancy Protocol (MRP)

Device Management System (DMS)

- Graphical Monitoring – Topology view, Floor view, Map view
- Traffic Monitoring
- Troubleshooting – Network diagnostic, protection mechanism, performance and link management

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Managed Hardened Gigabit Ethernet PoE++ Switch

(8) 10/100/1000Base-T PoE++ Ports + (2) 100/1000Base-X SFP Slots

The SISPM1040-582-LRT is a managed PoE++ switch suitable for connecting and powering devices in hardened environments. It has (8) 10/100/1000 PoE++ ports with (2) 100/1000 dual speed SFP slots. The switch can supply up to 90 Watts per port on (4) ports or 60 Watts per port on (8) ports simultaneously. The switch also includes the embedded Device Management System (DMS) software that provides the advanced tools necessary for total management of all IP addressable devices. The unique DMS provides security integrators with lower overall cost, less downtime and easier management of the entire PoE+ network.

Transition Networks' hardened switches are certified to operate reliably in harsh environments such as those found on factory floors, outdoor enclosures or other challenging environments.

Features

- Plenum UL Certified
- IPv4/IPv6 dual protocols
- Supports Jumbo Frame up to 9K bytes
- Authentication - RADIUS, TACACS+
- DHCP Relay, DHCP Snooping, DHCP Server
- L2/L3/L4 ACLs Support MAC, VLAN ID, or IP address, protocol, per port
- LLDP (Link Layer Discovery Protocol)
- ITU-T G.8031 Ethernet Linear Protection
- ITU-T G.8032 Ethernet Ring Protection Switching
- Rapid Ring for fast recovery
- IEEE 802.3az Energy Efficiency
- IP Source Guard, Port Security
- Port Mirroring
- Syslog

PoE Features

- Compliant with IEEE 802.3bt PoE++
- Compliant with IEEE 802.3at PoE+
- Compliant with IEEE 802.3af PoE
- IEEE 802.1AB LLDP-MED Configuration
- PoE Configuration
- PoE Scheduling
- Power Delay
- Auto Power Reset
- DHCP per Port
- Always on PoE

Device Management System (DMS)

- Graphical Monitoring – Topology view, Floor view, Map view
- Traffic Monitoring
- Troubleshooting – Network diagnostic, protection mechanism, performance and link management

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s IEEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1AB IEEE 802.3af IEEE 802.3at IEEE 802.3bt IEEE 802.3ah IEEE 802.1ag IEEE 802.3az IEEE 1588 v2 ITU-T Y.1731 ITU-T G.8031 ITU-T G.8032 IEC62439-2
Protocols	CSMA/CD
Technology	Store-and-forward switching architecture
Connectors	(8) 10/100/1000 Mbps RJ-45 ports (2) 100/1000 Mbps SFP slots (1) Console RJ-45 port
MAC Address	8K MAC address table
Backplane	20 Gbps
DIP Switch	Rapid Ring Setting (2-Pin)
Reset Button	Reset the switch, restore factory default
Digital Output (relay)	24VDC/1A
Digital Input	Level 0 (Low): 0V to 6V Level 1 (High): 10V to 24V
Dimensions	Width: 2.44" [62 mm] Depth: 5.12" [130 mm] Height: 5.31" [135 mm]
Power Input	52 - 57VDC dual inputs Terminal Block
Power-over-Ethernet	Max PoE Budget 480 Watts 60 Watts for (8) ports simultaneously Up to 90 Watts on (4) ports simultaneously
Ingress Protection	IP30
Environment	Operating: -40°C to +75°C (DC input)
Certifications	FCC Class A; CE; NEMA TS-2, UL 2043, UL 2108 Safety: EN62368-1, UL62368-1
Compliant* (Designed to Meet)	IEC61850-3, IEEE 1613, Class 1 Div 2
Warranty	5 Years

*Please **contact sales** with certification needs

Ordering Information

SISPM1040-582-LRT
(8) 10/100/1000Base-T PoE++ ports
+ (2) 100/1000Base-X SFP slots
52V - 57 VDC (Din Rail Bracket included)

Optional Accessories (sold separately)

SFP Modules

EDCA-DIO-01
Enclosure Door Contact Alarm

OCA-P181610
18x16x10" Polycarbonate Enclosure

Industrial Power Supplies (sold separately)

25160
Input 90-264 VAC, 127-370 VDC
Output: 48 ~ 55 VDC, 10A, 480 Watts

25104
Input: 85-264 VAC, 124-370 VDC
Output: 48 ~ 55 VDC, 5A, 240 Watts

PS-DC-DUAL Series
Input: 100-240 VAC, Dual 56VDC + 12 or 24V output

Mounting Brackets (sold separately)

WMBH-01
Wall Mount Bracket

DRBH-01
Din Rail Bracket

Software Features

- Management: Web Management, SNMP V1/V2c/V3, SSH, CLI
- Port Trunk: Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP) and static trunk
- Multicast: Support IGMP Snooping V1/V2/V3, MVR, MLD Snooping V1/V2
- Quality of Service: Supports 8 hardware queues. Strict priority and WRR, Ingress policer, Egress shaping and per port rate control
- Spanning Tree: Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- VLAN: Port Based VLAN, IEEE 802.1Q tag-based, up to 4k VLAN entries, QinQ, MAC-based VLAN, Management VLAN, Voice VLANs, and Private VLAN
- Firmware Update through TFTP and HTTP/HTTPs
- IEEE 802.3ah, IEEE 802.1ag, ITU-T Y.1731
- Support IEEE 1588 v2 PTP
- Media Redundancy Protocol (MRP)
- Static Routing

Managed Hardened Gigabit Ethernet PoE+ Rack Mountable Switch

(16) 10/100/1000Base-T PoE+ Ports + (4) 100/1000Base-X SFP Slots + (2) 1G/10GBase-X SFP+ Slots

This switch is a next generation rack mountable hardened switch with 80Gbps switching capacity. It provides (16) 10/100/1000 PoE+ ports, (4) 100/1000 dual speeds SFP ports and has (2) additional 1G/10G SFP+ slots.

Features

- IPv4/IPv6 dual protocols
- Supports Jumbo Frame up to 9K bytes
- Authentication - RADIUS, TACACS+
- DHCP Relay, DHCP Snooping, DHCP Server
- L2/L3/L4 ACLs Support MAC, VLAN ID, or IP address, protocol, per port
- LLDP (Link Layer Discovery Protocol)
- ITU-T G.8031 Ethernet Linear Protection
- ITU-T G.8032 Ethernet Ring Protection Switching
- Rapid Ring for fast recovery
- IEEE 802.3az Energy Efficiency
- IP Source Guard, Port Security
- Port Mirroring
- Syslog
- Static Routing, 130 rates (max)
- Fanless Design

PoE Features

- Compliant with IEEE 802.3at PoE+
- Compliant with IEEE 802.3af PoE
- IEEE 802.1AB LLDP-MED Configuration
- PoE Configuration
- PoE Scheduling
- Power Delay
- Auto Power Reset
- DHCP per Port
- Always on PoE

Device Management System (DMS)

- Graphical Monitoring – Topology view, Floor view, Map view
- Traffic Monitoring
- Troubleshooting – Network diagnostic, protection mechanism, performance and link management

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s IEEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1AB IEEE 802.3af IEEE 802.3at IEEE 802.3az IEEE 802.3ah IEEE 802.1ag
Protocols	CSMA/CD
Technology	Store-and-forward switching architecture
Connectors	(16) 100/1000 Mbps RJ-45 ports (4) 100/1000 Mbps SFP slots (2) 1G/10G Mbps SFP+ slots (1) Console RJ-45 port
MAC Address	32K MAC address table
Backplane	80 Gbps
Digital Output	24 VDC / 1A (Relay)
Digital Input	Level 0 (low): 0V to 6V Level 1 (high): 10V to 24V
Dimensions	Width: 17.4” [442 mm] Depth: 11.81” [300 mm] Height: 1.73” [44 mm]
Power Input	52 - 57VDC Dual Input Terminal Block or Single Input 100 - 250VAC Maximum Power Consumption (without PoE): 36 Watts
Power-over-Ethernet	Max PoE Budget 250 Watts (PoE power not available with use of AC power supply) 15 Watts for (16) ports simultaneously 30 Watts for (8) ports simultaneously
Ingress Protection	IP30
Environment	Operating: -40°C to +75°C (1G SFPs) Operating: -40°C to +60°C (10G SFPs)
Weight	10.58 lbs. [4.8 kg]
Certifications	FCC Class A; CE; NEMA TS-2, UL Safety: LVD
Compliant * (Designed to Meet)	IEC61850-3, IEEE 1613, Class 1 Div 2
Warranty	5 Years

*Please **contact sales** with certification needs

Ordering Information

SISPM1040-3166-L
(16) 10/100/1000Base-T PoE+ ports
+ (4) 100/1000Base-X SFP slots ports
+ (2) 1G/10GBase-X SFP+ slots
52V - 57 VDC or 100V - 250VAC

Optional Accessories (sold separately)

SFP and SFP+ Modules

EDCA-DIO-01
Enclosure Door Contact Alarm

Industrial Power Supplies (sold separately)

25104
Input: 85-264 VAC, 124-370 VDC
Output: 48 ~ 55 VDC, 5A, 240 Watts

25160
Input 90-264 VAC, 127-370 VDC
Output: 48 ~ 55 VDC, 10A, 480 Watts

Software Features

- Management: Web Management, SNMP V1/V2c/V3, SSH, CLI
- Port Trunk: Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP) and static trunk
- Multicast: Support IGMP Snooping V1/V2/V3, MVR, MLD Snooping V1/V2
- Quality of Service: Supports 8 hardware queues. Strict priority and WRR, Ingress policer, Egress shaping and per port rate control
- Spanning Tree: Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- VLAN: Port Based VLAN, IEEE 802.1Q tag-based, up to 4k VLAN entries, Q-in-Q, MAC-based VLAN, Management VLAN, Voice VLAN, Private VLAN
- Firmware Update through TFTP and HTTP/HTTPs
- E-Line, E-LAN, E-TREE, E-ACCESS, IEEE 802.3ah, IEEE 802.1ag, ITU-T Y.1731, Y.1564
- Support IEEE 1588 v2 PTP (TC)

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Managed Hardened Gigabit Ethernet PoE+ Rack Mountable Switch

(24) 10/100/1000Base-T PoE+ Ports + (4) 100/1000Base-X SFP Slots + (4) 1G/10GBase-X SFP+ Slots

This switch is a next generation rack mountable hardened switch with 136Gbps switching capacity. It provides (24) 10/100/1000 PoE+ ports, (4) 100/1000 dual speeds SFP ports, It has additional (4) 1G/10G SFP+ slots.

Features

- IPv4/IPv6 dual protocols
- Supports Jumbo Frame up to 9K bytes
- Authentication - RADIUS, TACACS+
- DHCP Relay, DHCP Snooping, DHCP Server
- L2/L3/L4 ACLs Support MAC, VLAN ID, or IP address, protocol, per port
- LLDP (Link Layer Discovery Protocol)
- ITU-T G.8031 Ethernet Linear Protection
- ITU-T G.8032 Ethernet Ring Protection Switching
- Rapid Ring for fast recovery
- IEEE 802.3az Energy Efficiency
- IP Source Guard, Port Security
- Port Mirroring
- Syslog
- Static Routing, 130 rates (max)
- Fanless Design

PoE Features

- Compliant with IEEE 802.3at PoE+
- Compliant with IEEE 802.3af PoE
- IEEE 802.1AB LLDP-MED Configuration
- PoE Configuration
- PoE Scheduling
- Power Delay
- Auto Power Reset
- DHCP per Port
- Always on PoE

Device Management System (DMS)

- Graphical Monitoring – Topology view, Floor view, Map view
- Traffic Monitoring
- Troubleshooting – Network diagnostic, protection mechanism, performance and link management

Specifications

Standards	IEEE 802.3 IEEE 802.3u IEEE 802.3z IEEE 802.3ae IEEE 802.3x IEEE 802.3ad IEEE 802.1D IEEE 802.1w IEEE 802.1s IEEE 802.1Q IEEE 802.1p IEEE 802.1ad IEEE 802.1AB IEEE 802.3af IEEE 802.3at IEEE 802.3az IEEE 802.3ah IEEE 802.1ag
Protocols	CSMA/CD
Technology	Store-and-forward switching architecture
Connectors	(24) 100/1000 Mbps RJ-45 ports (4) 100/1000 Mbps SFP slots (4) 1G/10G Mbps SFP+ slots (1) Console RJ-45 port
MAC Address	32K MAC address table
Backplane	136 Gbps
Digital Output	24 VDC / 1A (Relay)
Digital Input	Level 0 (low): 0V to 6V Level 1 (high): 10V to 24V
Dimensions	Width: 17.4" [442 mm] Depth: 11.81" [300 mm] Height: 1.73" [44 mm]
Power Input	52 - 57VDC Dual Input Terminal Block or Single Input 100 - 250VAC Maximum Power Consumption (without PoE): 36 Watts
Power-over-Ethernet	Max PoE Budget 370 Watts (PoE power not available with use of AC power supply) 15 Watts for (24) ports simultaneously 30 Watts for (12) ports simultaneously
Ingress Protection	IP30
Environment	Operating: -40°C to +75°C (1G SFPs) Operating: -40°C to +60°C (10G SFPs)
Weight	11.02 lbs. [5 kg]
Certifications	FCC Class A; CE; NEMA TS-2, UL Safety: LVD
Compliant* (Designed to Meet)	IEC61850-3, IEEE 1613, Class 1 Div 2
Warranty	5 Years

*Please **contact sales** with certification needs

Ordering Information

SISPM1040-3248-L
(24) 10/100/1000Base-T PoE+ ports
+ (4) 100/1000Base-X SFP slots
+ (4) 1G/10GBase-X SFP+ slots
52V - 57 VDC or 100V - 250VAC

Optional Accessories (sold separately)

SFP and SFP+ Modules

EDCA-DIO-01
Enclosure Door Contact Alarm

Industrial Power Supplies (sold separately)

25104
Input: 85-264 VAC, 124-370 VDC
Output: 48 ~ 55 VDC, 5A, 240 Watts

25160
Input 90-264 VAC, 127-370 VDC
Output: 48 ~ 55 VDC, 10A, 480 Watts

Software Features

- Management: Web Management, SNMP V1/V2c/V3, SSH, CLI
- Port Trunk: Supports IEEE 802.3ad port trunk with link aggregation control protocol (LACP) and static trunk
- Multicast: Support IGMP Snooping V1/V2/V3, MVR, MLD Snooping V1/V2
- Quality of Service: Supports 8 hardware queues. Strict priority and WRR, Ingress policer, Egress shaping and per port rate control
- Spanning Tree: Supports IEEE 802.1s MSTP, IEEE 802.1w RSTP and IEEE 802.1D STP Compliant
- VLAN: Port Based VLAN, IEEE 802.1Q tag-based, up to 4k VLAN entries, Q-in-Q, MAC-based VLAN, Management VLAN, Voice VLAN, Private VLAN
- Firmware Update through TFTP and HTTP/HTTPs
- E-Line, E-LAN, E-TREE, E-ACCESS, IEEE 802.3ah, IEEE 802.1ag, ITU-T Y.1731, Y.1564
- Support IEEE 1588 v2 PTP (TC)

Enclosure Door Contact Alarm

The Enclosure Door Contact Alarm is designed to mount within a telecom equipment cabinet and is a security device that helps alert network managers when the cabinet door has been opened. This device will provide 12VDC power to a cabinet door contact switch, or other actuation device. The status of this contact switch, either open or closed, can then be wired to a standard alarm input on a managed Ethernet switch, such as one of three Hardened Ethernet Switches offered by Transition Networks; SISPM1040-362-LRT, SISPM1040-384-LRT-C, or SISPM1040-582-LRT.

The EDCA-DIO-01 requires power and can be powered by the same power supply providing power to the Hardened Ethernet Switch via the 2-wire DC input port on the 6-pin terminal block. The 12 VDC Relay port is connected to the sensor or door contact closure switch while the ALARM out port is connected to the digital input port on the hardened Ethernet switch. The Ethernet switch will alert network managers when the cabinet door has a change in status.

Ordering Information

EDCA-DIO-01
Enclosure Door Contact Alarm

Optional Accessories (sold separately)

WMB-EDCA
Wall Mount Bracket for EDCA-DIO-01

22365
Magnetic Contact Alarm Switch

Features

- Wide input of 20 – 60 VDC
- Input is fused and reverse polarity protected
- Standard DIN Rail Clip is included
- A wall mount bracket is also available (sold separately)
- Will work with the cabinet door contact switch provided by your enclosure manufacturer
- A third party magnetic enclosure door contact switch is available (sold separately)
- Compatible for use with these Transition Hardened Ethernet Switches
  - SISPM1040-362-LRT
  - SISPM1040-384-LRT-C
  - SISPM1040-582-LRT
  - SISPM1040-3166-L
  - SISPM1040-3248-L

Specifications

Connector	6-pin Terminal Block
Status LED	PWR (Power): On = Power
Power Consumption	1.2 W (100mA at 12V out max.)
Power Input	20 - 60 VDC
Power Output	12 VDC +/- 10%
Dimensions	Width: 2” [50.8 mm] Depth: 0.88” [22.23 mm] Height: 2” [50.8 mm]
Weight	0.2 lbs. [0.09 kg]
MTBF	9,950,896 hours
Environment	Operating:-25°C to +75°C Storage: -40°C to +85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 - 10,000 ft.
Certifications	EN55032, EN55024, CE Mark
Warranty	Lifetime

Outdoor Cabinet Assembly

18 x 16 x 10” Polycarbonate Enclosure for Outdoor Switches

Transition Networks’ Outdoor Cabinet Assembly is a high impact resistant polycarbonate enclosure with a hinged cover that permits a 225° door swing and allows for easy door removal during installation or maintenance. The door is secured by two stainless steel latches that are bolted in place (providing more security than pop rivets or slide-on latches) and can be further secured with pad locks (not included). The 18” x 16” x 10” cabinet is deep enough to protect the bend radius of fiber cables connected to nearly any Transition Networks temperature hardened switch when mounted in the enclosure. A liquid tight vent plug is included to prevent condensation inside the enclosure.

Inside the cabinet, the OCA-P181610 includes two 15” DIN rails for easily mounting switches, media converters, power supplies and other communications equipment (sold separately). One entry port for routing power wires (a receptacle can be added by installer if desired) and 10 data cable entry ports with cord grips (each data cord grip accommodates two cables) are pre-installed in the cabinet. The enclosure also includes a ground terminal block with four push-in connections on each DIN rail to protect against lightning or other surges in power to the enclosure. Red and black feed-through terminal blocks are provided for terminating low voltage DC positive and negative wires within the enclosure. Blue and white feed-through terminal blocks are provided for AC mains line and neutral/line connections. End caps are also included for added safety. The enclosure includes mounting feet for mounting on a wall or side of building and optional brackets are available for mounting on 2-6” diameter poles.

The enclosure includes a magnetic door contact switch which can be wired to digital input/outputs on Transition Networks switches or our optional Enclosure Door Contact Alarm to provide alerts when the enclosure door has been opened. The EDCA-DIO-01 mounts easily on the DIN rails or to the side of the cabinet with optional wall mount brackets. Optional fiber management trays (SESPM-4P-FMT) are available for managing fiber cable, if needed.

Features

- Light weight, high impact resistant polycarbonate cabinet
- Wide swing or removable hinge for easy access
- Bolted latches
- Vent to prevent condensation inside enclosure
- Wall or pole mount (optional)
- Enclosure door contact alarm (optional)
- Fiber management trays (optional)
- Wide operating temperature range
- Made in USA

Specifications

Dimensions	Width: 16.91” [429.51 mm] Depth: 11.5” [292.1 mm] Height: 19.69” [500.13 mm]
Weight	15.15 lbs. [6.87 kg]
DIN Rails	(2) 35mm DIN (1.39" x 15")
Instrumented Dart Impact @ 73°F	565 in lb
Deflection Temperature @ 264 psi	270°F
Modulus of Elasticity	34 ksi
Tensile Strength Temperature Range	-40 to 265°F
Environment	Operating: -40° to +70°C (inside enclosure) External Operating: -40°C to +50°C
Flame Rating – UL 94	5VA
Outdoor UV Exposure – UL	1
Certifications	Consists of UL compliant components Cabinet UL 50/cUL listed File E229365/E207562; NEMA 4X/IP66 Vent plug UL/cUL recognized File E330194; approved for use in IP65/67/68 applications Wire glands UL/cUL recognized File E51579; approved for NEMA 4, 4X, 6 and 6P applications Ground terminal blocks UL/cUL recognized File E 60425

Ordering Information

OCA-P181610
Outdoor cabinet with vent, (2) DIN rails, (2) ground terminal blocks and (1) each low voltage DC positive and negative and AC mains line and neutral/line terminal block, plus (1) power and (10) data wire glands

Optional Accessories (sold separately)

OCA-PMK-26
Outdoor Switch Enclosure Pole Mount Bracket Kit for 2-6" diameter pole (optional)
*Contact our experts for more information

Complimentary Products (sold separately)

SISPM1040-384-LRT-C
Managed Hardened Gigabit Ethernet PoE+ Switch with (8) 10/100/1000Base-T PoE+ Ports + (4) 100/1000Base-X SFP Slots

SISPM1040-582-LRT
Managed Hardened Gigabit Ethernet PoE++ Switch with (8) 10/100/1000Base-T PoE++ Ports + (2) 100/1000Base-X SFP Slots

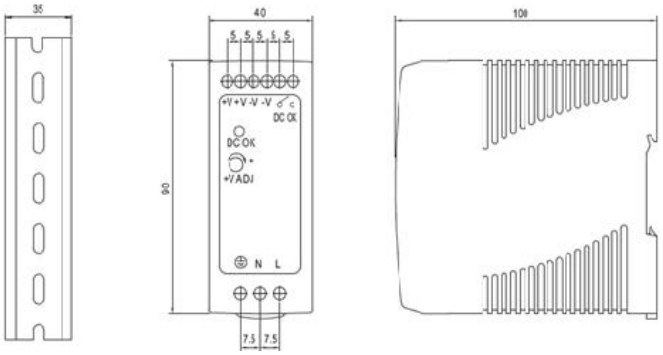
PS-DC-DUAL-5624T
345W Dual Industrial Power Supply, 24VDC + 56VDC

EDCA-DIO-01
Enclosure Door Contact Alarm, DIN Rail Mount

WMB-EDCA
Enclosure Door Contact Alarm Wall Mount Bracket

SESPM-4P-FMKIT
Fiber Management Tray, accommodates (2) splices

Industrial DIN Rail Mounted Power Supply



Ordering Information

25130
Industrial DIN rail mounted power supply
48VDC, 39.8Watts

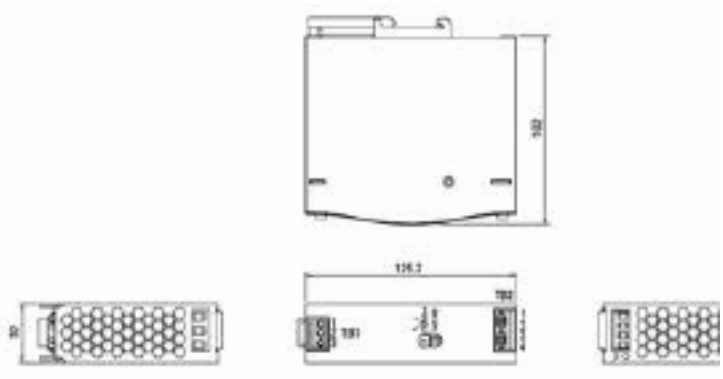
Features

- Variable AC input range
- Protected against: Overload and Over Voltage
- Convection air cooling
- DIN rail mountable
- UL 508 approved
- Full load burn in test
- RoHS Compliant

Specifications

Output	Output Voltage	48VDC
	Current Rating	0.83A
	Power Rating	39.8 Watts
	Ripple & Noise Max	200mVp-p
	Voltage Range	48~56VDC
	Voltage Tolerance	±1.0%
	Line Regulation	±1.0%
	Load Regulation	±1.0%
	Setup, Rise Time	500ms, 30ms
	Hold Up Time	20ms/115VAC
Input	Voltage Range	Switch Selectable: 88~264VAC 120~370VDC
	Frequency Range	47~63Hz
	Efficiency	88%
	AC Current (Typical)	1.1A@115VAC, 0.7A@230VAC
	Inrush Current (Cold)	30A@115VAC, 60A@230VAC
	Leakage Current	<1mA@240VAC
Protection	Overload	105~150%
	Overvoltage	57.6~64.8V
Dimensions	Width: 1.57” [40 mm] Depth: 3.94” [100 mm] Height: 3.54” [90 mm]	
Environment	Operating: -20°C to +70°C Storage: -40°C to +85°C Humidity: 20% to 90% (non-condensing)	
Weight	0.66 lbs. [0.3 kg]	
MTBF	301.7Khrs	
Certifications	Safety: UL508, TUV EN60950-1, NEC Class 2, LPS Compliant, UL60950-1, EN55011, EN55022, CISPR22, EN61204-3 Class B, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN55024, EN61000-6-2, EN50082-2, EN61204-3 A, IEC60068-2-6 (Vibration)	
Warranty	Lifetime	

Industrial DIN Rail Mounted Power Supply



Ordering Information

25131
Industrial DIN rail mounted power supply
48VDC, 76.8Watts

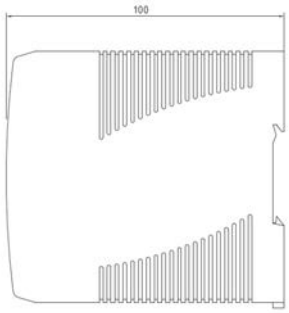
Features

- Auto-Negotiation
- Variable AC input range
- Protected against:
  - Overload
  - Over Voltage
  - Over Temperature
- Convection air cooling
- DIN Rail mountable
- UL 508 approved
- Full load burn in test
- RoHS compliant

Specifications

Output	Output Voltage	48VDC
	Current Rating	1.6A
	Power Rating	76.8 Watts
	Ripple & Noise Max	120mVp-p
	Voltage Range	48~55VDC
	Voltage Tolerance	±1.0%
	Line Regulation	±0.5%
	Load Regulation	±1.0%
	Setup, Rise Time	3000ms, 60ms
	Hold Up Time	20ms/115VAC
Input	Voltage Range	Switch Selectable: 88~264VAC, 124~370VDC
	Frequency Range	47~63Hz
	Efficiency	90%
	AC Current (Typical)	1.4A@115VAC, .85A@230VAC
	Inrush Current (Cold)	30A@115VAC, 50A@230VAC
	Leakage Current	<1mA@240VAC
Protection	Overload	110~150%
	Overvoltage	56~65.8V
Dimensions	Width: 1.26” [32 mm] Depth: 4.02” [102 mm] Height: 4.93” [125.2 mm]	
Environment	Operating: -30°C to +70°C Storage: -40°C to +85°C Humidity: 20% to 95% (non-condensing)	
Weight	1.12 lbs. [0.51 kg]	
MTBF	481.9Khrs	
Certifications	Safety: UL508, TUV EN60950-1, IEC60068-2-6 (Vibration) EN55022, CISPR22, EN61204-3 Class B, EN61000-3-2, EN61000-3-3, EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN55024, EN61000-6-2, EN50082-2, EN61204-3 A, IEC60068-2-6 (Vibration)	
Warranty	Lifetime	

Industrial DIN Rail Mounted Power Supply



Ordering Information

25135
24VDC, 10 Watts – DIN Rail Mount

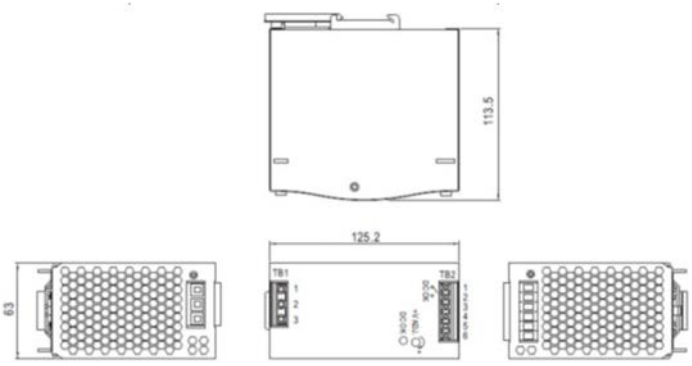
Features

- Universal AC input range
- Protected against:
  - Overload
  - Over Voltage
- Convection air cooling
- DIN Rail mountable
- UL 508 approved
- Full load burn in test
- RoHS compliant

Specifications

Output	Voltage	24VDC
	Current Rating	42A
	Power Rating	10 Watts
	Ripple & Noise Max	150mVp-p
	Voltage Tolerance	±2.0%
	Line Regulation	±1.0%
	Load Regulation	±2.0%
	Setup, Rise Time	1000ms, 30ms
	Hold Up Time	25ms/115VAC
Input	Voltage Range	85~264VAC, 120~370VDC
	Frequency Range	47~63Hz
	Efficiency	84%
	AC Current (Typical)	.33A@115VAC .21A@230VAC
	Inrush Current (Cold)	35A@115VAC 70A@230VAC
	Leakage Current	<1mA@240VAC
Protection	Overload	105% Rated Output
	Overvoltage	27.6~32.4V
Dimensions	Width: 0.89" [22.5 mm] Depth: 3.94" [100 mm] Height: 3.54" [90 mm]	
Environment	Operating: -20°C to 70°C Storage: -40°C to 85°C Humidity: 20% to 90% (non-condensing)	
Weight	0.37 lbs. [0.17 kg]	
MTBF	584Khrs	
Certifications	Safety: UL508, TUV EN60950-1, NEC Class 2/LPS EMC Emissions: EN55011, EN55022, CISPR22, EN61204-3 Class B, EN61000-3-2, EN61000-3-3 EMC Immunity: EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN55024, EN61000-6-1, EN61204-3 A IEC60068-2-6 (Vibration)	
Warranty	Lifetime	

Industrial DIN Rail Mounted Power Supply



Ordering Information

25104
Industrial DIN rail mounted power supply
Input: 85-264 VAC, 124-370 VDC
Output: 48~55 VDC, 5.0A, 240 Watts

Features

- 94% High Efficiency
- 150% Peak Load
- Protected against:
  - Short Circuit
  - Overload
  - Over Voltage
  - Overheating
- Convection air cooling
- DIN rail mountable
- UL 508 approved
- Full load burn in test
- RoHS compliant

Specifications

Output	Output Voltage	48VDC
	Current Rating	5A
	Power Rating	240 Watts
	Ripple & Noise Max	120mVp-p
	Voltage Range	48~55VDC
	Voltage Tolerance	±1.0%
	Line Regulation	±0.5%
	Load Regulation	±1.0%
	Setup, Rise Time	300ms, 60ms
	Hold Up Time	20ms
Input	Voltage Range	Switch Selectable 88~264VAC 124~370VDC
	Frequency Range	47~63Hz
	Efficiency	94%
	AC Current (Typical)	2.6A@115VAC 1.3A@230VAC
	Inrush Current (Cold)	33A@115VAC 65A@230VAC
Protection	Overload	105~160%
	Overvoltage	56~65V
Dimensions	Width: 2.48” [63 mm] Depth: 4.47” [113.5 mm] Height: 4.93” [125.2 mm]	
Environment	Operating: -25°C to +70°C Storage: -40°C to +85°C Humidity: 20% to 90% (non-condensing)	
Weight	2.27 lbs. [1.03 kg]	
MTBF	169.3 Khrs	
Certifications	Safety: UL508, TUV EN60950-1; IEC60068-2-6 (Vibration); EMC Emission: EN55022, CISPR22 Class B, EN61000-3-2, |EN61000-3-3; EMC Immunity: EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN55024, EN61000-6-2, EN50082-2, EN61204-3, SEMI F47, GL Approved	
Warranty	Lifetime	

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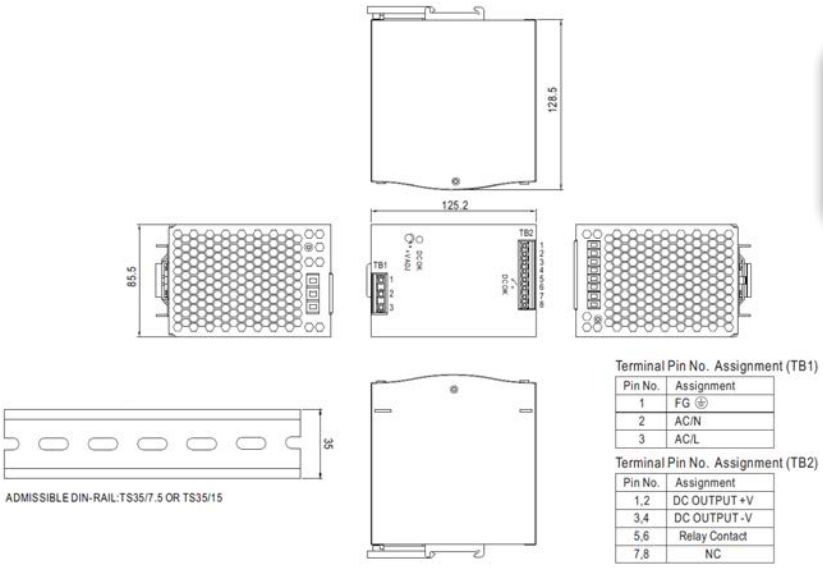
Hardened DIN Rail Mounted Power Supply



Terminal Pin No. Assignment (TB1)

Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

Terminal Pin No. Assignment (TB2)

Pin No.	Assignment
1,2	DC OUTPUT +V
3,4	DC OUTPUT -V
5,6	Relay Contact
7,8	NC

Ordering Information

25160
Hardened DIN rail mounted power supply
Input 90-264 VAC, 127-370 VDC
Output: 48 ~ 55 VDC, 10A, 480 Watts

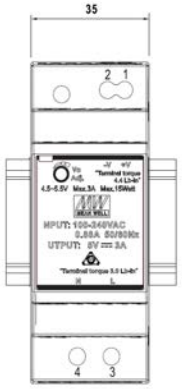
Features

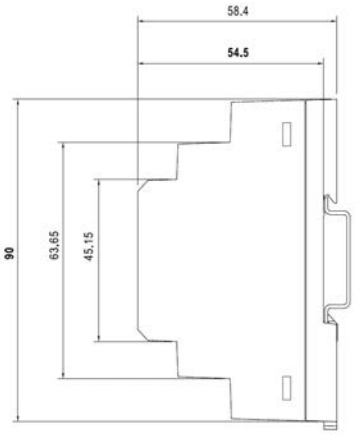
- 94% High Efficiency
- 150% Peak Load
- Protected against:
  - Short Circuit
  - Overload
  - Over Voltage
  - Overheating
- Convection air cooling
- DIN rail mountable
- UL 508 approved
- Full load burn in test
- RoHS compliant

Specifications

Output	Output Voltage	48VDC
	Current Rating	5A
	Power Rating	480 Watts
	Ripple & Noise Max	120mVp-p
	Voltage Range	48~55VDC
	Voltage Tolerance	±1.0%
	Line Regulation	±0.5%
	Load Regulation	±1.0%
	Setup, Rise Time	300ms, 60ms
	Hold Up Time	20ms
Input	Voltage Range	Switch Selectable 90~264VAC 127~370VDC
	Frequency Range	47~63Hz
	Efficiency	94%
	AC Current (Typical)	5A@115VAC 2.5A@230VAC
	Inrush Current (Cold)	40A@115VAC 80A@230VAC
Protection	Overload	110~160%
	Overvoltage	57.6~64.8V
Dimensions		Width: 3.37" [85.5 mm] Depth: 5.06" [128.5 mm] Height: 5.99" [152.2 mm]
Environment		Operating: -25°C to +70°C Storage: -40°C to +85°C Humidity: 20% to 90% (non-condensing)
Weight		3.53 lbs. [1.6 kg]
MTBF		112.9 Khrs
Certifications		Safety: UL508, TUV EN60950-1; IEC60068-2-6 (Vibration) EMC Emission: EN55011, EN5032(CISPR32), EN61204-3 Class B, EN61000-3-2, EN61000-3-3; EMC Immunity: EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN55024, EN61000-6-2, EN50082-2, EN61204-3, SEMI F47, GL Approved
Warranty		5 Year

Industrial DIN Rail Mounted Power Supply





Ordering Information

25165
Industrial DIN Rail Mounted Power Supply

Features

- Protected against:
  - Short Circuit
  - Overload
  - Over Voltage
- Convection air cooling
- DIN rail mountable
- RoHS compliant
- No load power consumption < 0.3W
- Isolation class II
- Pass LPS (Limited power source)
- DC output voltage adjustable
- LED indicator for power on

Specifications

Output Voltage	12VDC
Output Current Rating	2A
Output Power Rating	24 Watts
Output Ripple & Noise Max	120mVp-p
Output Voltage Range	10.8 ~ 13.8VDC
Output Voltage Tolerance	±1.0%
Output Line Regulation	±1.0%
Output Load Regulation	±1.0%
Output Setup, Rise Time	500ms, 50ms full load
Output Hold Up Time	30ms / 230VAC, 12ms / 115VAC at full load
Input Voltage Range	Switch Selectable 85 ~ 264VAC 120 ~ 370VDC
Input Frequency Range	47 ~ 63Hz
Input Efficieny	88%
Input AC Current (Typical)	0.88A@115VAC 0.48A@230VAC
Input Inrush Current (Cold)	25A@115VAC 45A@230VAC
Protection Overload	105 ~ 160%
Protection Overvoltage	15 ~ 18V
Dimensions	Width: 1.38” [35 mm] Depth: 2.15” [54.5 mm] Height: 3.54” [90 mm]
Environment	Operating: -30°C to +70°C Storage: -40°C to +85°C Humidity: 10% to 95% RH(non-condensing)
Weight	0.26 lbs. [0.12 kg]
MTBF	968.1 Khrs
Certifications	Safety: UL 60950-1, UL508, TUV EN61558-2-16, IEC60950-1, EAC TP TC 004, BSMI CNS14336-1 approved; EMC Emission: EN55032, CISPR32, CNS13438, EN61000-3-2, |EN61000-3-3 EMC Immunity: EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN55024, EN55035 EN61000-6-2, EN61204-3
Warranty	5 Year

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Stand-Alone Hardened Power Supply

345 Watt Isolated Power Supply with 56VDC and 12/24VDC Dual Output

PS-DC-DUAL-5624T

This stand-alone power supply is designed to offer dual DC power output in extended temperature environments. It has a compact form factor and can be DIN rail mounted.

Ordering Information

PS-DC-DUAL-5624T
345 Watt Power Supply with 56VDC and 24VDC dual output

PS-DC-DUAL-5612T
345 Watt Power Supply with 56VDC and 12VDC dual output
*Note: By Request Only

Power Cord Included
To order the corresponding country specific power cord, add the extension from the list below to the end of the SKU; Ex: PS-DC-DUAL-5624T-NA

-NA = Country Code
AL = North America locking right angle
NA = North America
LA = Latin America
EU = Europe
UK = United Kingdom
SA = South Africa
JP = Japan
OZ = Australia
BR = Brazil

Features

- Compact Stand-Alone or DIN Rail form factor
- Wide 100 – 240VAC power input with externally accessible fuse
- Dual Output: 315W at 56VDC and 30W at 24VDC or 12VDC, Terminal Block Connectors
- Maximum output: 345 Watts
- Full compliance with IEEE 2250VDC PoE isolation requirements
- Active fan speed control based on temperature
- Front panel LED to indicate the status of power supply, fan faults and temperature
- 2-Pin alarm DC relay output with 5 event monitoring
  - Fan tachometer monitoring for low speed or lock conditions
  - Over or under temperature
  - 12/24V output out of spec

Specifications

Output 1	Voltage	56V (terminal block)
	Regulation	+/- 2%
	Current Rating	5.7A
	Power Rating	315W
Output 2	Voltage	24V (terminal block) (5624T) 12V (terminal block) (5612T)
	Regulation	+/- 5%
	Current Rating	1.25A
	Power Rating	30W
Input Voltage Range		100-240VAC
Input Frequency Range		47 - 63 HZ
Power Consumption		4A at 120 VAC (typical)
Dimensions		Width: 6.25” [159 mm] Depth: 6.45” [164 mm] Height: 1.75” [44 mm]
Weight		1.8 lbs. [0.82 kg]
MTBF		623,377 hrs
Environment		Operating: -20°C to +70°C (restricted) -20°C to +50°C (unrestricted) Storage: -30°C to +70°C Operating Humidity: 5% to 95% (non-condensing)
Certifications		EMI: EN55032 Class A, EN55024 Safety: EN60950, UL 60950
Warranty		5 Years

A Comprehensive Network Management System for Transition Networks Products

CommandPoint NMS, Transition Networks' comprehensive Network Management System simplifies management and provisioning of Transition Networks' switches and media converters. With its intuitive user interface, CommandPoint NMS makes deployment, monitoring and maintenance of managed Transition Networks' devices simple and efficient thereby reducing operational expenses and lowering total cost of ownership.

CommandPoint NMS is based on a microservice architecture which because of its modularity allows for ease of deploying new features and high scalability. CommandPoint NMS provides a complete REST API which allows easy integration with higher level NMS for flow through management reducing the cost of integration with existing management solutions.

Current Features

- Client Server system supporting any Web Browser Client and multiple concurrent users
- Centralized Fault Management with real-time view of SNMP traps and Syslog events
- Up to date consolidated network inventory view with devices details such as firmware version
- Hassle-free network-wide firmware upgrades, device configuration backups/restores
- Advanced scheduling capability allows flexibility to perform device updates during maintenance window
- User management by admin user
- Internal or External tftp server support for firmware and configuration files

See product page on transition.com for list of supported products

System Requirements

System	Ubuntu 16.04 LTS or later (VM or Native)
CPU	At least 2 CPUs on the VM, 2 GHz dual core processor or better
RAM	At least 8GB
Hard Disk Space	At least 60GB
Internet Access	Required

Future Functionality

- Easy File Management of files on tftp server with ability to clone and edit configuration files
- User roles management and Role based access
- Advanced User management with detailed audit log
- Alarms acknowledgement and management
- Centralized performance data collection and management
- Network Topology view

Perpetual License

CPNMS-100-PL
Manage up to 100 Network Elements

CPNMS-500-PL
Manage up to 500 Network Elements

CPNMS-1000-PL
Manage up to 1,000 Network Elements

CPNMS-2000-PL
Manage up to 2,000 Network Elements

Add Network Elements

CPNMS-PLUS100-PL
Add 100 Network Elements

CPNMS-PLUS500-PL
Add 500 Network Elements

Perpetual License Annual Support Fee

(Required for 1st year of perpetual license)

CPNMS-100-ASF
Annual Support Fee for CPNMS-100-PL

CPNMS-500-ASF
Annual Support Fee for CPNMS-500-PL

CPNMS-1000-ASF
Annual Support Fee for CPNMS-1000-PL

CPNMS-2000-ASF
Annual Support Fee for CPNMS-2000-PL

Add Network Elements

CPNMS-PLUS100-ASF
Annual Support Fee for CPNMS-PLUS100-PL

CPNMS-PLUS500-ASF
Annual Support Fee for CPNMS-PLUS500-PL

Annual Subscription

(Includes License and Support Fee)

CPNMS-500-AL
Manage up to 500 Network Elements

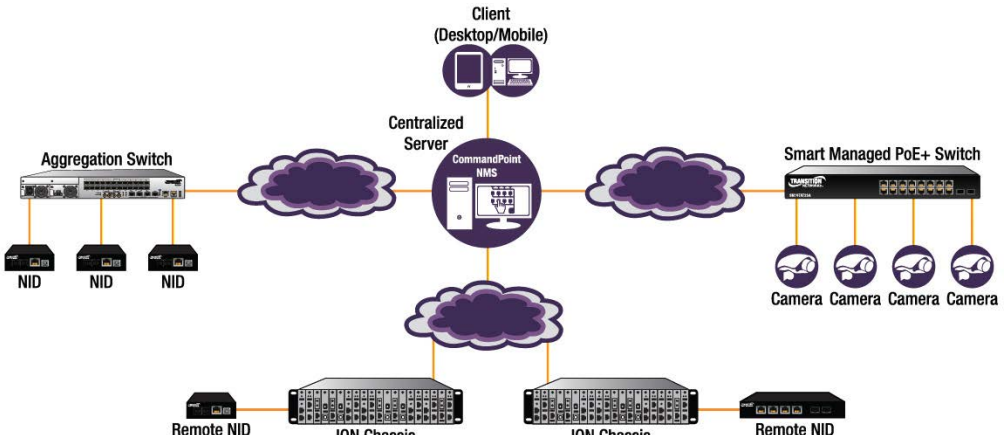
CPNMS-1000-AL
Manage up to 1,000 Network Elements

CPNMS-2000-AL
Manage up to 2,000 Network Elements

Add Network Elements

CPNMS-PLUS100-AL
Add 100 Network Elements

CPNMS-PLUS500-AL
Add 500 Network Elements



High Performance Fiber Optic Network Interface Cards

Transition Networks offers a vast portfolio of high-quality and cost-effective fiber based Network Interface Cards (NICs) that are designed to meet today's requirements for secure, high-speed network connectivity to workstations and servers.

With the ever increasing level of attention being paid to the security of the data in today's networks, all organizations can benefit from a fiber infrastructure. Long ago, government and military agencies developed a strong interest in fiber because of its ability to provide greater transmission distances, support increased bandwidth, and reduce the risks of security breaches of classified data in their networks. Fiber is able to protect the data traveling through a network due to its properties. It is virtually impossible to tap into fiber cabling and go undetected by network managers.

Fiber NICs from Transition Networks allow for a simple integration path wherever fiber is available at the workstation. The NICs include software drivers for today's most popular operating systems and support Fast Ethernet, Gigabit Ethernet, and 10 Gigabit Ethernet environments. Users can choose from a variety of interface bus technologies. PCI Express (PCIe) offers the ability to maximize bandwidth and bus efficiency while lowering power consumption on desktops. For laptop users, NICs supporting USB bus technology are also available for secure fiber connectivity for the mobile user. For small PCs, such as micros, minis, or thin clients, M.2 Fiber NICs are also available.

PCIe Fast Ethernet Fiber Network Interface Cards

100Base-FX

N-FXE-xx-02 Series is a Fiber Fast Ethernet to PCI-Express (PCIe) bus adapter that fully complies with all IEEE 802.3u and 100Base-FX standards. It provides up to 200Mbps full-duplex bandwidth capacity to support high-end systems. In addition, with advanced functions like VLAN filtering packet processing, the adapter provides added performance, flexible configuration and secure networking to users in a standards-based environment.

The PCI-Express (PCIe) design gives you the maximum possible bandwidth and bus efficiency, along with low power consumption.

For users equipped with PCI-Express systems, N-FXE-xx-02 Series provides the ability to easily build or connect to Fast Ethernet fiber networks.

Ordering Information

N-FXE-ST-02
100Base-FX 1300nm multimode (ST)
[2 km/1.2 mi.] Link Budget: 12.0 dB

N-FXE-SC-02
100Base-FX 1300nm multimode (SC)
[2 km/1.2 mi.] Link Budget: 12.0 dB

N-FXE-LC-02
100Base-FX 1300nm multimode (LC)
[2 km/1.2 mi.] Link Budget: 13.0 dB

N-FXE-MT-02
100Base-FX 1300nm multimode (MT-RJ)
[2 km/1.2 mi.] Link Budget: 12.0 dB

Features

- PCI-Express x1 Interface
- IEEE 802.3x Full-Duplex Flow Control
- Supports Multicast Frame Filtering
- Supports Asymmetric/Symmetric Flow control
- Supports IEEE 802.1Q VLAN tagging
- IPv6 Capable
- Wake-on-LAN (WoL) power management
- Microsoft certified drivers
- PXE remote boot support
- RoHS Compliance
- UEFI (PC platform BIOS must support)
- Message Signaled Interrupts (MSI)
- Extended Message Signaled Interrupts (MSI-X)
- TCP Segmentation Offload (large send v1 and large send v2 support)
- Available with SC, LC, and MT-RJ multimode fiber connectors
- Standard bracket attached, low-profile bracket included
- Compliant with PCIe Rev 1.1 interface
- Supports Jumbo Frame
- Supports ASF 2.0
- ACPI Supported

Specifications

Standards	IEEE 802.3u IEEE 802.3x IEEE 802.1Q
Bus Slot	PCIe 1.1
Status LEDs	LINK/ACT (Link/Activity): ON = communication link; FLASHING = activity on link FDX (Full-duplex): ON = Full-duplex link
Software Support	Windows 2003, 10, NT 4.0, Windows 2008 Server, Vista, Novell NetWare 5.x, 6.x, Linux
Boot Server Support	PXE Boot ROM
Dimensions	Depth: 4.25” [108 mm] Height: 2.70” [68.5 mm]
Power Consumption	1.2 Watts (max), +3.3 VDC @ 0.7A
Environment	Operating: 0°C to 50°C Storage: -15°C to 65°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	1 lb. [0.45 kg]
Certifications	EMI Standard, FCC Class B, CE Mark
Warranty	Lifetime

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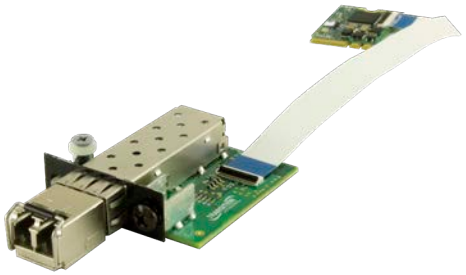
M.2 Fast Ethernet Fiber Network Interface Card for Dell OptiPlex™ 7040/7050 & Wyse 7000 Series

100Base-FX



Transition Networks M.2 Fast Ethernet Fiber Network Interface Card (NIC) provides a fiber optic interface for the Dell OptiPlex™ 7040 and 7050 Micro PC & Wyse 7000 Series Thin Clients. The NM2-FXS-2230-SFP-01 consists of a M.2 NIC that installs into the OptiPlex Micro PC's M.2 "A or E keyed" interface, a fiber optic adapter that installs into the OptiPlex Micro PC's Option port, and a 20-pin Flat Flex Cable (FFC) that connects the NIC to the fiber adapter. The fiber optic adapter is an open SFP with a 100Base-FX to SGMII SFP Module (included).

Ordering Information

NM2-FXS-2230-SFP-01
M.2 NIC, 100Base-FX to SGMII SFP media converter (included)

Features

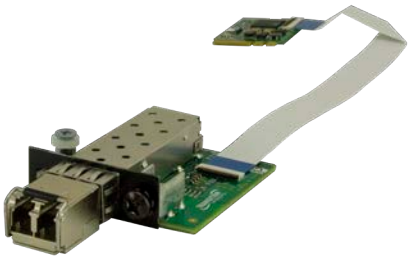
- PCI Express M.2 compliant
- A + E keyed M.2 interface
- Full duplex
- Flow control
- Wake on LAN (WOL)
- Smart Load Balancing (SLB)
- TCP Segmentation Offload (TSO)
- Message Signaled Interrupts (MSI)
- Extended Message-Signaled Interrupts (MSI-X)
- LACP support (Teaming)
- IPv6 Capable
- Supports UEFI
- Supports PXE boot
- Jumbo frame support 9014 bytes
- 100Base-FX to SGMII SFP interface

Specifications

Standards	IEEE 802.3-2012
Bus Slot	M.2 - '2230-D4-A-E'
Data Rate	100 Mbps (full duplex only)
Max Frame Size	9014 bytes
Status LEDs	LINK/ACT ON = Link Flashing = Activity
Dimensions (M.2 NIC)	2230-D4-A-E Width: 0.87" [22 mm] Depth: 1.18" [30 mm] Height: 0.12" [3.08 mm]
Dimensions (Fiber Interface)	Width: 1.65" [42 mm] Depth: 2.05" [52 mm] Height: 0.51" [13 mm]
Dimensions (FFC Cable)	Length: 2.99" [76 mm]
Software Support	Windows 10, 8, 8.1, and 7 (32/64 bit); Linux
Power Consumption	120mA @ 3.3V (0.4 Watts typical not including SFP module)
Power Consumption (SFP)	330mA @ 3.3V (1 Watt typical)
Power Source	M.2 interface connector: 3.3V (Refer to table 41 of M.2 Specification)
Environment	Operating: 0°C to +45°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	0.1 lbs. [0.05 kg]
Certifications	CE Mark; Emissions: EN55032, FCC Part 15 Class A; Immunity: EN55024
Warranty	Lifetime

M.2 Fast Ethernet Fiber Network Interface Card for Dell OptiPlex™ 7070 & 7060/5060/3060 Micro PCs

100Base-FX



Transition Networks M.2 Fast Ethernet Fiber Network Interface Card (NIC) provides a fiber optic interface for the Dell OptiPlex™ 7060, 5060, and 3060 Micro PCs. The NM2-FXS-2230-SFP-201 consists of a M.2 NIC that installs into the OptiPlex Micro PC's M.2 "A or E keyed" interface, a fiber optic adapter that installs into the OptiPlex Micro PC's Option port, and a 20-pin Flat Flex Cable (FFC) that connects the NIC to the fiber adapter. The fiber optic adapter is an open SFP with a 100Base-FX to SGMII SFP Module (included).

Ordering Information

NM2-FXS-2230-SFP-201
M.2 NIC, 100Base-FX to SGMII SFP media converter (included)

Features

- PCI Express M.2 compliant
- A + E keyed M.2 interface
- Full duplex
- Flow control
- Wake on LAN (WOL)
- Smart Load Balancing (SLB)
- TCP Segmentation Offload (TSO)
- Message Signaled Interrupts (MSI)
- Extended Message-Signaled Interrupts (MSI-X)
- LACP support (Teaming)
- IPv6 Capable
- Supports UEFI
- Supports PXE boot
- Jumbo frame support 9014 bytes
- 100Base-FX to SGMII SFP interface

Specifications

Standards	IEEE 802.3-2012
Bus Slot	M.2 - '2230-D4-A-E'
Data Rate	100 Mbps (full duplex only)
Max Frame Size	9014 bytes
Status LEDs	LINK/ACT ON = Link Flashing = Activity
Dimensions (M.2 NIC)	2230-D4-A-E Width: 0.87" [22 mm] Depth: 1.18" [30 mm] Height: 0.12" [3.08 mm]
Dimensions (Fiber Interface)	Width: 1.65" [42 mm] Depth: 2.05" [52 mm] Height: 0.51" [13 mm]
Dimensions (FFC Cable)	Length: 2.99" [76 mm]
Software Support	Windows 10, 8, 8.1, and 7 (32/64 bit); Linux
Power Consumption	120mA @ 3.3V (0.4 Watts typical without SFP module)
Power Consumption (SFP)	330mA @ 3.3V (1 Watt typical)
Power Source	M.2 interface connector: 3.3V (Refer to table 41 of M.2 Specification)
Environment	Operating: 0°C to +45°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	0.1 lbs. [0.05 kg]
Certifications	CE Mark; Emissions: EN55032, FCC Part 15 Class A; Immunity: EN55024
Warranty	Lifetime

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Scorpion-USB™ 2.0 to Fast Ethernet Fiber Adapter

100Base-FX

Use the Scorpion-USB™ Fast Ethernet fiber adapter to create an EMI-secure data connection between a USB port on a PC, laptop or tablet and a 100Mbps fiber Ethernet port on a switch. This unique USB to fiber adapter is ideal for use in applications where wireless transmission is not the preferred technology due to security concerns or where copper lacks the bandwidth, distance or security for sharing data-intensive files. The Scorpion-USB™ Fast Ethernet Fiber Adapter allows a computing device which does not have a fiber port to connect to a fiber-based Ethernet network through a USB 2.0 interface.

Designed specifically for laptop, notebook, and tablet PCs running today's most popular operating systems and deployed in fiber-rich networking environments, the Scorpion-USB™ Fast Ethernet fiber adapter allows a secure connection to a fiber based Fast Ethernet network through a USB 2.0 port. Just plug the adapter into the USB port, install the driver, and the connection is ready.

Ordering Information

TN-USB-FX-01(SC)
USB 2.0 to Ethernet 100Base-FX multimode (SC) [2 km/ 1.2 mi.] Link Budget: 11.0 dB

TN-USB-FX-01(LC)
USB 2.0 to Ethernet 100Base-FX multimode (LC) [2 km/ 1.2 mi.] Link Budget: 11.0 dB

TN-USB-FX-01(SFP)
USB 2.0 to Ethernet 100Base-FX Open SFP Slot

Optional Accessories (sold separately)

SFP Modules
Supports Fast Ethernet SFP Modules

Features

- Fast Ethernet fiber connection through a USB interface is more secure than copper or wireless transmission
- Bus powered device, no external power supply needed
- Advanced power saving mode to preserve PC battery life
- Multimode SC, LC, or industry standard SFP fiber port (SFP sold separately)
- LEDs to indicate USB Speed / Activity and fiber Link / Activity
- Plastic ABS enclosure with a 6" pigtail to USB type-A connector
- WHQL-certified drivers for Windows 7, 8, 8.1, and 10, as well as numerous other operating systems

Specifications

Standards	IEEE 802.3-2008 USB 2.0
Data Rates	USB 2.0 (Type-A connector): 480 MBps (3840 mbps) Fiber: 12.5 MBps (100 mbps)
Fiber Port	100Base-FX SC, LC, or SFP
Max Frame Size	1518 bytes (untagged)
Status LEDs	USB: Link / Activity Yellow: ON – High Speed, OFF – Low Speed, Flashing: Activity Fiber: Link / Activity Green: ON – Link, Flashing: Activity
Dimensions	SC & LC Versions Width: 2.2" [56 mm] Depth: 9.2" [233 mm] Height: 0.8" [20 mm] SFP Versions Width: 1.2" [30 mm] Depth: 10" [254 mm] Height: 1.0" [25 mm]
Software Support	Windows 7, 8, 8.1, and 10 and many others
Power Source	USB Bus
Power Consumption	1.12 Watts (SC: Typical) 0.9 Watts (LC: Typical)
Environment	Operating: 0°C to 50°C Storage: -20°C to +80°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft. (with derating)
Weight	1 lb. [0.45 kg]
MTBF	Greater than 200,000 MIL-HDBK-217F Hours
Certifications	EN55022 Class B, EN55024, FCC Class B, CE Mark
Warranty	Lifetime

PCIe Gigabit Ethernet Fiber Network Interface Cards

1000Base-SX

N-GXE-SC-02

The N-GXE-xx-02 Series is a Fiber Gigabit Ethernet to PCIe bus adapter that fully complies with all IEEE 802.3z and 1000Base-SX standards. It provides up to 2000 Mbps full-duplex bandwidth capacity to support high-end servers. In addition, with advanced functions like VLAN filtering packet processing, link aggregation, smart load balancing, failover, and Wake-on-LAN, the adapter provides enhanced performance, flexible configuration and secure networking for users in a standard-based environment. An LED indicator on the bracket displays link status, activity and speed.

Ordering Information

N-GXE-SC-02
1000Base-SX 850nm multimode (SC)
[62.5/125 µm fiber: 220 m/722 ft.]
[50/125 µm fiber: 550 m/1804 ft.]
Link Budget: 8.0 dB

N-GXE-LC-02
1000Base-SX 850nm multimode (LC)
[62.5/125 µm fiber: 220 m/722 ft.]
[50/125 µm fiber: 550 m/1804 ft.]
Link Budget: 8.0 dB

N-GXE-ST-02
1000Base-SX 850nm multimode (ST)
[62.5/125 µm fiber: 220 m/722 ft.]
[50/125 µm fiber: 550 m/1804 ft.]
Link Budget: 8.0 dB

N-GXE-SFP-02
100/1000Base-X open SFP fiber port
(SFP sold separately)

Optional Accessories (sold separately)

SFP Modules

Features

- Supports PCIe x1 bus
- High bandwidth 1000 Mbps network speed (100/1000 Mbps with Auto-Negotiation for SFP version)
- Supports full-duplex mode
- Supports IEEE 802.3x and IEEE 802.3z Full-Duplex Flow Control
- Compliant with PCIe Rev 2.1 Interface
- IEEE 802.1Q VLAN Support
- Link Aggregation Control Protocol (LACP)
- Link Aggregation Smart Switch
- Smart Load Balancing (SLB) and Failover
- Full Wake-on-LAN Support
- Advanced Power Management (APM) Support
- Advanced Configuration and Power Interface (ACPI) Specification v2.0c
- Magic Packet Wake-up enable
- Jumbo frames support up to 9014 bytes
- IPv4 and IPv6
- IPv4 checksum offloading TCP/UDP
- IPv6 support for IP/TCP and IP/UDP receive checksum offload
- Transmit Segmentation Offloading (TSO)
- Interrupt Handling
- Interrupt Throttling Control
- Legacy and Message Signaling Interrupt/Extension (MSI/MSI-X)
- Intelligent Interrupt Generation

Specifications

Standards	IEEE 802.3, 2006 Edition IEEE 802.3z IEEE 802.3x IEEE 802.1Q IEEE 802.3ad
Bus Slot	PCIe v2.1 x1
Status LEDs	Fixed Optic Versions: L/A On = Communication link Off = Link Fail Flash = Link OK and Activity Green = Full duplex, Yellow = Half duplex SFP Version: L/A On = Communication link Off = Link Fail Flash = Link OK and Activity Green = 1 Gbps; Yellow = 100 Mbps
Software Support	Windows 7, 8, 8.1,10 Pro, Linux, Windows Server 2008, 2008 R2, FreeBSD, 2012
Boot Server Support	PXE and UEFI Boot
Dimensions	Depth: 4.097" [104.064 mm] Height: 2.175" [55.245 mm]
Power Consumption	2.0W PCI-E / ~1 watt
Power Requirement	Fixed Optic Version: 0.87 Watts (approximately), 264 mA @ 3.3 VDC SFP Version: 1.66 Watts (approximately), 503mA @ 3.3 VDC
Environment	Operating: 0°C to 50°C Storage: -15°C to 65°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	0.55 lbs. [0.25 kg]
MTBF	N-GXE-xx-02 (-SC, –LC, -ST) 1246,176 Bellcore7 V5.0 Hours 658,260 Bellcore7 V5.0 Hours N-GXE-SFP-02 1246,176 Bellcore7 V5.0 (Hours) 658,260 Bellcore7 V5.0 (Hours)
Certifications	EN55022 Class B, EN55024, CE Mark, ROHS
Warranty	Lifetime

Features Continued

- Low Latency Interrupts
- PXE and UEFI Boot
- RoHS Compliance
- Standard bracket attached, low-profile bracket included
- Supports identification of NIC when multiple cards are installed

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PCIe Gigabit Ethernet Fiber Network Interface Card with PoE+

1000Base-X and 10/100/1000Base-T PoE+

The N-GXE-POE-xx-01 Series Network Interface Card (NIC) provides connectivity to a secure fiber network while also delivering power to a PoE powered device (PD), such as a VoIP phone with a copper UTP interface. It fully complies with all IEEE 802.3z and 1000Base-X standards, providing up to 2000 Mbps full-duplex bandwidth capacity.

Developed to support high-end users, this (2) port NIC has (1) 1000Base-X fiber network interface port (SFP version is 100/1000Base-X) and (1) switched 10/100/1000Base-T port supporting IEEE 802.3at PoE+ power. It is designed to allow a PC to power a VoIP phone, or any other traditional copper powered device, over a secure fiber network. Additionally, the NIC also has the ability to provide traffic switching functions between the copper and fiber ports, even when the PC is in a sleep mode.

Combining the functions of PC connectivity and VoIP phone connectivity into one device saves installation time, expense, and the space of having two devices at the desktop. When the VoIP traffic is filtered and prioritized by third-party devices like an Ethernet switch and the IP phone, this PoE NIC will pass all tagged traffic ensuring users experience a high level of Quality of Service (QoS). VLANs and Prioritization can also be configured at the NIC via Transition Networks' PoE NIC utility software.

Features

- High bandwidth 1000Mbps
- Supports Full-duplex Mode
- Supports IEEE 802.3x Full-Duplex Flow Control
- Supports PCIe x1 bus
- Compliant with PCIe Rev 2.1 Interface
- Supports Jumbo Frames
- Supports High Level VLAN Filtering Function
- IPv6 Capable
- Supports IP headers and TCP/UDP checksum offload
- Wake-on-LAN (WoL) power management
- PXE 2.1 Boot ROM Supported
- ACPI 2.0 Link Status LED for each port
- Driver Support
  - Windows 7
  - Windows 8, 8.1
  - Windows 10
  - Windows Server 2008
  - Windows Server 2012
  - Windows Vista
  - Linux
- Available with a fixed LC port or SC or an open SFP port

Specifications

Standards	IEEE 802.3-2000 IEEE 802.3z IEEE 802.3x IEEE 802.1Q IEEE 802.1p IEEE 802.3ab IEEE 802.3af IEEE 802.3at
MAC Address	8k MAC address table
Max Packet Size	Jumbo Frames, 10k bytes
Jumper Switches	Legacy PoE Energy Efficient Ethernet (EEE) enable/disable
Status LEDs	L/A Fiber Link/Activity PoE Power-over-Ethernet RJ-45 Upper Lf TP Link/Activity/Speed RJ-45 Upper Rt TP Duplex
Dimensions	Width: 4.8" [121.9 mm] Depth: 6.5" [165.1 mm] Height: 0.9" [22.86 mm]
Power Consumption	1.6 Watts (typical without PoE) 43.6 Watts (typical with PoE)
Voltage input	PCIe 3.3V 12V Peripheral connection for PoE
Power-over-Ethernet	Mode A Power
Environment	Operating: 0°C to 50°C Storage: -15°C to 65°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	2 lbs. [0.90 kg]
MTBF	Greater than 260,500 MIL-HDBK-217F Hours Greater than 716,375 Bellcore Hours
Certifications	Emission: EN55022 Class B, CE, UL Listed Immunity: EN55024
Warranty	Lifetime

Ordering Information

N-GXE-POE-LC-01
1000Base-SX 850nm multimode LC
[50/125 um fiber: 550 m/1804 ft.]
[62.5/125 um fiber: 220 m/722 ft.]
Link Budget: 8.0 dB
+ 10/100/1000Base-T PoE+ port
(includes optional low-profile bracket)

N-GXE-POE-SFP-01
100/1000Base-X Open SFP fiber slot,
+ 10/100/1000Base-T PoE+ port
(includes optional low-profile bracket)

N-GXE-POE-SC-01(L)
1000Base-SX 850nm multimode SC
[50/125 um fiber: 550 m/1804 ft.]
[62.5/125 um fiber: 220 m/722 ft.]
Link budget: 8.0dB
+ 10/100/1000Base-T PoE+
(includes low-profile bracket only)

N-GXE-POE-SC-01(S)
1000Base-SX 850nm multimode SC
[50/125 um fiber: 550 m/1804 ft.]
[62.5/125 um fiber: 220 m/722 ft.]
Link budget: 8.0dB
+ 10/100/1000Base-T PoE+
(includes standard bracket only)

Optional Accessories (sold separately)

SFP Modules

27246
Cable assembly, 4 pin Molex to ATX Power Cable Adapter

28582
4 pin Molex to SATA 15 pin Female Power Adapter

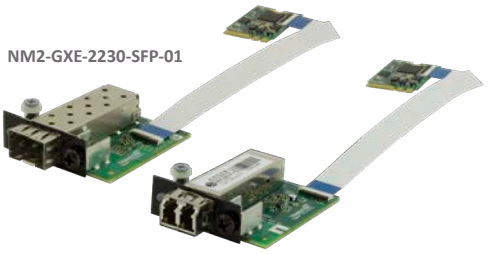
28583
6" SATA Power Y Splitter Cable Adapter-M/F

N-PoE-CBLKIT
3 piece cable kit for 12V power input connectivity options
(Includes 27246, 28582, 28583)

N-POE-EPC
Ethernet packet controller software utility used for VLAN configuration within the NIC.
Free download from transition.com

M.2 Gigabit Ethernet Fiber Network Interface Card for Dell OptiPlex™ 7040/7050 & Wyse 7000

1000Base-SX/X



Transition Networks M.2 Gigabit Ethernet Fiber Network Interface Card (NIC) provides a fiber optic interface for the Dell OptiPlex™ 7040 and 7050 Micro PCs and the Wyse 7000 Series thin clients. The NM2-GXE-2230-xx-01 Series consists of a M.2 NIC that installs into the OptiPlex Micro PC's M.2 "A or E keyed" interface, a fiber optic adapter that installs into the OptiPlex Micro PC's Option port, and a 20-pin Flat Flex Cable (FFC) that connects the NIC to the fiber adapter. The fiber optic adapter is available with either a 1000Base-SX LC optic or open SFP (SFP module sold separately).

Ordering Information

NM2-GXE-2230-LC-01
1000Base-SX 850nm multimode (LC)
[62.5/125 µm fiber: 220 m/722 ft.]
[50/125 µm fiber: 550 m/1804 ft.]
Link Budget: 8.0 dB

NM2-GXE-2230-SFP-01
1000Base-X Open SFP Slot

Optional Accessories (sold separately)

SFP Modules

Features

- PCI Express M.2 compliant
- A + E keyed M.2 interface
- Full duplex
- Flow control
- Wake on LAN (WOL)
- Smart Load Balancing (SLB)
- TCP Segmentation Offload (TSO)
- Message Signaled Interrupts (MSI)
- Extended Message-Signaled Interrupts (MSI-X)
- LACP support (Teaming)
- IPv6 Capable
- Supports UEFI
- Supports PXE boot
- Jumbo frame support 9014 bytes
- 1000Base-SX multimode LC fiber connector or open SFP interface

Specifications

Standards	IEEE 802.3-2012
Bus Slot	M.2 - '2230-D4-A-E'
Data Rate	1000 Mbps (full duplex only)
Max Frame Size	9014 bytes
Status LEDs	LINK/ACT ON = Link Flashing = Activity
Dimensions (M.2 NIC)	2230-D4-A-E Width: 0.87" [22 mm] Depth: 1.18" [30 mm] Height: 0.12" [3.08 mm]
Dimensions (Fiber Interface)	Width: 1.65" [42 mm] Depth: 2.05" [52 mm] Height: 0.51" [13 mm]
Dimensions (FFC Cable)	Length: 2.99" [76 mm]
Software Support	Windows 10, 8, 8.1, and 7 (32/64 bit); Linux
Power Consumption (LC)	250mA @ 3.3V (0.8 Watts typical)
Power Consumption (SFP)	120mA @ 3.3V (0.4 Watts typical without SFP module)
Power Source	M.2 interface connector: 3.3V (Refer to table 41 of M.2 Specification)
Environment	Operating: 0°C to +45°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	0.1 lbs. [0.05 kg]
Certifications	CE Mark; Emissions: EN55032, FCC Part 15 Class A; Immunity: EN55024
Warranty	Lifetime

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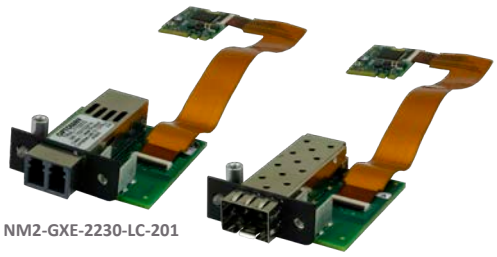
M.2 Gigabit Ethernet Fiber Network Interface Card for Dell OptiPlex™ 7070 & 7060/5060/3060 Micro PCs

1000Base-X



NM2-GXE-2230-LC-201

NM2-GXE-2230-SFP-201

Transition Networks M.2 Gigabit Ethernet Fiber Network Interface Card (NIC) provides a fiber optic interface for the Dell OptiPlex™ 7060, 5060, and 3060 Micro PCs. The NM2-GXE-2230-xx-201 Series consists of a M.2 NIC that installs into the OptiPlex Micro PC's M.2 "A or E keyed" interface, a fiber optic adapter that installs into the OptiPlex Micro PC's Option port, and a 20-pin Flat Flex Cable (FFC) that connects the NIC to the fiber adapter. The fiber optic adapter is available with either a 1000Base-SX LC connector or an open SFP (SFP module sold separately).

Ordering Information

NM2-GXE-2230-LC-201
1000Base-SX 850nm multimode (LC)
[62.5/125 µm fiber: 220 m/722 ft.]
[50/125 µm fiber: 550 m/1804 ft.]
Link Budget: 8.0 dB

NM2-GXE-2230-SFP-201
1000Base-X Open SFP Slot

Optional Accessories (sold separately)

SFP Modules

Features

- PCI Express M.2 compliant
- A + E keyed M.2 interface
- Full duplex
- Flow control
- Wake on LAN (WOL)
- Smart Load Balancing (SLB)
- TCP Segmentation Offload (TSO)
- Message Signaled Interrupts (MSI)
- Extended Message-Signaled Interrupts (MSI-X)
- LACP support (Teaming)
- IPv6 Capable
- Supports UEFI
- Supports PXE boot
- Jumbo frame support 9014 bytes
- 1000Base-X open SFP interface

Specifications

Standards	IEEE 802.3-2012
Bus Slot	M.2 - '2230-D4-A-E'
Data Rate	1000 Mbps (full duplex only)
Max Frame Size	9014 bytes
Status LEDs	LINK/ACT ON = Link Flashing = Activity
Dimensions (M.2 NIC)	2230-D4-A-E Width: 0.87" [22 mm] Depth: 1.18" [30 mm] Height: 0.12" [3.08 mm]
Dimensions (Fiber Interface)	Width: 1.65" [42 mm] Depth: 2.05" [52 mm] Height: 0.51" [13 mm]
Dimensions (FFC Cable)	Length: 2.99" [76 mm]
Software Support	Windows 10, 8, 8.1, and 7 (32/64 bit); Linux
Power Consumption (LC)	250mA @ 3.3V (0.8 Watts typical)
Power Consumption (SFP)	120mA @ 3.3V (0.4 Watts typical without SFP module)
Power Source	M.2 interface connector: 3.3V (Refer to table 41 of M.2 Specification)
Environment	Operating: 0°C to +45°C Storage: -40°C to 85°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.
Weight	0.1 lbs. [0.05 kg]
Certifications	CE Mark; Emissions: EN55032, FCC Part 15 Class B; Immunity: EN55024
Warranty	Lifetime

Scorpion-USB™ 3.0 to Gigabit Ethernet Fiber Adapter

1000Base-SX

Use the Scorpion-USB™ 3.0 Gigabit Ethernet Fiber Adapter to create an EMI-secure data connection between a USB port on a PC, laptop or tablet and a 1000Mbps Ethernet fiber port on a switch. This unique USB to fiber adapter is ideal for use in applications where wireless transmission is not the preferred technology due to security concerns or where copper lacks the bandwidth, distance or security for sharing data-intensive files. The Scorpion-USB Gigabit Ethernet Fiber Adapter allows a computing device which does not have a fiber port to connect to a fiber-based Ethernet network through its USB interface quickly, reliably and securely.

Designed specifically for laptop, notebook, and tablet PCs running today's most popular operating systems and deployed in fiber-rich networking environments, the Scorpion-USB Gigabit Ethernet Fiber Adapter allows a secure connection to a fiber based Gigabit Ethernet network through a USB 3.0 port. Just plug the adapter into the USB port, install the driver, and the connection is ready.

Features

- Gigabit Ethernet fiber connection through USB 3.0 interface accommodates high bandwidth services faster, further and more securely than copper or wireless transmission
- Bus powered device, no external power supply needed
- Multimode SC, LC, or industry standard SFP fiber port
- SFP version supports dual speed 100/1000Mbps SFP Modules
- LEDs to indicate USB Speed / Activity and fiber Link / Activity
- Supports IEEE 802.1Q VLAN tagging
- Plastic ABS enclosure with a 9" pigtail to USB type-A connector
- WHQL-certified drivers for Windows 7, 8, 8.1, 10; Linux and MacIntosh 10.6 to 10.11 drivers also available

Specifications

Standards	IEEE 802.3-2008 IEEE 802.1Q USB 3.0
Data Rates	USB 3.0 (Type-A connector): 625 MBps (5000 mbps) Fiber: 125 MBps (1000 mbps)
Fiber Port	1000Base-SX SC or LC 100/1000Base-X SFP
Max Frame Size	1518 bytes (untagged)
Status LEDs	USB: Speed / Activity Green: ON – USB 3.0 Yellow: ON – USB 2.0 Green & Yellow: OFF – USB Down Fiber: Speed / Activity Green – Link @ 1000Mbps, Yellow – Link @ 100Mbps, Flashing – Activity
Dimensions	Width: 2.09" [56 mm] Depth: 12.25" [233 mm] Height: 1" [20 mm]
Software Support	Windows 7, 8, 8.1, 10, Linux, and Macintosh 10.6 to 10.11
Power Source	USB Bus
Power Consumption	2.1 Watts (LC: Typical) 2.18 Watts (SC: Typical) 3.15 Watts max (SFP: MSA compliant supporting up to a 1 Watt module)
Environment	Operating: 0°C to 50°C Storage: -20°C to +80°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft. (with derating)
Weight	0.35 lbs. [0.16 kg]
Certifications	EN55032 Class A, EN55024, FCC Part 15, Subpart B, Class A, CE Mark
Warranty	Lifetime

Ordering Information

TN-USB3-SX-01(SC)
USB 3.0 to Ethernet 1000Base-SX multimode (SC) [62.5/125 µm: 220 m/722 ft.] [50/125 µm: 550 m/1804 ft.]
Link Budget: 7.5 dB

TN-USB3-SX-01(LC)
USB 3.0 to Ethernet 1000Base-SX multimode (LC) [62.5/125 µm: 220 m/722 ft.] [50/125 µm: 550 m/1804 ft.]
Link Budget: 7.0 dB

TN-USB3-SFP-01
USB 3.0 to Ethernet 100/1000Base-X Open SFP Slot

Optional Accessories (sold separately)

SFP Modules
Supports Fast or Gigabit Ethernet SFP Modules
Data rate is limited to specific SFP chosen

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PCIe 10 Gigabit Ethernet Fiber Network Interface Card

1000Base-X/10GBase-SR/LR SFP+

The N-TGE-SFP-02 is a Fiber 10Gigabit Ethernet to PCIe bus adapter that supports a 1Gbps/10Gbps link and fully complies with IEEE 802.z and 802.3ae standards. The open SFP slots can be used with 1000Base-X SFPs or 10GBase-SR/LR SFP+ modules. The NIC provides up to 20 Gbps full-duplex bandwidth capacity to support high-end servers. In addition, with advanced functions like VLAN filtering packet processing, link aggregation and smart load balancing, the adapter provides enhanced performance, flexible configuration and secure networking for users in a standard-based environment. The NIC is suitable for high resolution or high speed data transfer, fiber-to-the-desk, data center, SMB and cloud computing applications. Two LED indicators (LINK/ACT and SPEED) per port on the bracket will help to oversee the board link, activity status and connection speed.

Ordering Information

N-TGE-SFP-02
(2) 1000Base-X/10GBase-SR/LR SFP+ slots (empty)

Optional Accessories (Sold Separately)

SFP Modules

Features

- High bandwidth 10Gbps network speed
- Supports 1Gbps SFPs with DMI
- Supports IEEE 802.3x Full-Duplex flow control
- IPv4 and IPv6
- Compliant with PCIe 3.0x8 interface
- Supports Jumbo Frames - 9014 and 4088 byte options in Windows>Advanced Properties tab
- Supported transmission distance based on the SFP/SFP+ modules and fiber type used (1Gbps SFP modules must support DMI)
- Supports IEEE 802.3ad Link Aggregation (LACP)
- IEEE 802.1Q VLAN support
- IEEE 802.1p QoS
- Checksum offload (IP/TCP/UDP)
- Teaming
  - Adapter Fault Tolerance (AFT)
  - Adaptive Load Balancing (ALB)
  - IEEE 802.3ad Dynamic Link Aggregation
  - Switch Fault Tolerance (SFT)
  - Static Link Aggregation (SLA)
  - Virtual Machine Load Balancing (VMLB)

Specifications

Standards	IEEE 802.3-2008 IEEE 802.3z IEEE 802.3ad IEEE 802.1p	IEEE 802.3ae IEEE 802.3x IEEE 802.1Q
Bus Slot	PCIe 3.0 x8	
Cable	Fiber (multimode): 50/125,62.5/125µm Fiber (single mode): 9/125µm	
Data Rate	10 Gbps: 14,880,000 pps 1 Gbps: 1,190,476 pps	
Status LEDs	LINK/ACT (Link/Activity): On = communication link Flashing = activity on link Off = link fail SPEED: On = 10G, Off = 1G	
Software Support	Windows 10 Professional Windows 8 Professional *Windows 7 Professional *Windows Server 2008 R2 Windows Server 2019 Windows Server 2016 Windows Server 2012 and 2012 R2 Linux Support *Requires Intel Network Connections Software v25.0 or earlier)	
Dimensions	Width: 2.525” [64.135 mm] Depth: 6.173” [156.79 mm] Height: 0.75” [19.05 mm]	
Power Consumption	2.5 Watts without SFPs	
Environment	Operating: 0°C to +50°C Storage: -15°C to 65°C Humidity: 5% to 95% (non-condensing) Altitude: 0 – 10,000 ft.	
Weight	0.55 lbs. [0.25 kg]	
MTBF	4,636,228 hours	
Certifications	EN 55032-2012/AC:2013 FCC 47 CFR Part 15 Subpart B ISED ICES-003 Issue 6:2016, Updated April 2019 Class B EN 55024:2010/A1:2015 EN 61000-3-2:2014 (<16A) EN 61000-3-3:2013 (16A) CE Mark	
Warranty	Lifetime	

Features Continued

- Virtualization/Hypervirtualization
- SR-IOV
- RSS/TSS
- MSI/MSI-X
- LED status indicator
- Supports PXE remote, remote boot
- RoHS compliance
- Standard bracket attached, low-profile bracket included

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, some are also Cisco, HP and Juniper compatible and support a variety of data speeds and distance requirements.

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.

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

Features

- Small Form-Factor Pluggable (SFP) MSA Compliant
- Compliant with 100Base-FX
- Single +3.3V Power Supply
- RoHS 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
Certifications	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.

MSA Compliant 100Base/OC3 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.

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
UL Listed

TN-SFP-OC3M(850)
100Base-FX/OC-3 850nm multimode (LC) with DMI [500 m/0.31 mi.] Link Budget: 8.0 dB

TN-SFP-GE-100FX
*100Base-FX 1310nm multimode (LC) with DMI [2 km/1.2 mi.] Link Budget: 10.0 dB

*Provides 100Base-FX interface when plugged into a Gigabit SGMII SFP slot

Features

- Hot-Pluggable SFP Footprint Optical Transceiver
- Digital Diagnostic Function
- 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
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11 UL (specific SKUs only)
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.

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
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Compliant with 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 IEEE 802.3ah
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 Storage: -40°C to 85°C TN-GLC-xxx-RGD Operating: -40°C to 85°C Storage: -40°C to 100°C
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11 UL (specific SKUs only)
Warranty	Lifetime

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.

Ordering Information

Duplex

TN-GLC-FE-100FX
100Base-FX 1300nm multimode (LC) [2 km/1.2 mi.] Link Budget: 8.5 dB; UL Listed

TN-GLC-FE-100LX
100Base-FX 1310nm single mode (LC) [10 km/6.2 mi.] Link Budget: 19.0 dB; UL Listed

***TN-GLC-GE-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.

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.

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; UL Listed

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

Features

- Hot-Pluggable SFP Footprint Optical Transceiver
- Digital Diagnostic Function
- 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
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11 UL (specific SKU only)
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.

MSA Compatible CWDM SFP Modules

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

TN-SFP-OC3S8-C55

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

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 (λ_c)

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

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Footprint Duplex LC Optical Transceiver
- Digital Diagnostic Function (DMI)
- 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 SONET OC-3/SDH STM-1 (S-1.1)
Output Wavelength	-5.5nm < λc < +7.5nm
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
Certifications	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.

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MSA Compliant 1000Base Fiber Channel SFP Modules

1000Base-SX Multimode (LC)

TN-SFP-SX

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
- 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
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11 UL (specific SKU only)
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; UL Listed

TN-SFP-SX-PK
Pack of (20) TN-SFP-SX Modules

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

Cisco Compatible Gigabit SFP Modules

1000Base-SX Multimode (LC)

TN-GLC-SX-MM

Features

- Extended operating temperature -40°C to +85°C (TN-GLC-xxx-RGD Modules 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 Storage: -40°C to 85°C TN-GLC-SX-MM-xx-RGD Operating: -40°C to 85°C
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11 UL (specific SKUs only)
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 µm: 220 m/722 ft.]
[50/125 µm: 550 m/1804 ft.]
Link Budget: 8.5 dB; UL Listed

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

TN-GLC-SX-MMD
1000Base-SX 850nm multimode (LC) with DMI [62.5/125 µm: 220m/722ft.]
[50/125µm: 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 µm: 220 m/722 ft.]
Link Budget: 8.5 dB
[50/125 µm: 550 m/1804 ft.]
Link Budget: 8.5 dB; UL Listed

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

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.

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

Features

- Small Form-Factor Pluggable (SFP) MSA Compliant
- Compliant with 1000Base-SX/LX
- Single +3.3V Power Supply
- RoHS Compliant

Specifications

Standards	IEEE 802.3 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
Certifications	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.

HP Compatible SFP Modules

1000Base-X (LC)

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

Ordering Information

Duplex

TN-J4858C
1000Base-SX 850nm (LC) multimode
[62.5/125 µm fiber: 220 m/722 ft.]
[50/125 µm 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

Features

- Hot-Pluggable SFP Optical Transceiver with Duplex LC Connector
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Compliant with 1000Base-SX (TN-J4858C Module Only)
- Compliant with 1000Base-LX (TN-J4859C Module Only)

Specifications

Standards	IEEE 802.3 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
Certifications	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.

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Hardened Cisco Compatible Gigabit SFP Modules

1000Base-X (LC) With DMI

TN-SFP-GE-L

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
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11 UL (specific SKUs only)
Warranty	Lifetime

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.

Ordering Information

Duplex

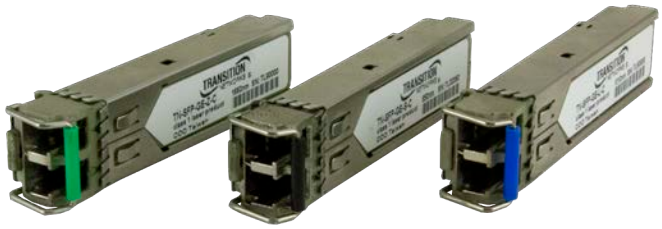
TN-SFP-GE-S
1000Base-SX 850nm multimode (LC) with DMI [62.5/125 µm: 220 m/722 ft.]
Link Budget: 8.5 dB
[50/125 µm: 550 m/1804 ft.]
Link Budget: 8.5 dB; UL Listed

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

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

Hardened Cisco Compatible Gigabit SFP Modules with Conformal Coating

1000Base-X (LC) With DMI



Features

- Extended operating temperature -40°C to +85°C
- Compliant with IEEE 802.3z Gigabit Ethernet Standard
- SFF-8472 Digital Diagnostic Function (DMI)
- With Conformal Coating
- Comply to EIA-364-65B Class IIIA

Specifications

Standards	IEEE 802.3z
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
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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

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

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

MSA Compliant 1000Base Fiber Channel SFP Modules

1000Base-SX Multimode (LC) With DMI

TN-SFP-ESX5

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

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

Features

- Hot-Pluggable SFP Footprint Optical Transceiver
- Digital Diagnostic Function
- 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
Certifications	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.

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 Storage: -40°C to 85°C TN-GLC-xxx-RGD Operating: -40°C to 85°C Storage: -40°C to 100°C
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11 UL (specific SKUs only)
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; UL Listed

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; UL Listed

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; UL Listed

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; UL Listed

TN-GLC-LHX-SM-RGD
1000Base-LX 1310nm single mode (LC) with DMI [40km/24/9 mi.]
Link Budget: 22.0 dB

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
- 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)
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11 UL (specific SKU only)
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, UL Listed

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-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

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.

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 (λ_c)

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

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Optical Transceiver With Duplex LC Connector
- Digital Diagnostic Function (DMI)
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Single +3.3V Power Supply
- RoHS Compliant
- Compliant with 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 < λc < +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
Certifications	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.

MSA Compatible CWDM SFP Modules

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

TN-SFP-LX8-C57T TN-SFP-LX8-C47 TN-SFP-LX8-C49

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 Footprint Duplex LC Optical Transceiver
- Digital Diagnostic Function (DMI)
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Compliant with Fiber Channel 1X SM-LC-L FC-PI

Specifications

Standards	IEEE 802.3 2003 IEEE 802.3z ANSI X3.297-1997
Output Wavelength	-5.5nm < λc < +7.5nm
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)
Certifications	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 (l_c)

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

Cisco Compatible CWDM SFP Modules

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

TN-CWDM-SFP-1450

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

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 (λ_c)

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

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Optical Transceiver With Duplex LC Connector
- Digital Diagnostic Function (DMI)
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Single +3.3V Power Supply
- RoHS Compliant
- Compliant with 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 < λc < +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
Certifications	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.

Cisco Compatible Gigabit SFP Modules

1000Base-LX Single Mode (LC) With DMI

TN-GLC-ZX-SM-RGD

Features

- Extended operating temperature -40°C to +85°C (TN-GLC-ZX-SM-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 Storage: -40°C to 85°C TN-GLC-ZX-SM-RGD Operating: -40°C to 85°C Storage: -40°C to 100°C
Certifications	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

MSA Compatible CWDM SFP Modules

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

TN-SFP-LX16-C55

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 Footprint Duplex LC Optical Transceiver
- Digital Diagnostic Function (DMI)
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Compliant with 1000Base-ZX
- 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 IEEE 802.3z ANSI X3.297-1997
Output Wavelength	-5.5nm < λc < +7.5nm
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
Certifications	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 (λc)

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

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

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

TN-10GSFP-LR4M TN-10GSFP-LR8M

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: 22.0 dB

Features

- SFP+ Optical Transceiver
- 10G Small Form-Factor Pluggable (SFP+) MSA Compliant
- SFF-8472 Digital Diagnostic Function (DMI)
- 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
- Compliant with 10GBase-LR
- Compliant with 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
Certifications	IEC-60825, FAD 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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

10GBase-SR/1000Base-SX, SFP+ With DMI Multimode (LC)

Ordering Information

Duplex

TN-10GSFP-SRM
10Gbase-SR/1000Base-SX, SFP+ with DMI
850nm multimode (LC)
[300/82/33m; 985/269/108 ft.]
Link Budget: 4.0 dB

Note: Distance up to 300m on 50/125 OM3 multimode fiber, up to 82m 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.

Features

- SFP+ Optical Transceiver
- 10G Small Form-Factor Pluggable (SFP+) MSA Compliant
- SFF-8472 Digital Diagnostic Function (DMI)
- 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
- Compliant with 10GBase-SR
- Compliant with 1000Base-SX

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
Certifications	IEC-60825, FAD 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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

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

TN-10GSFP-LR8M-C47

Features

- SFP+ Optical Transceiver
- 10G Small Form-Factor Pluggable (SFP+) MSA Compliant
- SFF-8472 Digital Diagnostic Function (DMI)
- SFF-8431 and SFF-8432 Compliant
- Maximum link length of 80 km
- Single +3.3 V Power Supply
- Up to 10.5 Gbps bidirectional data links
- RoHS Compliant
- Compliant with 1000Base-ZX
- Compliant with 10GBase-ZR

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
Certifications	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) [80 km/49.7 mi.]
Link Budget: 22.0 dB

xx = center wavelength (lc)
47 = 1470nm
49 = 1490nm
51 = 1510nm
53 = 1530nm
55 = 1550nm
57 = 1570nm
59 = 1590nm
61 = 1610nm

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

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

TN-10GSFP-LR4M-D47

TN-10GSFP-LR8M-D49

Ordering Information

Duplex

TN-10GSFP-LR8M-Dxx
10GBase-ZR/1000Base-ZX, SFP+ with DMI single mode (LC) [80 km/49.7 mi.]
Link Budget: 22.0 dB

TN-10GSFP-LR4M-Dxx
10GBase-ER/1000Base-LX, SFP+ with DMI single mode (LC) [40 km/24.9 mi.]
Link Budget: 15.0 dB

Features

- SFP+ Optical Transceiver with duplex LC connector
- 1G/10G Small Form-Factor Pluggable (SFP+) MSA compliant
- Compliant with 10GBase-ER/ZR
- Compliant with 1000Base-LX/ZX
- SFF-8472 Digital Diagnostic Function (DMI)
- SFF-8431 and SFF-8432 Compliant
- Maximum Link Length of 80KM
- Single +3.3 V Power Supply
- Lower power dissipation < 1.5 Watts
- RoHS Compliant

Specifications

Standards	IEEE 802.3 IEEE 802.3ae 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: 0°C to 70°C Operating: -40°C to 85°C
Certifications	IEC 60825-1, FDA CDRH 21-CFR 1040.10 Class 1
Warranty	Lifetime

xx = Channel

xx	Wavelength (nm)	Frequency (THZ)	xx	Wavelength (nm)	Frequency (THZ)
21	1560.61	192.10	41	1544.53	194.10
22	1559.76	192.20	42	1543.73	194.20
23	1558.98	192.30	43	1542.94	194.30
24	1558.17	192.40	44	1542.14	194.40
25	1557.36	192.50	45	1541.35	194.50
26	1556.55	192.60	46	1540.56	194.60
27	1555.75	192.70	47	1539.77	194.70
28	1554.94	192.80	48	1538.98	194.80
29	1554.13	192.90	49	1538.19	194.90
30	1553.33	193.00	50	1537.40	195.00
31	1552.52	193.10	51	1536.61	195.10
32	1551.73	193.20	52	1535.82	195.20
33	1550.92	193.30	53	1535.04	195.30
34	1550.12	196.40	54	1534.25	195.40
35	1549.32	193.50	55	1533.47	195.50
36	1548.51	193.60	56	1532.68	195.60
37	1547.72	193.70	57	1531.90	195.70
38	1546.92	193.80	58	1531.12	195.80
39	1546.12	193.90	59	1530.33	195.90
40	1545.32	194.00	60	1529.55	196.00

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 (DMI)
- Single +3.3 V Power Supply
- Up to 10.5 Gbps bidirectional data links
- RoHS Compliant
- Compliant with 10GBase-SR/SW (TN-10GSFP-SRx Modules Only)
- Compliant with 10GBase-LR/LW (TN-10GSFP-LR1x Modules Only)
- 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
Certifications	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

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.

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 10GBase-SR/LR/LRM
- SFF-8472 Digital Diagnostic Function (DMI)
- Single +3.3V Power Supply
- RoHS Compliant

Specifications

Standards	IEEE 802.3z IEEE 802.3 IEEE 802.3ae
Output Wavelength	-5.5nm < λc < +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
Certifications	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 HP SFP+ based routers and switches, as well as HP's IOS software. Transition Networks SFP+ modules ARE NOT HP 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

*Note: Distance up to 300m on 50/125 OM3 multimode fiber, up to 82m 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.

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 10GBase-SR/LR/LRM
- SFF-8472 Digital Diagnostic Function (DMI)
- Single +3.3V Power Supply
- RoHS Compliant

Specifications

Standards	IEEE 802.3z IEEE 802.3 IEEE 802.3ae
Output Wavelength	-5.5nm < λc < +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
Certifications	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 HP SFP+ based routers and switches, as well as HP's IOS software. Transition Networks SFP+ modules ARE NOT HP 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: 14.1dB

*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.

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 10GBase-SR/LR/LRM
- SFF-8472 Digital Diagnostic Function (DMI)
- Maximum Link Length of 100 km
- Single +3.3V Power Supply
- RoHS Compliant

Specifications

Standards	IEEE 802.3z IEEE 802.3 IEEE 802.3ae
Output Wavelength	-5.5nm < λc < +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
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11 UL (specific SKUs only)
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; UL Listed

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; UL Listed

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/OM4 multimode fiber, up to 82 m for 50/125 um multimode fiber with model.

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

Cisco Compatible CWDM SFP+ Modules

10GBase-ER/EW/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.

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 (λ)

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

Features

- Compliant with 10GBase-ER/EW
- SFF-8472 Digital Diagnostic Function (DMI)
- Maximum Link Length of 40 km
- RoHS Compliant
- SFP+ Optical Transceiver with duplex LC connector
- Single +3.3 V Power Supply

Specifications

Standards	IEEE 802.3ae
Output Wavelength	-5.5nm < λc < +7.5nm
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
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-CWDM-40G-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.

MSA Compatible CWDM XFP Modules

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

TN-XFP-LR4-C49

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

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 (λ_c)

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	

Features

- Coarse Wavelength Division Multiplexing (CWDM) ITU Grid Compliant Wavelengths
- Hot-Pluggable SFP Footprint Duplex LC Optical Transceiver
- Digital Diagnostic Function (DMI)
- Compliant with SFP Multi-Sourcing Agreement (MSA)

Specifications

Standards	IEEE 802.3 2003 ANSI X3.297-1997
Output Wavelength	-5.5nm < λc < +7.5nm
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
Certifications	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.

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Cisco Compatible CWDM SFP+ Modules

10GBase-ZR/ZW/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.

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 (l_c)

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

Features

- Compliant with 10GBase-ZR/ZW
- SFF-8472 Digital Diagnostic Function (DMI)
- Maximum Link Length of 80 km
- RoHS Compliant
- SFP+ Optical Transceiver with duplex LC connector
- Single +3.3 V Power Supply

Specifications

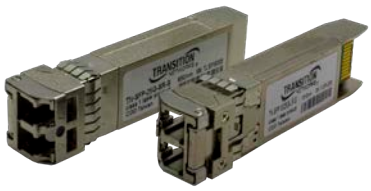
Standards	IEEE 802.3ae
Output Wavelength	-5.5nm < λc < +7.5nm
Dimensions	Width: 0.52" [13 mm] Depth: 2.18" [55 mm] Height: 0.33" [8 mm]
Power Input	+5V, 3.3V
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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.

Cisco Compatible 10G/25GBase SFP28 Modules

10G/25GBase-X, SFP28 With DMI (LC)



Applications: 25G Ethernet and Fiber Channel for Data Center eCPRI for 5G Fronthaul/Backhaul.

Ordering Information

Duplex

TN-SFP-25G-SR-S
10G/25GBase-SR, SFP28 with DMI 850nm multimode (LC) [100/70 m; 328/230 ft.]
Link Budget: 1.9 dB
*Distance up to 100m on 50/125 OM4 multimode fiber, up to 70 m for 50/125 um OM3 multimode fiber.

TN-SFP-10/25G-LR-S
10G/25GBase-LR, SFP28 with DMI 1310nm single mode (LC) [10 km / 6.2 mi.]
Link Budget: 8.3 dB

Features

- SFP28 Optical Transceiver with LC connector
- MSA Compliant
- Compliant with 10GBase-xR
- Compliant with 25GBase-xR
- Compliant with 5G eCPRI
- Single +3.3V Power Supply
- Power dissipation < 1.2 Watts
- Compliant with SFF-8431
- Compliant with SFF-8472
- RoHS Compliant

Specifications

Standards	IEEE 802.3z IEEE 802.3 IEEE 802.3ae IEEE 802.3CC
Output Wavelength	-5.5nm < λc < +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
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

Note: The Transition Networks TN-SFP-xx25G-xR-S Series 25G SFP28 transceiver modules are designed to install in any SFP28 port allowing for 25G/10GBase-X interfaces to the network through the SFP28 connector. The TN-SFP-xx25G-xR-S transceivers are Cisco Compliant* and are designed for bi-directional serial-optical data communication such as 25G Ethernet at speeds up to 26.5 Gbps.

*Transition Networks' SFP28 modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our SFP28 modules to be used in all other MSA compliant SFP28 platforms. In addition, Transition Networks SFP28 modules are also Compliant with all Cisco SFP28 based routers and switches, as well as Cisco's IOS software. Transition Networks SFP28 modules ARE NOT Cisco OEM brand module.

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
- Digital Diagnostic Monitoring
- Low Power Dissipation : SR4< 1.5 Watts, all other modules < 3.5 Watts
- 40GBase-SR4: 4 lanes, up to 11.1Gbps per lane, Standard MPO connector
- 40GBase-LR4 & 40GBase-LR4-3: 4 wavelength CWDM Mux/ Demux design, up to 11.1Gbps per wavelength, Duplex LC connector
- 40GBase-SR-BD: two transmit/ receive channels, 20Gbps each channel, 850 - 900nm wavelength range, Duplex LC connector
- 40GBase-IR4: 4 wavelength CWDM Mux/Demux design, up to 11.1Gbps per wavelength, Duplex LC connector

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
Certifications	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, Transition Networks QSFP+ modules are also Compliant with all Cisco QSFP+ based routers and switches, as well as Cisco’s IOS software. Transition Networks 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-SR-BD
QSFP+ 40GBase-SR-BD, 850nm/900nm multimode (LC)
[150m/492ft. on OM4, 100m/328ft. on OM3] Link Budget: 3.0 dB

TN-QSFP-40G-IR4
QSFP+ 40GBase-IR4, 1271nm, 1291nm, 1311nm, 1331nm, single mode (LC)
[2km/1.24mi.] with DMI
Link Budget: 6.7 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

Cisco Compliant 100G QSFP28

QSFP28 100GBase-X With DMI

The Transition Networks TN-QSFP-100G Series QSFP28 optical transceivers are hot-swappable pluggables that can be installed in any QSFP28 port for 100 Gigabit Ethernet connections. The new generation of 100G transceiver solutions, which are compliant with the IEEE 802.3bm standard, offer customers a wide selection of high-density, compact footprint and low-power 100G Ethernet connectivity options.

Application includes: data center, high-performance computing network, core network

Features

- Hot-pluggable QSFP28 form factor
- High capacity: up to 103.1 Gbps
- QSFP28 MSA Compliant
- Single 3.3V Power Supply
- Power dissipation < 3.5 Watts
- Digital Diagnostic Monitoring
- RoHS Compliant
- 100GBase-SR4: 4 x 25 Gbps, 850nm, Multimode, 100 m over OM4, MPO
- 100GBase-LR4: 4 x 25 Gbps, WDM wavelength, Single Mode, 10 km, Duplex LC
- 100GBase-CWDM4 MSA: 4 x 25Gbps, WDM wavelength, Single Mode, 2 km, Duplex LC

Specifications

Standards	IEEE 802.3bm 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
Certifications	IEC 60825-1, FDA CDRH 21-CFR 1040.10 Class 1
Warranty	Lifetime

*Transition Networks' QSFP28 modules fully comply with the Multi-Sourcing Agreement (MSA). This compliance allows our QSFP28 modules to be used in all other MSA compliant QSFP28 platforms. In addition, Transition Networks QSFP28 modules are also Compliant with all Cisco QSFP28 based routers and switches, as well as Cisco's IOS software. Transition Networks QSFP28 modules ARE NOT Cisco OEM brand modules.

Ordering Information

Duplex

TN-QSFP-100G-SR4
QSFP28 100GBase-SR4, 850nm multimode (MPO) [100 m/328 ft. on OM4] [70 m/229 ft. on OM3] with DMI Link Budget: 2.3 dB

TN-QSFP-100G-LR4
QSFP28 100GBase-LR4, 1295nm, 1300nm,1304nm, 1309nm, single mode (LC) [10 km/6.2 mi.] with DMI Link Budget: 6.3 dB

TN-QSFP-100G-CWDM4
QSFP28 100GBase-LR4, 1295nm, 1300nm,1304nm, 1309nm, single mode (LC) [2 km/1.2 mi.] with DMI Link Budget: 6.3 dB

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.

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

Features

- Hot-Pluggable SFP Footprint Optical Transceiver
- Digital Diagnostic Function
- 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
Certifications	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.

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.

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

Features

- Hot-Pluggable SFP Footprint Duplex LC Optical Transceiver
- Compliant with SFP Multi-Sourcing Agreement (MSA)
- Compliant with Intermediate-Reach SONET OC-3/SDH STM-1 (S-1.1)

Specifications

Standards	IEEE 802.3 IEEE 802.3ah
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 Storage: -40°C to 85°C
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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.

MSA Compliant 100Base/OC3 SFP Modules

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

TN-SFP-OC3SB22

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

Ordering Information

Simplex

TN-SFP-OC3SB21
100Base-FX 1310nm TX/1550nm RX single fiber 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 fiber single mode (LC) [20 km/12.4 mi.] Link Budget: 19.0 dB

Features

- Hot-Pluggable SFP Footprint Optical Transceiver
- Digital Diagnostic Function
- 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
Certifications	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.

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.

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

Features

- Hot-Pluggable SFP Footprint Optical Transceiver
- Digital Diagnostic Function
- 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
Certifications	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.

Single Fiber SFP with Build-in Micro OTDR

Transition Networks provides advanced optical solutions through Intelligent Optical Transceivers. The portfolio includes an SFP with integrated Micro-OTDR that automatically detects, locates and reports optical fiber faults, when installed in a suitable switch. The SFP, is designed in conformance with the Small Form Factor Pluggable 20-pin Multi-Source Agreement (MSA) 2 types of OTDR SFP are available Single fiber and Dual fiber. The Single Fiber Single Frequency transceivers transmit and receive at the same wavelength effectively doubling the optical fiber plant capacity.

Upon disruption of data link, or failure to connect, the unit switches into uOTDR Mode, emitting optical power pulses (>+13 dBm) and detecting the reflected pulses at least down to -42 dBm optical power. Reflection Immune Operation resolves self reflection from an open connector and/or other reflectors.

Features

- 1.25Gbps/125Mbps bi-directional data link
- Compliant with 1000Base-LX & 100Base-FX
- Single +3.3V Power Supply
- RoHS Compliant
- MSA Compliant
- Integrated OTDR (Optical Time-Domain Reflectometer) function
- Integrated Reflection Immune Operation – Any Network Type
- SFF-8472 Digital Diagnostic Function (DMI)
- 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
- Minimum 20 dB Optical Link Budget
- Low power dissipation <1.5W

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
Certifications	IEC 60825-1, FDA CDRH 21-CFR 1040.10 Class 1
Warranty	1 Year

Ordering Information

Simplex

AF6-155G1-LU-NE
SFP w/OTDR 1000Base-LX/100Base-FX 1550nm single fiber single mode (LC) [40km / 24.9mi.] Link Budget: 20.0 dB

AF6-155G1-SU-NE *COMING SOON*
SFP w/OTDR 1000Base-LX/100Base-FX 1550nm single fiber single mode (SC) [40km / 24.9mi.] Link Budget: 20.0 dB

A06-155G1-SU-NE
SFP w/ Reflection Immune Operation, 1000Base-LX/100Base-FX, 1550nm single fiber single mode (SC) [40km / 24.9mi.] Link Budget: 20.0 dB

A06-155G1-LU-NE *COMING SOON*
SFP w/ Reflection Immune Operation, 1000Base-LX/100Base-FX, 1550nm single fiber single mode (LC) [40km / 24.9mi.] Link Budget: 20.0 dB

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

*NOTE: Supported by LIB-4424 Series, N2E-306 Series, N2E-ATLAS 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
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11; UL (specific SKUs only)
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: 10.0 dB; UL Listed

TN-GLC-BX-D
1000Base-BX 1490nm TX/1310nm RX single fiber single mode (LC) with DMI [10 km/6.2 mi.] Link Budget: 10.0 dB; UL Listed

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: 11.0 dB; UL Listed

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; UL Listed

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

MSA Compliant 1000Base Fiber Channel SFP Modules

1000Base-LX Single Fiber 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
- 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)
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11 UL (specific SKUs only)
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-BX 1310nm TX/1550nm RX single fiber single mode (LC) with DMI [10 km/6.2 mi.] Link Budget: 11.0 dB; UL Listed

TN-SFP-LXB12
1000Base-BX 1550nm TX/1310nm RX single fiber single mode (LC) with DMI [10 km/6.2 mi.] Link Budget: 11.0 dB; UL Listed

TN-SFP-LXB21
1000Base-BX 1310nm TX/1550nm RX single fiber single mode (LC) with DMI [20 km/12.4 mi.] Link Budget: 14.0 dB

TN-SFP-LXB22
1000Base-BX 1550nm TX/1310nm RX single fiber single mode (LC) with DMI [20 km/12.4 mi.] Link Budget: 14.0 dB

TN-SFP-LXB41
1000Base-BX 1310nm TX/1550nm RX single fiber single mode (LC) with DMI [40 km/24.9 mi.] Link Budget: 20.0 dB

TN-SFP-LXB42
1000Base-BX 1550nm TX/1310nm RX single fiber single mode (LC) with DMI [40 km/24.9 mi.] Link Budget: 20.0 dB

TN-SFP-LXB61
1000Base-BX 1310nm TX/1550nm RX single fiber single mode (LC) with DMI [60 km/37.3 mi.] Link Budget: 23.0 dB

TN-SFP-LXB62
1000Base-BX 1550nm TX/1310nm RX single fiber single mode (LC) with DMI [60 km/37.3 mi.] Link Budget: 23.0 dB

TN-SFP-LXB81
1000Base-BX 1510nm TX/1590nm RX single fiber single mode (LC) with DMI [80 km/49.7 mi.] Link Budget: 24.0 dB

TN-SFP-LXB82
1000Base-BX 1590nm TX/1510nm RX single fiber 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-LXB11T
1000Base-BX 1310nm TX/1550nm RX single fiber single mode (LC) with DMI [10 km/6.2 mi.] Link Budget: 11.0 dB

TN-SFP-LXB12T
1000Base-BX 1550nm TX/1310nm RX single fiber single mode (LC) with DMI [10 km/6.2 mi.] Link Budget: 11.0 dB

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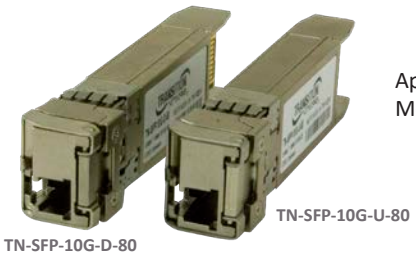
Cisco Compatible 10GBase SFP+ Modules

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



TN-SFP-10G-D-80 TN-SFP-10G-U-80

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 10GBase-BX
- SFF-8472 Digital Diagnostic Function (DMI)
- Maximum Link Length of 80 km
- Single +3.3V Power Supply
- RoHS Compliant

Specifications

Standards	IEEE 802.3z IEEE 802.3 IEEE 802.3ae
Output Wavelength	-5.5nm < λc < +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
Certifications	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 fiber 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 fiber 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 fiber 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 fiber 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 fiber 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 fiber 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 fiber 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 fiber single mode (LC)
[60 km/27.3 mi.] Link Budget: 20.0 dB

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

MSA Compatible Fast Ethernet SFP Module

100Base-TX (RJ-45)

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

Ordering Information

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

Features

- Hot-Pluggable SFP Footprint Optical Transceiver
- Digital Diagnostic Function
- 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
Certifications	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.

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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-PK
Pack of (20) TN-GLC-T Modules

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
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11, UL Listed
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.

Hardened Cisco Compatible Gigabit SFP Module

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
Certifications	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.

MSA Compliant 10/100/1000Base Copper SFP Module

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

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

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
- 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
Certifications	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.

Cisco Compatible 10GBase SFP+ Module

10GBase-T (RJ-45)

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

Ordering Information

TN-SFP-10G-T
10GBase-T (RJ-45) [30 m/ 98 ft.]

* Caution: Power Consumption and Supply Current are higher than the specified values in SFP MSA.

Features

- 10G Small Form-Factor Pluggable (SFP+)
- Maximum Link Length of 30 m over Cat 6a/Cat 7 Cable
- Single +3.3V Power Supply
- RoHS Compliant

Specifications

Standards	IEEE 802.3z IEEE 802.3 IEEE 802.3an
Dimensions	Width: 0.52” [13 mm] Depth: 2.18” [55 mm] Height: 0.33” [8 mm]
Power Input	3.3V
Power Consumption	3 W (max)
Environment	Operating: 0°C to 70°C Storage: -40°C to 85°C
MTBF	171,652 hours
Certifications	IEC-60825, FDA 21, CFR 1040.10 and 1040.11
Warranty	Lifetime

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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.

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

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-O
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

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Add/Drop Mux Coarse Wavelength Division Multiplexing (CWDM)

1 Channel with E/W Lines

CWDM-A2A857LCR-B

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
- 1 RU rack mountable chassis to hold 2 CWDM modules

Specifications

Channel Wavelength	ITU & ITU+1 (1260-1620nm)
Center Wavelength Accuracy	+-0.5 (nm)
Channel Spacing	20 (nm)
Channel Passband bandwidth (nm)	+-6.5 (nm)
Insertion Loss 1-Channel	In-Drop < 0.9 dB Add-Out < 0.9 dB In-Out < 0.8 dB
Channel Ripple	0.3dB
Isolation Adjacent	> 30dB
Non-Adjacent	> 40dB
Insertion Loss Temperature Sensitivity	<= 0.005dB/°C
Wavelength Temperature Shifting	<0.002 nm/°C
Polarization Dependent Loss	<0.1dB
Polarization Mode Dispersion	<0.1 PS
Directivity	>50dB
Return Loss	>50 dB
Mounting	19" Rack Mount
Dimensions	Width: 8.46" [215 mm] Depth: 7.68" [195 mm] Height: 1.24" [31.5 mm] With Chassis: Width: 17.44" [443 mm] Depth: 9.84" [250 mm] Height: 1.73" [44 mm]
Environment	Operating: -20°C to +70°C Storage: -40°C to +85°C
Weight	0.88 lbs [0.40 kg]
Warranty	Lifetime

Ordering Information

Add/Drop Mux

CWDM-A2A831LCR-B
1 Channel 1310nm port with E/W lines

CWDM-A2A833LCR-B
1 Channel 1330nm port with E/W lines

CWDM-A2A835LCR-B
1 Channel 1350nm port with E/W lines

CWDM-A2A837LCR-B
1 Channel 1370nm port with E/W lines

CWDM-A2A839LCR-B
1 Channel 1390nm port with E/W lines

CWDM-A2A841LCR-B
1 Channel 1410nm port with E/W lines

CWDM-A2A843LCR-B
1 Channel 1430nm port with E/W lines

CWDM-A2A845LCR-B
1 Channel 1450nm port with E/W lines

CWDM-A2A847LCR-B
1 Channel 1470nm port with E/W lines

CWDM-A2A849LCR-B
1 Channel 1490nm port with E/W lines

CWDM-A2A851LCR-B
1 Channel 1510nm port with E/W lines

CWDM-A2A853LCR-B
1 Channel 1530nm port with E/W lines

CWDM-A2A855LCR-B
1 Channel 1550nm port with E/W lines

CWDM-A2A857LCR-B
1 Channel 1570nm port with E/W lines

CWDM-A2A859LCR-B
1 Channel 1590nm port with E/W lines

CWDM-A2A861LCR-B
1 Channel 1610nm port with E/W lines

Optional Accessories (sold separately)

CWDM-MB19R2
19" Rack Mount chassis, 1RU High, holds 2 CWDM Modules

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

CWDM-M551LCR-B

Coarse Wavelength Division Multiplexing (CWDM)

4 Channels + 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.

Ordering Information

CWDM-M551LCR-B
4 Channels + OSC,1510/1530/1550/1570nm, Duplex LC

Optional Accessories (sold separately)

CWDM-MB19R2
19" Rack Mount chassis, 1RU High, holds 2 CWDM Modules

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
- 1 RU rack mountable chassis to hold 2 CWDM modules

Specifications

Channel Wavelength	ITU & ITU+1 (nm)
Center Wavelength Accuracy	+-0.5 (nm)
Channel Spacing	20 (nm)
Channel Passband bandwidth (nm)	+-6.5 (nm)
Insertion Loss with connector	<= 1.6dB
Channel Ripple	0.3dB
Isolation Adjacent	> 30dB
Non-Adjacent	> 40dB
Insertion Loss Temperature Sensitivity	<= 0.005dB/°C
Wavelength Temperature Shifting	<0.002 nm/°C
Polarization Dependent Loss	<0.1dB
Polarization Mode Dispersion	<0.1 PS
Directivity	>50dB
Return Loss	>50 dB
Mounting	19" Rack Mount
Dimensions	Width: 8.46" [215 mm] Depth: 7.68" [195 mm] Height: 1.24" [31.5 mm] With Chassis Width: 17.44" [443 mm] Depth: 9.84" [250 mm] Height: 1.73" [44 mm]
Environment	Operating: -20°C to +70°C Storage: -40°C to +85°C
Weight	0.88 lbs [0.40 kg]
Warranty	Lifetime

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CWDM-M947LCR-B

Coarse Wavelength Division Multiplexing (CWDM)

8 Channels + 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.

Ordering Information

CWDM-M947LCR-B
8 Channels + OSC,1470-1610nm, Duplex LC

Optional Accessories (sold separately)

CWDM-MB19R2
19" Rack Mount chassis, 1RU High, holds 2 CWDM Modules

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
- 1 RU rack mountable chassis to hold 2 CWDM modules

Specifications

Channel Wavelength	ITU & ITU+1 (nm)
Center Wavelength Accuracy	+-0.5 (nm)
Channel Spacing	20 (nm)
Channel Passband bandwidth (nm)	+-6.5 (nm)
Insertion Loss with connector	<= 2.5dB
Channel Ripple	0.3dB
Isolation Adjacent	> 30dB
Non-Adjacent	> 40dB
Insertion Loss Temperature Sensitivity	<= 0.005dB/°C
Wavelength Temperature Shifting	<0.002 nm/°C
Polarization Dependent Loss	<0.1dB
Polarization Mode Dispersion	<0.1 PS
Directivity	>50dB
Return Loss	>50 dB
Mounting	19" Rack Mount
Dimensions	Width: 8.46" [215 mm] Depth: 7.68" [195 mm] Height: 1.24" [31.5 mm] With Chassis Width: 17.44" [443 mm] Depth: 9.84" [250 mm] Height: 1.73" [44 mm]
Environment	Operating: -20°C to +70°C Storage: -40°C to +85°C
Weight	0.9 lbs [0.41 kg]
Warranty	Lifetime

CWDM-M1631LCR-B

Coarse Wavelength Division Multiplexing (CWDM)

16 Channels

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.

Ordering Information

CWDM-M1631LCR-B
16 Channels ,1310-1610nm, Duplex LC

Optional Accessories (sold separately)

CWDM-MB19R2
19" Rack Mount chassis, 1RU High, holds 2 CWDM Modules

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
- 1 RU rack mountable chassis to hold 2 CWDM modules

Specifications

Channel Wavelength	ITU & ITU+1 (nm)
Center Wavelength Accuracy	+-0.5 (nm)
Channel Spacing	20 (nm)
Channel Passband bandwidth (nm)	+-6.5 (nm)
Insertion Loss with connector	<= 3.2dB
Channel Ripple	0.3dB
Isolation Adjacent	> 30dB
Non-Adjacent	> 40dB
Insertion Loss Temperature Sensitivity	<= 0.005dB/°C
Wavelength Temperature Shifting	<0.002 nm/°C
Polarization Dependent Loss	<0.1dB
Polarization Mode Dispersion	<0.1 PS
Directivity	>50dB
Return Loss	>50 dB
Mounting	19" Rack Mount
Dimensions	Width: 8.46" [215 mm] Depth: 7.68" [195 mm] Height: 1.24" [31.5 mm] With Chassis Width: 17.44" [443 mm] Depth: 9.84" [250 mm] Height: 1.73" [44 mm]
Environment	Operating: -20°C to +70°C Storage: -40°C to +85°C
Weight	1 lb [0.46 kg]
Warranty	Lifetime

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