

# SMI-1000 Gigabit Media Converters

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 [perle.com/products/gigabit-managed-media-converters.shtml](http://perle.com/products/gigabit-managed-media-converters.shtml)

## 1000Base-T to 1000Base-X Fiber Mode Conversion

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- 1000Base-T to 1000Base-X Fiber Media Converters
- Extend network distances up to 160km
- Manage via SNMP, CLI - Telnet/SSH, Internet Browser, or PerleVIEW Centralized Management Package
- Advanced media converter features - Smart Link Pass-Through, Fiber Fault Alert, Auto-MDIX and Loopback



Perle's advanced line of **Managed Gigabit Media Converters**, provides transparent and reliable **Gigabit Ethernet to fiber connections**. While providing an economical means of extending your existing copper based network connection, these media converters are SNMP manageable to enable complete control and status viewing of your fiber links.

**Perle Gigabit Managed Media Converters** come standard with extensive cost and time saving features. In addition, a lifetime warranty and free worldwide technical support make Perle's Managed Gigabit to Fiber Converters the smart choice for IT professionals.

## SMI-1000 Managed Gigabit Media Converter Features

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Configuration Mode selection	Select whether to use the on-board DIP switches or the management software for mode selection
Converter Information	<ul style="list-style-type: none"><li>• User configurable converter name</li><li>• User configurable fiber port name</li><li>• User configurable copper port name</li><li>• Hardware revision number</li><li>• Firmware version number</li></ul>
DIP switch settings	View hardware DIP switch settings
Low power mode	If enabled it sets the Gigabit copper transceiver into "low power mode" which limits the strength of the signal. ( for shorter cable lengths ). Default is disabled
Port Control	Enable or disable individual fiber or copper port on the converter

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Copper Port Status	<ul style="list-style-type: none"> <li>• Port Enabled (Yes/No)</li> <li>• Link Status (Up/Down)</li> <li>• Auto Negotiation Settings (Disabled, Complete or In Progress)</li> <li>• Resolved as crossover MDI or MDIX type</li> </ul>
Fiber Port Status	<ul style="list-style-type: none"> <li>• Port Enabled (Yes/No)</li> <li>• Connector type (SC, LC, ST, SFP)</li> <li>• Link Status (Up/Down)</li> <li>• Far End Fault (OK, Failed)</li> <li>• Fiber Loopback mode (On/Off)</li> </ul>
Control	<ul style="list-style-type: none"> <li>• Reset</li> <li>• Reset to factory default</li> <li>• Ability to specific read/write phy registers</li> <li>• Update firmware</li> <li>• Fiber Loopback mode (Yes/No)</li> <li>• Upload/download configuration</li> </ul>
Auto-Negotiation (802.3ab)	<p>The media converter supports auto negotiation. The 1000Base-X fiber interface negotiates according to 802.3 clause 37. The 1000Base-T negotiates according to 802.3 clause 28 and 40. The 1000Base-X will link up with its partner after the highest common denominator (HCD) is reached and the copper has linked up with its partner. The 1000Base-X will continue to cycle through negotiation transmitting a remote fault of offline (provided this is enabled through the switch setting) until the copper is linked up and the HCDs match.</p> <p>The media converter supports auto-negotiation of full duplex, half duplex, remote fault, full duplex pause, asymmetric pause and Auto MDI-X.</p>
Auto-MDIX with Skew Correction	<p>Auto-MDIX (automatic medium-dependant interface crossover) detects the signaling on the 1000Base-T interface to determine the type of cable connected (straight-through or crossover) and automatically configures the connection when enabled. The media converter can also correct for wires swapped within a pair.</p> <p>The media converter will adjust for up to 64ns of delay skew between the 1000Base-T pairs.</p>
Smart Link Pass-Through	<p>When the Link Mode switch is placed into Smart Link Pass-Through mode, the 1000Base-T port will reflect the state of the 1000Base-X media converter port. This feature can be used whether fiber auto-negotiation is enabled or disabled.</p>

Fiber Fault Alert	With Fiber Fault Alert the state of the 1000Base-X receiver is passed to the 1000Base-X transmitter. This provides fault notification to the partner device attached to the 1000Base-X interface of the media converter. If the 1000Base-X transmitter is off as a result of this fault it will be turned on periodically to allow the condition to clear should the partner device on the 1000Base-X be using a similar technique. This eliminates the possibility of lockouts that occur with some media converters. Applies only when fiber auto-negotiation is disabled.
Pause (IEEE 802.3x)	Pause signaling is an IEEE feature that temporarily suspends data transmission between two devices in the event that one of the devices becomes overwhelmed. The media converter supports pause negotiation on the 1000Base-T fiber connection and 1000Base-X fiber connection. Select Symmetrical, asymmetrical TX or asymmetrical RX
Duplex	Full and half duplex operation supported.
Jumbo Packets	Transparent to jumbo packets up to 10KB-default. Jumbo packet support can be disabled.
VLAN	Transparent to VLAN tagged packets. Default Jumbo packet can be disabled.
Remote Loopback	Capable of performing a loopback on the 1000Base-X fiber interface.

## SMI-1000 Advanced Management Features

Enterprise and carrier-grade security is available through the support of strong authentication systems such as TACACS+, RADIUS and LDAP. Secure in-band access is assured via SNMPv3, SSH CLI and secure HTTPS Internet browser.

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|------|---|
| SNMP | <ul style="list-style-type: none"> <li>• Full read/write capabilities via central SNMP servers and PerleVIEW</li> <li>• Send SNMP traps ( up to 4 servers )</li> <li>• SNMPv3, V2C and V1</li> <li>• SNMPv3 – encryption and authentication for both management and trap support</li> <li>• RFC1213 MIB II</li> <li>• Proprietary MIB provided</li> </ul> |
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Telnet / SSH CLI access	In-band command line access via Telnet or SSH application
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Internet Browser access	<ul style="list-style-type: none"> <li>• Fast and intuitive graphical web interface for use with common internet browsers such Internet Explorer, Mozilla Firefox and Safari</li> <li>• HTTP or secure HTTPS</li> <li>• PerleVIEW Centralized Management Package</li> </ul>
Console port CLI access	<p>Out-of-band command line access via Cisco compatible RJ45 serial console port using common “rolled” CAT5 cable.</p> <p>Console port can be enabled ( default ) or disabled</p>
Concurrent management sessions	Run multiple management sessions simultaneously for multiple users
Inactivity timeout	Protect secure management sessions by setting an inactivity timeout value
Alert event reporting	<p>Alert level events are stored in the local event log and sent as:</p> <ul style="list-style-type: none"> <li>• SNMP traps to up to 4 servers</li> <li>• SYSLOG messages to a SYSLOG server</li> <li>• Email to user defined email address</li> </ul>
Advanced IP feature set	<ul style="list-style-type: none"> <li>• IPV4 and IPV6 address support</li> <li>• DHCP</li> <li>• DNS</li> <li>• Dynamic DNS</li> <li>• NTP</li> <li>• TFTP</li> <li>• Telnet</li> <li>• SSH V2 and V1</li> <li>• HTTP</li> <li>• HTTPS</li> </ul>
Advanced Management User Authentication with primary and secondary server support	<ul style="list-style-type: none"> <li>• TACACS+</li> <li>• RADIUS</li> <li>• LDAP</li> <li>• Active Directory via LDAP</li> <li>• RSA Secure ID-agent or via RADIUS authentication</li> <li>• Kerberos</li> <li>• NIS</li> </ul>
Advanced Management User Authorization and Accounting	<ul style="list-style-type: none"> <li>• TACACS+</li> <li>• RADIUS</li> </ul>

Encryption	<ul style="list-style-type: none"> <li>• AES (256/192/128), 3DES, DES, Blowfish, CAST128, ARCFOUR(RC4), ARCTWO(RC2)</li> <li>• Hashing Algorithms: MD5, SHA-1, RIPEMD160, SHA1-96, and MD5-96</li> <li>• Key exchange: RSA, EDH-RSA, EDH-DSS, ADH</li> <li>• X.509 Certificate verification: RSA, DSA</li> </ul>
Access Control List	An access control list can be created which can filter out only those workstations that are authorized to access the management resources. Filter on IP and/or Ethernet MAC addresses
Network Services Filter	Enable only those network services on the management module that are allowed on your network ( Telnet, SSH, HTTP, HTTPS, SNMP )
Firmware download	Update the latest level firmware for management and media converter modules via TFTP or PerleVIEW

### Media Converter Module Indicators

Power / TST	This green LED is turned on when power is applied to the media converter. Otherwise it is off. The LED will blink when in Loopback test mode.
Fiber link on / Receive activity (LKF)	This green LED is operational only when power is applied. The LED is on when the 1000Base-X link is on and flashes with a 50% duty cycle when data is received. The LED will slow blink when the 1000Base-X interface has been taken down as a result of a fault on the 1000Base-T interface.
Copper link on / Receive activity (LKC)	This green LED is operational only when power is applied. The LED is on when the 1000Base-T link is on and flashes with a 50% duty cycle when data is received. The LED will slow blink when the 1000Base-T interface has been taken down as a result of a fault on the 1000Base-T interface.

### Management Module Indicators / reset

Power	Blinking green during startup cycle Steady green: module has power and is ready Red : error
ALM	Red alarm indicator activated when an alert event occurs
LKC	Green indicator indicating an active Ethernet link. Blinking indicates RX and TX of data
100/1000	Green - 1000 Mbps link Yellow - 100 Mbps link Off - 10 Mbps or no Link

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Reset button	Recessed pinhole button resets module
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### Connectors

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1000Base-T	RJ45 connector, 4 pair CAT5 UTP cable or better Magnetic Isolation - 1.5kv
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Management ethernet port	10/100/1000Base-T - RJ45 Auto- MDI/MDIX
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Management console port	RS232 Serial RJ45 - Cisco pinout for use with standard CAT5 "rolled cable" (crossover) 9600 to 115k bps 7/8 bits Odd,even, no parity 1/2 stop bits Hardware/software flow control DCD/DSR monitoring
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### Packet Transmission Characteristics

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Bit Error Rate (BER)	<10 <sup>-12</sup>
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### Switches - accessible through a side opening in the chassis

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Auto-Negotiation	Enabled (Default - Up) In this mode the 1000Base-X and the 1000Base-T will negotiate to the HCD of the two link partners. The 1000Base-X will link up after the negotiation is completed and the 1000Base-T has linked up. Disabled - The 1000Base-X will not use auto negotiation. The 1000Base-T will negotiate to the HCD of the Switch settings and the link partner.
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Link Mode Link Mode provides a transparency to the state of the copper link allowing for simplified trouble shooting from the devices connected to the media converter. With Fiber Auto Negotiation enabled when the 1000Base-T link goes down the 1000Base-X link is brought down. The 1000Base-X link will advertise Remote Fault (Link Fault).

With Fiber Auto Negotiation disabled the state of the 1000Base-T link has no effect on the 1000Base-X link.

*Smart Link Pass Through (Down)*

With Fiber Auto Negotiation enabled the behavior is as follows. When the 1000Base-T link goes down the 1000Base-X link is brought down. The 1000Base-X link will advertise Remote Fault (Link Fault). When Remote Fault (Link Fault) is received on the 1000Base-X interface the 1000Base-T transmitter will be turned off. When the 1000Base-T receiver is off the 1000Base-X transmitter will be turned off. When the 1000Base-X receiver goes off the 1000Base-T transmitter will be turned off.

With Fiber Auto-Negotiation disabled the behavior is as follows. When the 1000Base-T receiver is off the 1000Base-X transmitter will be turned off. When the 1000Base-X receiver goes off the 1000Base-T transmitter will be turned off.

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Pause When Fiber Auto Negotiation is disabled Pause should only be enabled when all devices connected to the media converter support pause.

*Enabled(Default)* - The Media converter will advertise Pause capable, Asymmetric pause not needed during Auto-Negotiation.

*Disabled* - The Media converter will advertise that it does not have Pause capability during Auto-Negotiation.

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Fiber Fault Alert The Fiber Fault Alert switch has meaning when Auto-Negotiation is disabled  
*Enabled (Default - Up)*

When the 1000Base-X receiver is off the 1000Base-X transmitter is turned off. Periodically the 1000Base-X receiver will be turned on for a short period to allow the condition to clear if the 1000Base-X link partner is using a similar feature.

*Disabled (Down)*

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Duplex *Full (Default-Up)* - The media converter will advertise Full Duplex Capable, Half Duplex Capable.

*AUTO (Down)* -The media converter will advertise Full Duplex Not Capable, Half Duplex Capable.

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Remote Loopback	The media converter can perform a loopback on the 1000Base-X fiber interface. <i>Disabled (Default - Up)</i>
	Enabled - The 1000Base-X receiver is looped to the 1000Base-X transmitter. The 1000Base-T transmitter is taken off the interface.

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### **Power**

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Input Supply Voltage	( 12 vDC Nominal )
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Current	0.42amps at 12vdc
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Power Consumption	4.98watts
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Power Connector	5.5mm x 9.5mm x 2.1mm barrel socket
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### **Power Adapter**

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Universal AC/DC Adapter	100-240v AC, regulated DC adapter included
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### **Environmental Specifications**

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Operating Temperature	0° C to 50° C (32° F to 122° F)
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Storage Temperature	minimum range of -25° C to 70° C (-13° F to 158° F)
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Operating Humidity	5% to 90% non-condensing
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Storage Humidity	5% to 95% non-condensing
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Operating Altitude	Up to 3,048 meters (10,000 feet)
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Heat Output ( BTU/HR )	17
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MTBF (Hours)*	248,259 without power adapter 169,698 with power adapter
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Chassis	Metal with an IP20 ingress protection rating
<b>Mounting</b>	
Din Rail Kit	Optional
Wall / Rack Mount Kit	Optional
<b>Product Weight and Dimensions</b>	
Weight	0.722 kg
Dimensions	175 x 145 x 23 mm
<b>Packaging</b>	
Shipping Weight	1.2 kg
Shipping Dimensions	300 x 200 x 70 mm
<b>Regulatory Approvals</b>	
Emissions	FCC Part 15 Class A, EN55022 Class A CISPR 22 Class A CISPR 32:2015/EN 55032:2015 (Class A) CISPR 24:2010/EN 55024:2010 EN61000-3-2
Immunity	EN55024
Electrical Safety	UL 60950-1 IEC 60950-1(ed 2); am1, am2 EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013 CE
Laser Safety	EN 60825-1:2007 Fiber optic transmitters on this device meet Class 1 Laser safety requirements per IEC-60825 FDA/CDRH standards and comply with 21CFR1040.10 and 21CFR1040.11.

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Environmental Reach, RoHS and WEEE Compliant

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Other ECCN: 5A992

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HTSUS Number: 8517.62.0020

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CCATS: G134373

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Perle Limited Lifetime Warranty

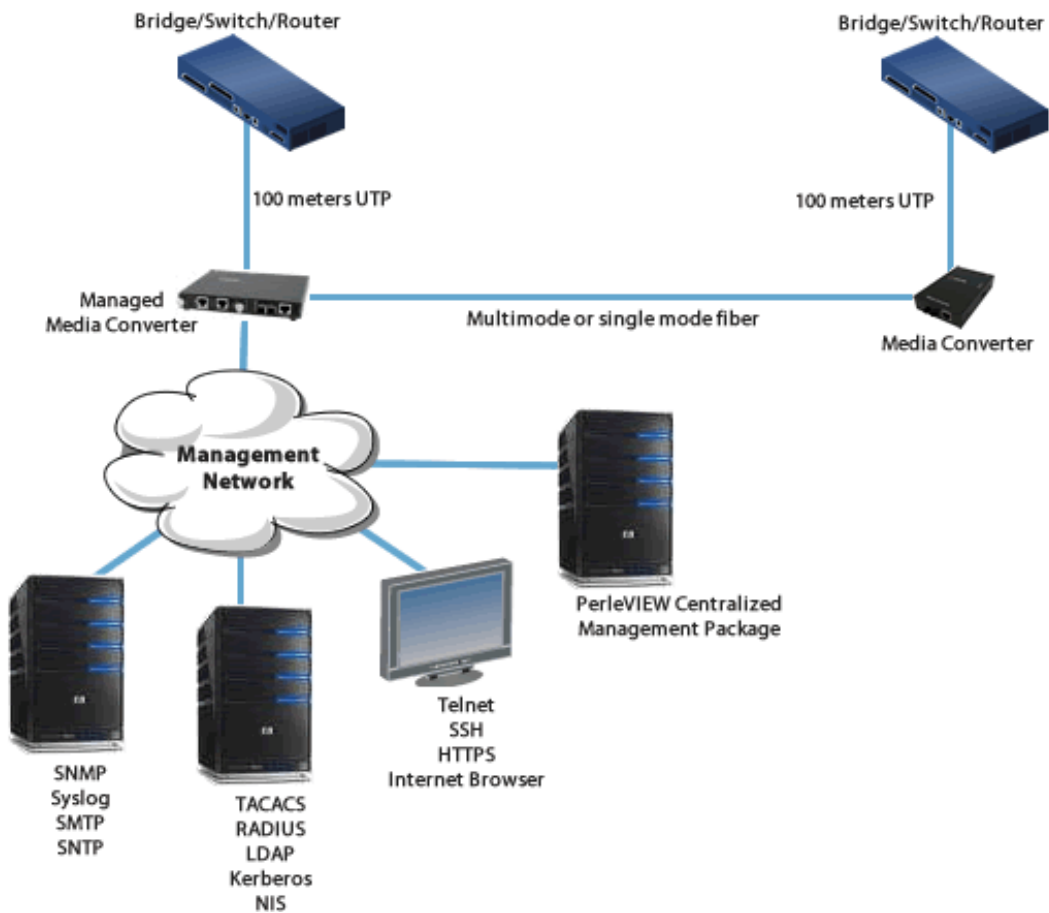
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\*Calculation model based on MIL-HDBK-217-FN2 @ 30 °C

### Managed Ethernet to Fiber Links

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Manage your copper to fiber link with a Managed Standalone Media Converter. Ideal for use in managed networks with low density fiber applications. A Managed Standalone Media Converter is connected across a fiber link to a remote media converter. The copper and fiber link on the managed standalone unit can provide vital information and status to network management tools such as SNMP.



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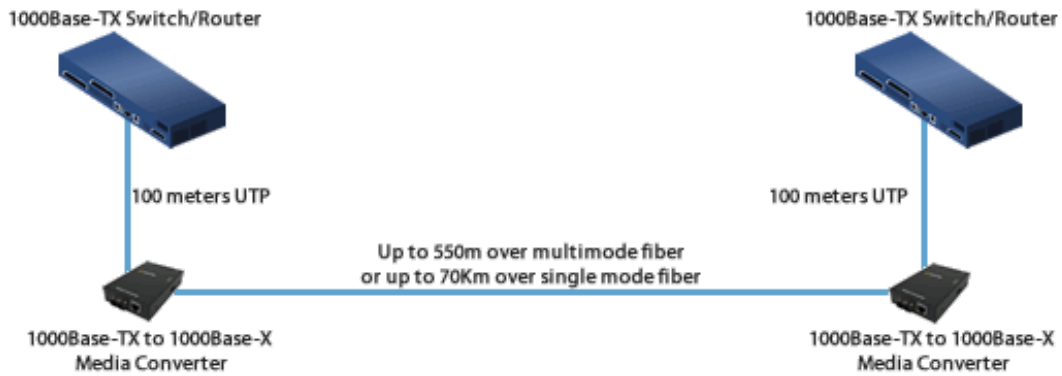
### Extend between two TP Gigabit Switches

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### Extend the network distance between two twisted pair Gigabit Switches

Two Gigabit Ethernet Media Converters can extend the distance between 1000Base-T Switches across a fiber link up to 120Km in length.

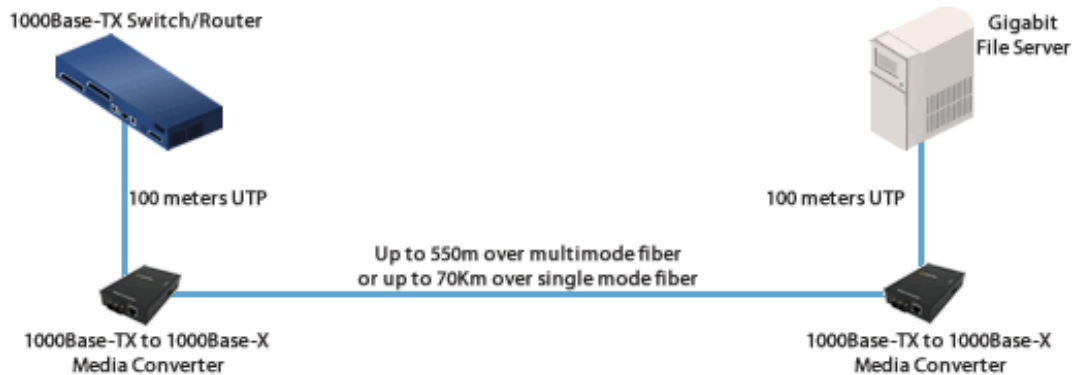


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### Switch to Gigabit Server

#### Extend the network distance between a Gigabit Switch and a Gigabit File Server

Two Gigabit Ethernet Media Converters can extend the distance between a 1000Base-T Switch and a Gigabit File Server across a fiber link up to 120Km in length.



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### Gigabit Mode-Conditioning Adapters - More Distance

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### Extend Gigabit to 550m over 62.5 micron Multimode Fiber

Gigabit across 62.5 micron MMF cable is normally limited to 275 meters. By adding mode-conditioning adapters and 1000baseLX media converters you can extend the distance up to 550 meters on MMF cable plant.

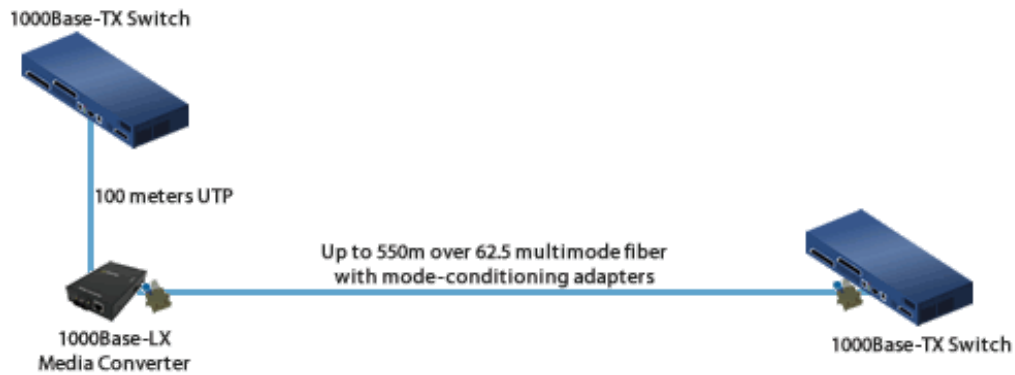


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### Gigabit Mode-Conditioning Adapters – 1000Base-LX

#### Installing Gigabit 1000Base-LX routers and switches into existing multimode cable plants

Using mode-conditioning adapters and a 1000Base-LX media converter, connect a copper based Gigabit Switch with a remote 1000base-LX switch/router over existing multimode cable plant.



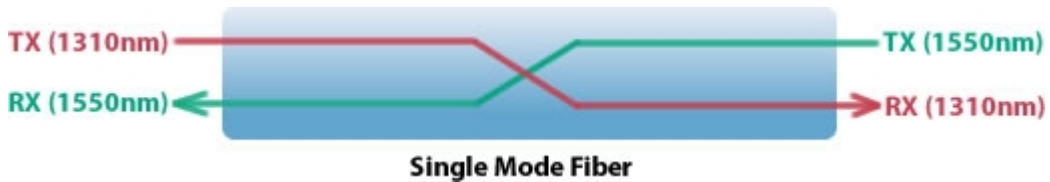
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### Single Mode / Single Fiber

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**Connect copper ports over a single fiber strand ( also referred to as “Bi-Directional” BiDi )**

When Single Strand fiber is used, a pair of Single Fiber Media Converters is needed for the copper to fiber conversion. Perle Single Fiber Media Converters are also referred to as “Up/Down” models. For example the SMI-1000-S1SC10U (“Up”) and SMI-1000-S1SC10D (“Down”), shown below, must be used in pairs. An “Up” must be matched with a “Down” peer to deal with transmit and receive frequencies separately.



**SMI-1000-S1SC10USMI-1000-S1SC10D**

The majority of installations for single mode fiber media converters are of the “dual connector” or “dual fiber” type where one fiber connection is used for transmit, the other for receive. These are physically “crossed” to match up the Transmit/Receive links.

However, to reduce costs, or where there are limits on available fiber, WDM technology may be utilized. WDM uses separate transmit and receive frequencies to communicate on a single fiber strand. WDM technology relies on the fact that optical fibers can carry many wavelengths of light simultaneously without interaction between each wavelength. Thus, a single fiber can carry many separate wavelength signals or channels simultaneously.

So remember, if Single Strand fiber is used, you will need an “Up” Media Converter on one side and a “Down” Media Converter on the other for copper to fiber conversion.

Perle offers a wide variety of Single Fiber (“Up/Down”) Media Converters to connect 10BaseT, Fast Ethernet and Gigabit to single fiber. Whether you need Managed or Unmanaged, Standalone or Modular Chassis Based, 20km or 120km, Perle has the right model to meet your fiber conversion requirement.

**Select a Model to obtain a Part Number - Managed Stand-alone Media Converters - Gigabit Ethernet to Fiber**

Model	Connector	Type	Transmit (dBm)		Receive (dBm)		Power Budget (dBm)	Wavelength (nm)	Fiber Type	Core Size (um)	Modal Bandwidth (MHz* Km)	Operating Distance
			Min	Max	Min	Max						
SMI-1000-M2SC05	Dual SC	1000Base-SX	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	62.5	160	220 m (722 ft)
			62.5	200	275 m (902 ft)							
			50	400	500 m (1,640 ft)							
			50	500	550 m (1,804 ft)							

											50	2000	1000 m (3281 ft)
SMI-1000-M2LC05	Dual LC	1000Base-SX	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	62.5	160	220 m (722 ft)	
										62.5	200	275 m (902 ft)	
										50	400	500 m (1,640 ft)	
										50	500	550 m (1,804 ft)	
										50	2000	1000 m (3281 ft)	
SMI-1000-M2ST05	Dual ST	1000Base-SX	-9.5	-4.0	-17.0	-3.0	7.5	850	MMF	62.5	160	220 m (722 ft)	
										62.5	200	275 m (902 ft)	
										50	400	500 m (1,640 ft)	
										50	500	550 m (1,804 ft)	
										50	2000	1000 m (3281 ft)	
SMI-1000-M2SC2	Dual SC	1000Base-LX	-6.0	0.0	-17.0	-0.0	11	1310	MMF	62.5	160	2 km (1.2 mi)	
										50	500	1000m (3280ft)	
SMI-1000-M2ST2	Dual ST	1000Base-LX	-6.0	0.0	-17.0	-0.0	11	1310	MMF	62.5	160	2 km (1.2 mi)	
										50	500	1000m (3280ft)	
SMI-1000-M2LC2	Dual LC	1000Base-LX	-9.0	-1.0	-19.0	-1.0	10	1310	MMF	62.5	160	2 km (1.2 mi)	
										50	500	1000m (3280ft)	
SMI-1000-S2SC10	Dual SC	1000Base-LX/LH	-9.5	-3.0	-20.0	-3.0	10.5	1310	MMF*	62.5	500	550 m (1,804 ft)	
										50	400	550 m (1,804 ft)	
										50	400	550 m (1,804 ft)	
									SMF	**	-	10 km (6.2 mi)	
SMI-1000-S2LC10	Dual LC	1000Base-LX/LH	-9.5	-3.0	-20.0	-3.0	10.5	1310	MMF*	62.5	500	550 m (1,804 ft)	
										50	400	550 m (1,804 ft)	
										50	400	550 m (1,804 ft)	
									SMF	**	-	10 km (6.2 mi)	

SMI-1000-S2ST10	Dual ST	1000Base-LX/LH	-9.5	-3.0	-20.0	-3.0	10.5	1310	MMF*	62.5	500	550 m (1,804 ft)
										50	400	550 m (1,804 ft)
										50	400	550 m (1,804 ft)
									SMF	**	-	10 km (6.2 mi)
SMI-1000-S2SC40	Dual SC	1000Base-EX	-2.0	2.0	-23.0	-3.0	21.0	1310	SMF	**	-	40 km (25 mi)
SMI-1000-S2LC40	Dual LC	1000Base-EX	-3.0	2.0	-23.0	-3.0	20.0	1310	SMF	**	-	40 km (25 mi)
SMI-1000-S2ST40	Dual ST	1000Base-EX	-2.0	2.0	-23.0	-3.0	21.0	1310	SMF	**	-	40 km (25 mi)
SMI-1000-S2SC70	Dual SC	1000Base-ZX	-2.0	5.0	-23.0	-3.0	21.0	1550	SMF	-	-	70 km (43 mi)
SMI-1000-S2LC70	Dual LC	1000Base-ZX	0.0	5.0	-23.0	-3.0	23.0	1550	SMF	-	-	70 km (43 mi)
SMI-1000-S2ST70	Dual ST	1000Base-ZX	-2.0	5.0	-23.0	-3.0	21.0	1550	SMF	-	-	70 km (43 mi)
SMI-1000-S2SC120	Dual SC	1000Base-EZX	0.0	5.0	-32.0	-9	32.0	1550	SMF	-	-	120 km (75 mi)
SMI-1000-S2LC120	Dual LC	1000Base-EZX	0.0	5.0	-32.0	-9	32.0	1550	SMF	-	-	120 km (75 mi)
SMI-1000-S2ST120	Dual ST	1000Base-EZX	0.0	5.0	-32.0	-9	32.0	1550	SMF	-	-	120 km (75 mi)
SMI-1000-S2SC160	Dual SC	1000Base-ZX	2.0	5.0	-34.0	-9	36	1550	SMF	-	-	160 km (100 mi)
SMI-1000-S2LC160	Dual LC	1000Base-ZX	2.0	5.0	-34.0	-9	36	1550	SMF	-	-	160 km (100 mi)
SMI-1000-S2ST160	Dual ST	1000Base-ZX	2.0	5.0	-34.0	-9	36	1550	SMF	-	-	160 km (100 mi)

## Single Fiber Models Recommended use in pairs

Model	Connector	Type	Transmit (dBm)		Receive (dBm)		Power Budget (dBm)	Wavelength (nm)	Fiber Type	Core Size (um)	Modal Bandwidth (MHz* Km)	Operating Distance
			Min	Max	Min	Max						
SMI-1000-M1SC05U	Single SC	1000Base-BX-U	-10.0	-4.0	-17.0	-3.0	7.0	1310 / 1550	MMF	62.5	500	500 m (1,640 ft)
										50	500	500 m (1,640 ft)
SMI-1000-M1SC05D	Single SC	1000Base-BX-D	-10.0	-4.0	-17.0	-3.0	7.0	1550 / 1310	MMF	62.5	500	500 m (1,640 ft)
										50	500	500 m (1,640 ft)
SMI-1000-S1SC10U	Single SC	1000Base-BX-U	-9.0	-3.0	-20.0	-3.0	11.0	1310 / 1490	SMF	**	-	10 km (6.2 mi)
SMI-1000-S1SC10D	Single SC	1000Base-BX-D	-9.0	-3.0	-20.0	-3.0	11.0	1490 / 1310	SMF	**	-	10 km (6.2 mi)

SMI-1000-S1SC20U	Single SC	1000Base-BX-U	-8.0	-3.0	-22.0	-3.0	14.0	1310 / 1490	SMF	**	-	20 km (12.4 mi)
SMI-1000-S1SC20D	Single SC	1000Base-BX-D	-8.0	-3.0	-22.0	-3.0	14.0	1490 / 1310	SMF	**	-	20 km (12.4 mi)
SMI-1000-S1SC40U	Single SC	1000Base-BX-U	-3.0	2.0	-23.0	-3.0	20.0	1310 / 1490	SMF	**	-	40 km (25 mi)
SMI-1000-S1SC40D	Single SC	1000Base-BX-D	-3.0	2.0	-23.0	-3.0	20.0	1490 / 1310	SMF	**	-	40 km (25 mi)
SMI-1000-S1SC80U	Single SC	1000Base-BX-U	-2.0	3.0	-26.0	-3.0	24.0	1510 / 1490	SMF	-	-	80 km (50 mi)
SMI-1000-S1SC80D	Single SC	1000Base-BX-D	-2.0	3.0	-26.0	-3.0	24.0	1590 / 1510	SMF	-	-	80 km (50 mi)
SMI-1000-S1SC120U	Single SC	1000Base-BX-U	-3.0	2.0	-34	-9	31	1510 / 1590	SMF	-	-	120 km (75 mi)
SMI-1000-S1SC120D	Single SC	1000Base-BX-D	-3.0	2.0	-34	-9	31	1590 / 1510	SMF	-	-	120 km (75 mi)

The minimum fiber cable distance for all converters listed is 2 meters.



\*A mode-conditioning adapter as specified by the IEEE standard, is required regardless of the span length. Note how the mode conditioning adapter for 62.5-um fibers has a different specification from the mode-conditioning adapter for 50-um fibers.

\*\*ITU-T G.652 SMF as specified by the IEEE 802.3z standard.



## Media Converter Accessories




4 DIN Rail Mount Bkt    DIN Rail Mounting Kit



MCSM                      Standalone media converter wall mount bracket







Product Image	Description	Power Cord	Product Number
	<b>SMI-1000-S2SC120 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-EZX 1550 nm single mode (SC) [120 km/74.6 miles]	USA UK EU SA AUS NONE	05070124 05070121 05070122 05070125 05070126 05070128
	<b>SMI-1000-S2ST120 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-EZX 1550 nm single mode (ST) [120 km/74.6 miles]	USA UK EU SA AUS NONE	05070134 05070131 05070132 05070135 05070136 05070138




Product Image	Description	Power Cord	Product Number
	<b>SMI-1000-S2LC120 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-EZX 1550 nm single mode (LC) [120 km/74.6 miles]	USA UK EU SA AUS NONE	05070144 05070141 05070142 05070145 05070146 05070148
	<b>SMI-1000-S1SC10U - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1310nm TX / 1490nm RX single fiber single mode (SC) [10 km/6.2 miles]	USA UK EU SA AUS NONE	05070154 05070151 05070152 05070155 05070156 05070158
	<b>SMI-1000-S1SC10D - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1490nm TX / 1310nm RX single fiber single mode (SC) [10 km/6.2 miles]	USA UK EU SA AUS NONE	05070164 05070161 05070162 05070165 05070166 05070168
	<b>SMI-1000-S2SC160 - Gigabit Ethernet IP Managed Standalone media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-ZX 1550 nm single mode (SC) [160 km/100 miles]	USA UK EU SA AUS NONE	05070184 05070181 05070182 05070185 05070186 05070188
	<b>SMI-1000-S2ST160 - Gigabit Ethernet IP Managed Standalone media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-ZX 1550 nm single mode (ST) [160 km/100 miles]	USA UK EU SA AUS NONE	05070194 05070191 05070192 05070195 05070196 05070198
	<b>SMI-1000-S2LC160 - Gigabit Ethernet IP Managed Standalone media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-ZX 1550 nm single mode (LC) [160 km/100 miles]	USA UK EU SA AUS NONE	05070204 05070201 05070202 05070205 05070206 05070208

Product Image	Description	Power Cord	Product Number
	<b>SMI-1000-S1SC20U - Gigabit Ethernet IP Managed Standalone media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1310nm TX / 1490nm RX single fiber single mode (SC) [20 km/12.4 miles]	USA UK EU SA AUS NONE	05070214 05070211 05070212 05070215 05070216 05070218
	<b>SMI-1000-S1SC20D - Gigabit Ethernet IP Managed Standalone media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1490nm TX / 1310nm RX single fiber single mode (SC) [20 km/12.4 miles]	USA UK EU SA AUS NONE	05070224 05070221 05070222 05070225 05070226 05070228
	<b>SMI-1000-S1SC40U - Gigabit Ethernet IP Managed Standalone media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1310nm TX / 1490nm RX single fiber single mode (SC) [40 km/25 miles]	USA UK EU SA AUS NONE	05070234 05070231 05070232 05070235 05070236 05070238
	<b>SMI-1000-S1SC40D - Gigabit Ethernet IP Managed Standalone media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1490nm TX / 1310nm RX single fiber single mode (SC) [40 km/25 miles]	USA UK EU SA AUS NONE	05070244 05070241 05070242 05070245 05070246 05070248
	<b>SMI-1000-S1SC80U - Gigabit Ethernet IP Managed Standalone media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1510nm TX / 1590nm RX single fiber single mode (SC) [80 km/50 miles]	USA UK EU SA AUS NONE	05070254 05070251 05070252 05070255 05070256 05070258
	<b>SMI-1000-S1SC80D - Gigabit Ethernet IP Managed Standalone media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1590nm TX / 1510nm RX single fiber single mode (SC) [80 km/50miles]	USA UK EU SA AUS NONE	05070264 05070261 05070262 05070265 05070266 05070268


Product Image	Description	Power Cord	Product Number
	<b>SMI-1000-S1SC120U - Gigabit Ethernet IP Managed Standalone media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1510nm TX / 1590nm RX single fiber single mode (SC) [120 km/75 miles]	USA UK EU SA AUS NONE	05070274 05070271 05070272 05070275 05070276 05070278
	<b>SMI-1000-S1SC120D - Gigabit Ethernet IP Managed Standalone media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1590nm TX / 1510nm RX single fiber single mode (SC) [120 km/75miles]	USA UK EU SA AUS NONE	05070284 05070281 05070282 05070285 05070286 05070288
	<b>SMI-1000-M2SC2 - Gigabit Ethernet IP Managed Standalone Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX 1310nm Extended multimode (SC) [2km /6562 ft.]	USA UK EU SA AUS NONE	05070494 05070491 05070492 05070495 05070496 05070498
	<b>SMI-1000-M2ST2 - Gigabit Ethernet IP Managed Standalone Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX 1310nm Extended multimode (ST) [2km /6562 ft.]	USA UK EU SA AUS NONE	05070504 05070501 05070502 05070505 05070506 05070508
	<b>SMI-1000-M2LC2 - Gigabit Ethernet IP Managed Standalone Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX 1310nm Extended multimode (LC) [2km /6562 ft.]	USA UK EU SA AUS NONE	05070514 05070511 05070512 05070515 05070516 05070518
	<b>SMI-1000-M1SC05D - Gigabit Ethernet IP Managed Media Converter.</b> 1000BASE-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1550nm TX / 1310nm RX single fiber multimode (SC) [550 m/1804 ft.]	USA UK EU SA AUS NONE	05071244 05071241 05071242 05071245 05071246 05071248

Product Image	Description	Power Cord	Product Number
	<b>SMI-1000-M1SC05U - Gigabit Ethernet IP Managed Media Converter.</b> 1000BASE-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1310nm TX / 1550nm RX single fiber multimode (SC) [550 m/1804 ft]	USA UK EU SA AUS NONE	05071234 05071231 05071232 05071235 05071236 05071238
	<b>SMI-1000-M2SC05 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (SC) [550 m/1804 ft]	USA UK EU SA AUS NONE	05070004 05070001 05070002 05070005 05070006 05070008
	<b>SMI-1000-M2ST05 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (ST) [550 m/1804 ft]	USA UK EU SA AUS NONE	05070014 05070011 05070012 05070015 05070016 05070018
	<b>SMI-1000-M2LC05 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (LC) [550 m/1804 ft]	USA UK EU SA AUS NONE	05070024 05070021 05070022 05070025 05070026 05070028
	<b>SMI-1000-S2SC10 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX/LH 1310 nm single mode (SC) [10 km/6.2 miles] or multimode (SC) [550 m/1804 ft] using a mode conditioning cable	USA UK EU SA AUS NONE	05070034 05070031 05070032 05070035 05070036 05070038
	<b>SMI-1000-S2ST10 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX/LH 1310 nm single mode (ST) [10 km/6.2 miles] or multimode (ST) [550 m/1804 ft] using a mode conditioning cable	USA UK EU SA AUS NONE	05070044 05070041 05070042 05070045 05070046 05070048

Product Image	Description	Power Cord	Product Number
	<b>SMI-1000-S2LC10 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX/LH 1310 nm single mode (LC) [10 km/6.2 miles] or multimode (LC) [550 m/1804 ft] using a mode conditioning cable	USA UK EU SA AUS NONE	05070054 05070051 05070052 05070055 05070056 05070058
	<b>SMI-1000-S2SC40 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-EX 1310 nm single mode (SC) [40 km/24.9 miles]	USA UK EU SA AUS NONE	05070064 05070061 05070062 05070065 05070066 05070068
	<b>SMI-1000-S2ST40 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-EX 1310 nm single mode (ST) [40 km/24.9 miles]	USA UK EU SA AUS NONE	05070074 05070071 05070072 05070075 05070076 05070078
	<b>SMI-1000-S2LC40 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-EX 1310 nm single mode (LC) [40 km/24.9 miles]	USA UK EU SA AUS NONE	05070084 05070081 05070082 05070085 05070086 05070088
	<b>SMI-1000-S2SC70 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-ZX 1550 nm single mode (SC) [70 km/43.5 miles]	USA UK EU SA AUS NONE	05070094 05070091 05070092 05070095 05070096 05070098
	<b>SMI-1000-S2ST70 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-ZX 1550 nm single mode (ST) [70 km/43.5 miles]	USA UK EU SA AUS NONE	05070104 05070101 05070102 05070105 05070106 05070108

Product Image	Description	Power Cord	Product Number
	<b>SMI-1000-S2LC70 - Gigabit Ethernet Standalone IP Managed Media Converter.</b> 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-ZX 1550 nm single mode (LC) [70 km/43.5 miles]	USA UK EU SA AUS NONE	05070114 05070111 05070112 05070115 05070116 05070118

## Accessories

Accessory Image	Description	Model Number	Accessory Number
	DIN Rail Mounting Kit for 4 & 8 port IOLAN SDS/STS wall mount models, all Stand-Alone Media Converters and all Stand-Alone Ethernet Extenders. Two of these brackets are required for the 8 port STS8-D model.	4 DIN Rail Mount Bkt	04030840
	Standalone media converter wall / rack mount bracket	MCSM	05059999