S-1000MM Gigabit Media Converters

perle.com/products/gigabit-fiber-converters.shtml

1000Base-SX to 1000Base-X Fiber Mode Conversion

- 1000Base-SX to 1000Base-X Fiber to Fiber Media Converters
- Multimode to multimode or multimode to single mode
- Extend multimode fiber to 160km and beyond (through cascading)
- Choice in SC, LC and ST fiber connector models
- Signal regeneration prevents signal degradation
- Advanced Features: Smart Link Pass-Through, Fiber Fault Alert,
  loopback for each fiber connection

Perle's feature rich **S-1000MM Gigabit Fiber to Fiber Media Converters** enable transparent fiber extension of 1000Base-SX multimode fiber to 1000Base-SX multimode or 1000Base-LX/EX/ZX/BX single mode fiber.

Perle's advanced features make the end to end fiber link completely transparent. This allows for more efficient troubleshooting and less on-site maintenance. In addition, a lifetime warranty and free worldwide technical support make **Perle's S-1000MM Gigabit Fiber to Fiber Media Converters** the smart choice for IT professionals.

Whether you need to extend **multimode to multimode** or **multimode to single mode**, Perle has an extensive range of S-1000MM Gigabit Fiber to Fiber Media Converters to meet your fiber conversion requirement.

S-1000MM Fiber to Fiber Features: 1000Base-SX to 1000Base-X

Auto-Negotiation (802.3ab)	The 1000Base-X fiber interfaces negotiate according to 802.3 clause 37.
Smart Link Pass-Through	When the Link Mode switch is placed into Smart Link Pass-Through mode, the 1000BASE-X link on one port will reflect the state of the other 1000Base-X media converter port. This feature can be used whether fiber auto-negotiation is enabled or disabled.

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.
Signal Regeneration	Signal regeneration maintains signal integrity and allows for maximum fiber to fiber connections without degradation.
Cascading	Media converters can be cascaded. Two or more media converters can be chained in a link to achieve even greater distances.
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 is transparent to Pause frames.
VLAN	The media converter is transparent to 802.1Q VLAN tagged packets.
Duplex	Full and half duplex operation supported.
Jumbo Packets	Transparent to jumbo packets up to 10KB.
Remote Loopback	The media converter can perform a loopback on each 1000Base-X fiber interface.

Power	
Input Supply Voltage	6 - 30 vDC, unregulated (12 vDC Nominal)
Current	0.21 amps
Power Consumption	2.5 watts
Power Connector	5.5mm x 9.5mm x 2.1mm barrel socket

Power Adapter	
Universal AC/DC Adapter	100-240v AC, regulated DC adapter included

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 slowly when in Loopback test mode.
Fiber link 1 / Receive activity (LK1)	This green LED is operational only when power is applied. The LED is on when the 100Base-X link is on and flashes with a 50% duty cycle when data is received.
Fiber link 2 on / Receive activity (LK2)	This green LED is operational only when power is applied. The LED is on when the 100Base-X link is on and flashes with a 50% duty cycle when data is received.
Switches - accessible through a side opening in the chassis	
Auto-Negotiation	*Auto (default up)* - Fiber Negotiation is performed for both fiber ports. Full and half duplex will be advertised. Pause will advertise support for Symmetrical and Asymmetrical Pause. Pause frame will not be acted upon or generated but will be passed through. *Off* - Negotiation on both fiber ports will be disabled. Settings of Link mode and Fiber fault alert will be determined by those switch settings. Pause frames will not be acted upon or generated but will continue to be passed through.
Link Mode	*Smart Link Pass-Through*: - *(default up)* - In this mode, the link state on one connection is directly reflected through the media converter to the other connection. If link is lost on one of the connections, then the other link will be brought down by the media converter. *Standard*: - In this mode the links on both fiber ports can be brought up and down independently of each other. A loss of link on either link can take place without affecting the other connection
Fiber Fault Alert	*Enabled - (default up)* - If the media converter detects a loss of fiber signal on a fiber receiver, it will immediately disable its fiber transmitter signal. This, in effect, notifies the remote fiber link partner that an error condition exists on the fiber connection. The setting of this switch applies to both fiber ports *Disabled*: The media converter will not monitor for fiber fault or generate them.
Remote Loopback #1	The media converter can perform a loopback on the link #1 fiber interface. *Disabled (Default - Up)* *Enabled* - The 1000Base-X receiver is looped to the 1000Base-X transmitter. Link #2's fiber transmitter is taken off the interface

Remote Loopback #2	The media converter can perform a loopback on the link #2 fiber interface. *Disabled (Default - Up)* *Enabled* - The 1000Base-X receiver is looped to the 1000Base-X transmitter. Link #1's fiber transmitter is taken off the interface
Fiber Connectors	
1000Base-X	Available in SC, ST and LC connector models
Packet Transmission Characteristics	
Bit Error Rate (BER)	$<10^{-12}$
Environmental Specifications	
Operating Temperature	0° C to 50° C (32° F to 122° F)
Storage Temperature	minimum range of -25° C to 70° C (-13° F to 158° F)
Operating Humidity	5% to 90% non-condensing
Storage Humidity	5% to 95% non-condensing
Operating Altitude	Up to 3,048 meters (10,000 feet)
Heat Output (BTU/HR)	8.53
MTBF (Hours)*	Without power adaptor: 432,138 With power adaptor: 274,804
Chassis	Metal with an IP20 ingress protection rating
Mounting	
Din Rail Kit	Optional
Wall / Rack Mount Kit	Optional

Product Weight and Dimensions	
Weight	0.3 kg, 0.66 lbs
Dimensions	120 x 80 x 26 mm, 4.7 x 3.1 x 1.0 inches
Packaging	
Shipping Weight	0.55 kg, 1.2 lbs
Shipping Dimensions	170 x 280 x 70 mm, 6.7 x 10.2 x 2.8 inches
Regulatory Approvals	
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.
Environmental	Reach, RoHS and WEEE Compliant
Other	ECCN: 5A991
	HTSUS Number: 8517.62.0020
	Perle Limited Lifetime Warranty

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

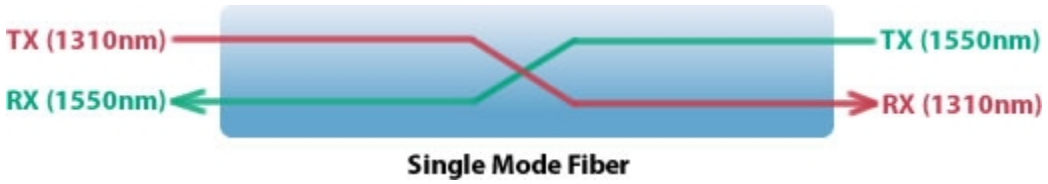
Extend between two Fiber Switches

Extend the network distance between two Gigabit Fiber Switches

Two Gigabit Multimode to Single Mode Media Converters can extend the distance between Gigabit Multimode Switches across a fiber link up to 160km in length.

Single Mode / Single Fiber

Connect fiber 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 fiber to fiber conversion. Perle Single Fiber Media Converters are also referred to as “Up/Down” models. For example the S-1000MM-S1SC20**U** (“Up”) and S-1000MM-S1SC20**D** (“Down”), shown below, must be used in pairs. An “**U**p” must be matched with a “**D**own” peer to deal with transmit and receive frequencies separately.



S-1000MM-S1SC20US-1000MM-S1SC20D

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 fiber to fiber conversion.

Perle offers a wide variety of Single Fiber (“**U**p/**D**own”) 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 - Unmanaged Stand-alone Media Converters - Gigabit Fiber to Fiber

Model	Port	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						
S-1000MM-M2ST05	Port 1	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)
	Port 2	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)
S-1000MM-M2SC05	Port 1	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)
	Port 2	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)
S-1000MM-M2LC05	Port 1	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)
	Port 2	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)
S-1000MM-M2ST2	Port 1	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)
	Port 2	Dual ST	1000BASE-LX	-6.0	0.0	-0.0	-17.0	6.0	1310	MMF	62.5	160	2 km (1.2 mi)
											50	500	1000 m (3281 ft)
S-1000MM-M2SC2	Port 1	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)
	Port 2	Dual SC	1000BASE-LX	-6.0	0.0	-0.0	-17.0	6.0	1310	MMF	62.5	160	2 km (1.2 mi)
											50	500	1000 m (3281 ft)
S-1000MM-M2LC2	Port 1	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)
	Port 2	Dual LC	1000BASE-LX	-6.0	0.0	-0.0	-17.0	6.0	1310	MMF	62.5	160	2 km (1.2 mi)
											50	500	1000 m (3281 ft)
S-1000MM-S2ST10	Port 1	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)
	Port 2	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	500	550 m (1,804 ft)
										SMF**	**	-	10 km (6.2 mi)
S-1000MM-S2SC10	Port 1	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)
	Port 2	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	500	550 m (1,804 ft)
										SMF**	**	-	10 km (6.2 mi)
S-1000MM-S2LC10	Port 1	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)
	Port 2	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	500	550 m (1,804 ft)
										SMF**	**	-	10 km (6.2 mi)
S-1000MM-S2ST40	Port 1	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)
	Port 2	Dual ST	1000BASE-EX	-2	2.0	-23.0	-3.0	21	1310	SMF**	**	-	40,000 m (131,234 ft)
S-1000MM-S2SC40	Port 1	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)
	Port 2	Dual SC	1000BASE-EX	-2	2.0	-23.0	-3.0	21	1310	SMF**	**	-	40,000 m (131,234 ft)
S-1000MM-S2LC40	Port 1	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)
	Port 2	Dual LC	1000BASE-EX	-3	2.0	-23.0	-3.0	20	1310	SMF**	**	-	40,000 m (131,234 ft)
S-1000MM-S2ST70	Port 1	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)
	Port 2	Dual ST	1000BASE-ZX	-2	5.0	-23.0	-3.0	21	1550	SMF**	**	-	70 km (43,5 mi)
S-1000MM-S2SC70	Port 1	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)
	Port 2	Dual SC	1000BASE-ZX	-2	5.0	-23.0	-3.0	21	1550	SMF**	**	-	70 km (43,5 mi)
S-1000MM-S2LC70	Port 1	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)
	Port 2	Dual LC	1000BASE-ZX	0	5.0	-23.0	-3.0	23	1550	SMF**	**	-	70 km (43,5 mi)
S-1000MM-S2ST120	Port 1	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)
	Port 2	Dual ST	1000BASE-ZX	0	5.0	-32.0	-9.0	32.0	1550	SMF**	**	-	120 km (75 mi)
S-1000MM-S2SC120	Port 1	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)
	Port 2	Dual SC	1000BASE-ZX	0	5.0	-32.0	-9.0	32.0	1550	SMF**	**	-	120 km (75 mi)
S-1000MM-S2LC120	Port 1	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)
	Port 2	Dual LC	1000BASE-ZX	0	5.0	-32.0	-9.0	32.0	1550	SMF**	**	-	120 km (75 mi)
S-1000MM-S2SC160	Port 1	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)
	Port 2	Dual SC	1000BASE-ZX	2	5.0	-32.0	-9.0	34.0	1550	SMF**	**	-	160 km (100 mi)
S-1000MM-S2LC160	Port 1	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)
	Port 2	Dual LC	1000BASE-ZX	2	5.0	-32.0	-9.0	34.0	1550	SMF**	**	-	160 km (100 mi)
S-1000MM-S2ST160	Port 1	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)
	Port 2	Dual ST	1000BASE-ZX	2	5.0	-32.0	-9.0	34.0	1550	SMF**	**	-	160 km (100 mi)

Single Fiber Models Recommended use in pairs

				Transmit (dBm)		Receive (dBm)							
Model	**Port**	**Connector**	**Type**	**Min**	**Max**	**Min**	**Max**	**Power Budget (dBm)**	**Wavelength (nm)**	**Fiber Type**	**Core Size (um)**	**Modal Bandwidth (MHz* Km)**	**Operating Distance**
S-1000MM-S1SC10U	Port 1	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)
	Port 2	Single SC	1000BASE-BX10-U	-9	-3.0	-20.0	-3.0	11	1310/1490	SMF**	**	-	10 km (6.2 mi)
S-1000MM-S1SC10D	Port 1	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)
	Port 2	Single SC	1000BASE-BX10-D	-9	-3.0	-20.0	-3.0	11	1490/1310	SMF**	**	-	10 km (6.2 mi)
S-1000MM-S1SC20U	Port 1	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)
	Port 2	Single SC	1000BASE-BX-U	-8	-3.0	-22.0	-3.0	14.0	1310/1490	SMF**	**	-	20 km (12.4 mi)
S-1000MM-S1SC20D	Port 1	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)
	Port 2	Single SC	1000BASE-BX-D	-8	-3.0	-22.0	-3.0	14.0	1490/1310	SMF**	**	-	20 km (12.4 mi)
S-1000MM-S1SC40U	Port 1	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)
	Port 2	Single SC	1000BASE-BX-U	-3	2.0	-23.0	-3.0	20.0	1310/1490	SMF**	**	-	40 km (25 mi)
S-1000MM-S1SC40D	Port 1	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)
	Port 2	Dual SC	1000BASE-BX-D	-3	2.0	-23.0	-3.0	20.0	1490/1310	SMF**	**	-	40 km (25 mi)
S-1000MM-S1SC80U	Port 1	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)
	Port 2	Single SC	1000BASE-BX-U	-2	3.0	-26.0	-3.0	24.0	1510/1590	SMF**	**	-	80 km (50 mi)
S-1000MM-S1SC80D	Port 1	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)
	Port 2	Single SC	1000BASE-BX-D	-2	3.0	-26.0	-3.0	24.0	1590/1510	SMF**	**	-	80 km (50 mi)
S-1000MM-S1SC120U	Port 1	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)
	Port 2	Single SC	1000BASE-BX-U	-3.0	2.0	-34.0	-9.0	31.0	1510/1590	SMF**	**	-	120 km (75 mi)
S-1000MM-S1SC120D	Port 1	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)
	Port 2	Single SC	1000BASE-BX-D	-3.0	2.0	-34.0	-9.0	31.0	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
	**S-1000MM-M2SC05 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.]	USA UK EU SA AUS NONE	05060194 05060191 05060192 05060195 05060196 05060198

Product Image	Description	Power Cord	Product Number
	**S-1000MM-M2LC05 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (LC) [550 m/1804 ft.] to 1000Base-SX 850nm multimode (LC) [550 m/1804 ft.]	USA UK EU SA AUS NONE	05060204 05060201 05060202 05060205 05060206 05060208
	**S-1000MM-M2ST05 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (ST) [550 m/1804 ft.] to 1000Base-SX 850nm multimode (ST) [550 m/1804 ft.]	USA UK EU SA AUS NONE	05060214 05060211 05060212 05060215 05060216 05060218
	**S-1000MM-S2SC10 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-LX/LH 1310 nm single mode (SC) [10 km/6.2 miles]	USA UK EU SA AUS NONE	05060224 05060221 05060222 05060225 05060226 05060228
	**S-1000MM-S2LC10 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (LC) [550 m/1804 ft.] to 1000Base-LX/LH 1310 nm single mode (LC) [10 km/6.2 miles]	USA UK EU SA AUS NONE	05060234 05060231 05060232 05060235 05060236 05060238
	**S-1000MM-S2ST10 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (ST) [550 m/1804 ft.] to 1000Base-LX/LH 1310 nm single mode (ST) [10 km/6.2 miles]	USA UK EU SA AUS NONE	05060244 05060241 05060242 05060245 05060246 05060248
	**S-1000MM-S2SC40 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-EX 1310 nm single mode (SC) [40 km/24.9 miles]	USA UK EU SA AUS NONE	05060254 05060251 05060252 05060255 05060256 05060258

Product Image	Description	Power Cord	Product Number
	**S-1000MM-S2LC40 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (LC) [550 m/1804 ft.] to 1000Base-EX 1310 nm single mode (LC) [40 km/24.9 miles]	USA UK EU SA AUS NONE	05060264 05060261 05060262 05060265 05060266 05060268
	**S-1000MM-S2ST40 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (ST) [550 m/1804 ft.] to 1000Base-EX 1310 nm single mode (ST) [40 km/24.9 miles]	USA UK EU SA AUS NONE	05060274 05060271 05060272 05060275 05060276 05060278
	**S-1000MM-S2SC70 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-ZX 1550 nm single mode (SC) [70 km/43.5 miles]	USA UK EU SA AUS NONE	05060284 05060281 05060282 05060285 05060286 05060288
	**S-1000MM-S2LC70 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (LC) [550 m/1804 ft.] to 1000Base-ZX 1550 nm single mode (LC) [70 km/43.5 miles]	USA UK EU SA AUS NONE	05060294 05060291 05060292 05060295 05060296 05060298
	**S-1000MM-S2ST70 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (ST) [550 m/1804 ft.] to 1000Base-ZX 1550 nm single mode (ST) [70 km/43.5 miles]	USA UK EU SA AUS NONE	05060304 05060301 05060302 05060305 05060306 05060308
	**S-1000MM-S2SC120 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-EZX 1550 nm single mode (SC) [120 km/74.6 miles]	USA UK EU SA AUS NONE	05060314 05060311 05060312 05060315 05060316 05060318

Product Image	Description	Power Cord	Product Number
	**S-1000MM-S2LC120 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (LC) [550 m/1804 ft.] to 1000Base-EZX 1550 nm single mode (LC) [120 km/74.6 miles]	USA UK EU SA AUS NONE	05060324 05060321 05060322 05060325 05060326 05060328
	**S-1000MM-S2ST120 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (ST) [550 m/1804 ft.] to 1000Base-EZX 1550 nm single mode (ST) [120 km/74.6 miles]	USA UK EU SA AUS NONE	05060334 05060331 05060332 05060335 05060336 05060338
	**S-1000MM-S1SC10U - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-BX 1310nm TX / 1490nm RX single strand fiber, single mode (SC) [10 km/6.2 miles]	USA UK EU SA AUS NONE	05060344 05060341 05060342 05060345 05060346 05060348
	**S-1000MM-S1SC10D - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter,** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-BX 1490nm TX / 1310nm RX single strand fiber, single mode (SC) [10 km/6.2 miles]	USA UK EU SA AUS NONE	05060354 05060351 05060352 05060355 05060356 05060358
	**S-1000MM-S2ST160 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter.** 1000Base-SX 850nm multimode (ST) [550 m/1804 ft.] to 1000Base-EZX 1550 nm single mode (ST) [160 km/100 miles]	USA UK EU SA AUS NONE	05060464 05060461 05060462 05060465 05060466 05060468
	**S-1000MM-S2SC160 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter.** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-EZX 1550 nm single mode (SC) [160 km/100 miles]	USA UK EU SA AUS NONE	05060444 05060441 05060442 05060445 05060446 05060448

Product Image	Description	Power Cord	Product Number
	**S-1000MM-S2LC160 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter.** 1000Base-SX 850nm multimode (LC) [550 m/1804 ft.] to 1000Base-EZX 1550 nm single mode (LC) [160 km/100 miles]	USA UK EU SA AUS NONE	05060454 05060451 05060452 05060455 05060456 05060458
	**S-1000MM-S1SC80U - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter.** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-BX 1510nm TX / 1590nm RX single strand fiber, single mode (SC) [80 km/50 miles]	USA UK EU SA AUS NONE	05060404 05060401 05060402 05060405 05060406 05060408
	**S-1000MM-S1SC80D - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter.** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-BX 1590nm TX / 1510nm RX single strand fiber, single mode (SC) [80 km/50 miles]	USA UK EU SA AUS NONE	05060414 05060411 05060412 05060415 05060416 05060418
	**S-1000MM-S1SC40U - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter.** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-BX 1310nm TX / 1490nm RX single strand fiber, single mode (SC) [40 km/25 miles]	USA UK EU SA AUS NONE	05060384 05060381 05060382 05060385 05060386 05060388
	**S-1000MM-S1SC40D - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter.** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-BX 1490nm TX / 1310nm RX single strand fiber, single mode (SC) [40 km/25 miles]	USA UK EU SA AUS NONE	05060394 05060391 05060392 05060395 05060396 05060398
	**S-1000MM-S1SC20U - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter.** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-BX 1310nm TX / 1490nm RX single strand fiber, single mode (SC) [20 km/12.4 miles]	USA UK EU SA AUS NONE	05060364 05060361 05060362 05060365 05060366 05060368

Product Image	Description	Power Cord	Product Number
	**S-1000MM-S1SC20D - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter.** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-BX 1490nm TX / 1310nm RX single strand fiber, single mode (SC) [20 km/12.4 miles]	USA UK EU SA AUS NONE	05060374 05060371 05060372 05060375 05060376 05060378
	**S-1000MM-S1SC120U - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter.** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-BX 1510nm TX / 1590nm RX single strand fiber, single mode (SC) [120 km/75 miles]	USA UK EU SA AUS NONE	05060424 05060421 05060422 05060425 05060426 05060428
	**S-1000MM-S1SC120D - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter.** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-BX 1590nm TX / 1510nm RX single strand fiber, single mode (SC) [120 km/75 miles]	USA UK EU SA AUS NONE	05060434 05060431 05060432 05060435 05060436 05060438
	**S-1000MM-M2SC2 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter.** 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.] to 1000Base-LX 1310nm Extended multimode (SC) [2km /6562 ft.]	USA UK EU SA AUS NONE	05060474 05060471 05060472 05060475 05060476 05060478
	**S-1000MM-M2LC2 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter.** 1000Base-SX 850nm multimode (LC) [550 m/1804 ft.] to 1000Base-LX 1310nm Extended multimode (LC) [2km /6562 ft.]	USA UK EU SA AUS NONE	05060484 05060481 05060482 05060485 05060486 05060488
	**S-1000MM-M2ST2 - Gigabit Ethernet Fiber to Fiber Stand-Alone Media Converter.** 1000Base-SX 850nm multimode (ST) [550 m/1804 ft.] to 1000Base-LX 1310nm Extended multimode (ST) [2km /6562 ft.]	USA UK EU SA AUS NONE	05060494 05060491 05060492 05060495 05060496 05060498

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