

S-1000 Gigabit Media Converters

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



- 1000Base-T to 1000Base-X Fiber Media Converters
- Extend network distances up to 160km
- Advanced Features: Link Pass-Through, Far-End Fault, Auto-MDIX

Perle's line of feature rich **Gigabit Media Converters** transparently connect copper to fiber. Our Gigabit Ethernet to Fiber Converters provide an economical path to extend the distance of an existing network, the life of non-fiber based equipment, or the distance between two devices.

Network Administrators can "see-everything" with Perle's advanced features such as Auto-Negotiation, Auto-MDIX, Link Pass-Through, Fiber Fault Alert, and Loopback. This allows for more efficient troubleshooting and less on-site maintenance. These cost and time saving features, along with a lifetime warranty and free worldwide technical support, make **Perle's gigabit ethernet converters** the smart choice for IT professionals.

Gigabit Media Converter Features

Auto-Negotiation (802.3ab)

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.

The media converter supports auto-negotiation of full duplex, half duplex, remote fault, full duplex pause, asymmetric pause and Auto MDI-X.

Auto-MDIX with Skew Correction

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.

The media converter will adjust for up to 64ns of delay skew between the 1000Base-T pairs.

Smart Link Pass-Through

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.

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.

Duplex

Full and half duplex operation supported.

Jumbo Packets

Transparent to jumbo packets up to 10KB.

VLAN

Transparent to VLAN tagged packets.

Remote Loopback

Capable of performing a loopback on the 1000Base-X fiber interface.

Specifications

**Lifetime limited
warranty**

**Reach, RoHS and
WEEE Compliant**

HTSUS Number:
8517.62.0020

UNSPSC Code:
43201553

ECCN:
5A991



Power	
Input Supply Voltage	6 - 30 vDC, unregulated (12 vDC Nominal)
Current	250 mA
Power Consumption	3.0 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 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.
Switches - accessible through a side opening in the chassis	
Auto-Negotiation	• <i>Enabled (Default)</i> - 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. • <i>Disabled</i> - The 1000Base-X will not use auto negotiation. The 1000Base-T will negotiate to the HCD of the Switch settings and the link partner.

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. <i>Normal (Default — Up)</i> • 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. <i>Smart Link Pass Through (Down)</i> • 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.
Pause	When Fiber Auto Negotiation is disabled Pause should only be enabled when all devices connected to the media converter support pause. • <i>Enabled (Default)</i> - The Media converter will advertise Pause capable, Asymmetric pause not needed during Auto-Negotiation. • <i>Disabled</i> - The Media converter will advertise that it does not have Pause capability during Auto-Negotiation.
Fiber Fault Alert	The Fiber Fault Alert switch has meaning when Auto-Negotiation is disabled • <i>Enabled (Default - Up)</i> - 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. • <i>Disabled (Down)</i>
Duplex	• <i>Full (Default-Up)</i> - The media converter will advertise Full Duplex Capable, Half Duplex Capable. • <i>AUTO (Down)</i> - The Media converter will advertise Full Duplex Not Capable, Half Duplex Capable.

Remote Loopback	The media converter can perform a loopback on the 1000Base-X fiber interface. • <i>Disabled (Default - Up)</i> • <i>Enabled</i> - The 1000Base-X receiver is looped to the 1000Base-X transmitter. The 1000Base-T transmitter is taken off the interface.
Connectors	
1000Base-T	RJ45 connector, 4 pair CAT5 UTP cable or better
Magnetic Isolation	1.5kv
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)	10.2
MTBF (Hours)	• Without power adaptor: 609,000 Hours • With power adaptor: 337,000 Hours <i>Calculation model based on MIL-HDBK-217-FN2 @ 30°C</i>
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 • CISPR 32 / EN 55032 • EN61000-3-2
Immunity	CISPR 35 / EN 55035
Electrical Safety	• UL/EN/IEC 62368-1 • CAN/CSA C22.2 No. 62368-1 • 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 • 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.

Product List



S-1000-M2SC05 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (SC) [550 m/1804 ft.]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050004	05050001	05050002	05050005	05050006	05050008



S-1000-M2LC05 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (LC) [550 m/1804 ft.]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050014	05050011	05050012	05050015	05050016	05050018



S-1000-S2LC10 - Gigabit Ethernet Stand-Alone Media Converter. 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 patch cord.

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050024	05050021	05050022	05050025	05050026	05050028



S-1000-S2SC10 - Gigabit Ethernet Stand-Alone Media Converter. 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 patch cord.

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050034	05050031	05050032	05050035	05050036	05050038



S-1000-S2LC40 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-EX 1310 nm single mode (LC) [40 km/24.9 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050044	05050041	05050042	05050045	05050046	05050048



S-1000-S2SC70 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-ZX 1550 nm single mode (SC) [70 km/43.5 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050054	05050051	05050052	05050055	05050056	05050058



S-1000-S2LC70 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-ZX 1550 nm single mode (LC) [70 km/43.5 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050064	05050061	05050062	05050065	05050066	05050068



S-1000-S1SC10U - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1310nm TX / 1490nm RX single strand single mode (SC) [10 km/6.2 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050074	05050071	05050072	05050075	05050076	05050078



S-1000-S1SC10D - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1490nm TX / 1310nm RX single strand single mode (SC) [10 km/6.2 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050084	05050081	05050082	05050085	05050086	05050088



S-1000-M2ST05 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-SX 850nm multimode (ST) [550 m/1804 ft.]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050104	05050101	05050102	05050105	05050106	05050108



S-1000-S2ST10 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX/LH 1310 nm single mode (ST) [10 km/6.2 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050114	05050111	05050112	05050115	05050116	05050118



S-1000-S2SC40 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-EX 1310 nm single mode (SC) [40 km/24.9 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050094	05050091	05050092	05050095	05050096	05050098



S-1000-S2ST40 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-EX 1310 nm single mode (ST) [40 km/24.9 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050124	05050121	05050122	05050125	05050126	05050128



S-1000-S2ST70 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-ZX 1550 nm single mode (ST) [70 km/43.5 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050134	05050131	05050132	05050135	05050136	05050138



S-1000-S2SC120 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-EZX 1550 nm single mode (SC) [120 km/74.6 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050154	05050151	05050152	05050155	05050156	05050158



S-1000-S2ST120 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-EZX 1550 nm single mode (ST) [120 km/74.6 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050144	05050141	05050142	05050145	05050146	05050148



S-1000-S2LC120 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-EZX 1550 nm single mode (LC) [120 km/74.6 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050164	05050161	05050162	05050165	05050166	05050168



S-1000-S2ST160 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-ZX 1550 nm single mode (ST) [160 km/100 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050784	05050781	05050782	05050785	05050786	05050788



S-1000-S2SC160 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-ZX 1550 nm single mode (SC) [160 km/100 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050794	05050791	05050792	05050795	05050796	05050798



S-1000-S2LC160 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-ZX 1550 nm single mode (LC) [160 km/100 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050804	05050801	05050802	05050805	05050806	05050808



S-1000-S1SC20U - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1310nm TX / 1490nm RX single strand fiber, single mode (SC) [20 km/12.4 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050814	05050811	05050812	05050815	05050816	05050818



S-1000-S1SC20D - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1490nm TX / 1310nm RX single strand fiber, single mode (SC) [20 km/12.4 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050824	05050821	05050822	05050825	05050826	05050828



S-1000-S1SC40U - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1310nm TX / 1490nm RX single strand fiber, single mode (SC) [40 km/25 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050834	05050831	05050832	05050835	05050836	05050838



S-1000-S1SC40D - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1490nm TX / 1310nm RX single strand fiber, single mode (SC) [40 km/25 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050844	05050841	05050842	05050845	05050846	05050848



S-1000-S1SC80U - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1510nm TX / 1590nm RX single strand fiber, single mode (SC) [80 km/50 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050854	05050851	05050852	05050855	05050856	05050858



S-1000-S1SC80D - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1590nm TX / 1510nm RX single strand fiber, single mode (SC) [80 km/50 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050864	05050861	05050862	05050865	05050866	05050868



S-1000-S1SC120U - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1510nm TX / 1590nm RX single strand fiber, single mode (SC) [120 km/75 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050874	05050871	05050872	05050875	05050876	05050878



S-1000-S1SC120D - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1590nm TX / 1510nm RX single strand fiber, single mode (SC) [120 km/75 miles]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05050884	05050881	05050882	05050885	05050886	05050888



S-1000-M2SC2 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX 1310nm extended multimode (SC) [2km /6562 ft.]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05040944	05040941	05040942	05040945	05040946	05040948



S-1000-M2ST2 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX 1310nm extended multimode (ST) [2km /6562 ft.]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05040954	05040951	05040952	05040955	05040956	05040958



S-1000-M2LC2 - Gigabit Ethernet Stand-Alone Media Converter. 1000Base-T (RJ-45) [100 m/328 ft.] to 1000Base-LX 1310nm extended multimode (LC) [2km /6562 ft.]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05040964	05040961	05040962	05040965	05040966	05040968



S-1000-M1SC05D - Gigabit Ethernet Media Converter. 1000BASE-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1550nm TX / 1310nm RX single strand fiber, multimode (SC) [550 m/1804 ft]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05040884	05040881	05040882	05040885	05040886	05040888



S-1000-M1SC05U - Gigabit Ethernet Media Converter. 1000BASE-T (RJ-45) [100 m/328 ft.] to 1000Base-BX 1310nm TX / 1550nm RX single strand fiber, multimode (SC) [550 m/1804 ft]

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05040894	05040891	05040892	05040895	05040896	05040898

Related Accessories

Accessories



DIN Rail Mounting Kit for 4 & 8 port IOLAN desktop 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.

04030840



Standalone media converter wall / rack mount bracket

05059999

Power Supplies



UK 12VDC / 12W power adapter with Barrel connector for Perle Device Servers, Media Converters, and Ethernet Extenders

04031581



EU 12VDC / 12W power adapter with Barrel connector for Perle Device Servers, Media Converters, and Ethernet Extenders

04031582



USA 12VDC / 12W power adapter with Barrel connector for Perle Device Servers, Media Converters, and Ethernet Extenders

04031584



Australia 12VDC / 12W power adapter with Barrel connector for Perle Device Servers, Media Converters, and Ethernet Extenders

04031586