SMI-10GT-XFPH Managed Media Converter

10GBase-T to XFP Copper and Fiber Converter

- Copper to fiber and copper to copper conversion
- Uses MSA compliant XFPs
- Advanced features –Smart Link Pass-Through, Fiber Fault Alert, Built-in Link Test Generator and Loopback
- **Manage via SNMP, CLI - Telnet/SSH, Internet browser**, or **PerleVIEW Central Management Platform**
- Support for Power Level 1,2,3 as well as high-power Level 4 XFPs

Perle **SMI-10GT-XFPH Managed Media Converter** transparently connects 10GBase-T Ethernet links over multimode or single mode fiber in **environments where network security is critical**. The SMI-10GRT additionally supports 10/100/1000/2500/10000 rate conversion. Each 10GBASE-T Media Converter comes with one RJ45 10GBase-T port and an empty slot for one XFP module.

SMI-10GT-XFPH Managed Media Converters support all **authentication, authorization and accounting (AAA) security** services used in corporate networks, including TACACS+, RADIUS, LDAP, Kerberos, NIS and RSA. To further protect ID's and passwords from someone 'snooping' on the network, Perle Managed Media Converters provide **secure management sessions** by supporting **SSH, SNMPv3, Telnet and HTTPS**. These types of features are used when managing your corporate firewalls, switches and routers. This is why Perle makes them available in the **SMI-10GT-XFPH Managed Media Converter**. 10GBASE-T Media Converters are also available for **unmanaged applications**.

Copper to Fiber conversion is achieved by inserting an XFP fiber transceivers that supports multimode and single-mode fiber, including CWDM/DWDM wavelengths. Copper to copper is achieved by inserting XFP 10Gbase-CX4 transceivers.

The empty transceiver port on the **SMI-10GT-XFPH Managed Media Converter** allows for flexible network configurations to meet any requirement using a variety of MSA compliant XFPs. You can use this product to convert:

- 10GBase-T (RJ45) to XFP
- 10GBase-T (RJ45) to 10GBase-CX4 (XFP)

Perle 10GBASE-T Gigabit Ethernet to Fiber Converters provide an economical path to extend the distance of an existing 10GbE link. Network Administrators can "see-everything" with Perle's advanced features such as Smart Link Pass-Through, Fiber Fault Alert, a built-in Link Test capability 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 the Perle **SMI-10GT-XFPH Managed Media Converters** the smart choice for IT professionals. This product is also available for **managed networks with AAA Security**.

For those environments requiring a medium to large-scale deployment of media converters, a centralized platform that simplifies the configuration, administration, monitoring, and troubleshooting of Perle Managed Media Converters is recommended. **PerleVIEW Device Management** software is a multi-user, Windows server-based application that delivers this level of Enterprise-grade solution.

SMI-10GT-XFPH Managed Media Converter Features

Smart Link Pass-Through

- When Smart Link Pass-Through is enabled (default), each port will reflect the state of its port peer. In this mode, if a link loss is detected on one port, the transmit signal on the other port is disabled “passing through” the state of the failed link. This enables managed switches and other devices to report link failures to their network NMS.
- When Smart Link Pass-Through is disabled, if a link loss is detected on one port the transmit signal remains enabled on the other port.

Fiber Fault Alert

With Fiber Fault Alert the state of the 10 Gigabit Ethernet receiver is passed to the transmitter. This provides fault notification to the partner device attached to the 10G Ethernet interface of the media converter.

Green Ethernet

Utilizes Green Ethernet energy saving technology based on industry standards such as:

- Short Reach Mode (less than 30 meters) as per IEEE 802.3at. This enables 10GBase-T operation with less power consumption.
- Energy Efficient Ethernet (EEE) as per 802.3az. This provides power savings during idle network activity.

Built-in Link Test

When enabled, the built-in packet generator transmits Ethernet test frames to its 10 Gigabit Ethernet peer. The remote media converter will auto-detect the test frames and loopback the test frames. Any frames received in error, will cause the Power, LK1 and LK2 LEDs to illuminate in a specific combination to identify the error. During the test different bit test patterns will be utilized every 5 seconds ensuring a thorough link test.

Test Mode Auto-detect

No switches are required to be flipped in order to go into test mode. The remote media converter will enter test mode automatically when requested by its central site peer. This virtually eliminates unnecessary truck rolls to a remote site when diagnosing a link failure.

EDC Mode Control

Electronic Dispersion Compensation (EDC) is an algorithmic method used to compensate for optical dispersion that occurs on high speed 10 Gigabit links. EDC mode settings are automatically configured by the media converter based on the information retrieved from the XFP module. This will enable proper operation for extended multimode 10GBase-LRM as well as active or passive copper cabling.

Module Temperature Protection

Protects your DOM/DMI capable XFP module by monitoring its internal temperature and will automatically shut down the XFP if the module is operating above its maximum temperature threshold.

High Power Level 4 XFPs

High powered Level 4 XFPs are supported.

Jumbo Packets

Transparent to Jumbo Frames with a maximum MTU size of 10,024 bytes

VLAN

Transparent to VLAN tagged packets.

Power Strain Relief strap

A strain relief strap is provided to ensure a solid and secure power connection to the media converter. Ideal for areas that may be exposed to any vibration.

Remote Loopback

Capable of performing a loopback on the 10 Gigabit interface. In this mode, all frames received on the port in loopback mode will be transmitted back. This provides users with the capability of utilizing their own in-house test generators for testing the link.

Configuration Mode selection

Select whether to use the on-board DIP switches or the management software for mode selection.

Converter Information

- Media converter model and serial
- User configurable name
- User configurable fiber port name
- Hardware revision number
- Firmware version number

Module DIP switch settings

View hardware DIP switch settings.

Port Control

Enable or disable individual fiber ports on the module.

Fiber Port Status

- Port Enabled (Yes/No)
- Connector
- Link Status (Up/Down)
- Fiber Fault Alert (OK, Failed)
- Fiber Loopback mode (On/Off)

Control

- Reset
- Reset to factory default
- Ability to specific read/write phy registers
- Update firmware
- Fiber Loopback mode (Yes/No)
- Upload/download configuration

Manage Tune-able DWDM XFP modules

Select transceiver ITU 50GHz center wavelengths and channel numbering on tune-able XFP transceivers.

SMI-10GT 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. This media converter also has many **NERC CIP** compliance features.

SNMP

- Full read/write capabilities via central SNMP servers and **PerleVIEW**
- Send SNMP traps (up to 4 servers)
- SNMPv3, V2C and V1
- SNMPv3 – encryption and authentication for both management and trap support
- RFC1213 MIB II
- Proprietary MIB provided

Telnet / SSH CLI access

In-band command line access via Telnet or **SSH application**

Internet Browser access

- Fast and intuitive graphical web interface for use with common internet browsers such Internet Explorer, Mozilla Firefox and Safari
- HTTP or secure HTTPS
- **PerleVIEW Central Management Platform**

Console port CLI access

- Out-of-band command line access via Cisco compatible RJ45 serial console port using common “rolled” CAT5 cable.
- Console port can be enabled (default) or disabled.

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

Alert level events are stored in the local event log and sent as:

- SNMP traps to up to 4 servers
- SYSLOG messages to a SYSLOG server
- Email to user defined email address

Advanced IP feature set

- IPV4 and IPV6 address support
- DHCP
- DNS
- Dynamic DNS
- NTP
- TFTP
- Telnet
- SSH V2 and V1
- HTTP
- HTTPS

Advanced Management User Authorization and Accounting with primary and secondary server support

- TACACS+
- RADIUS
- LDAP
- Active Directory via LDAP
- RSA Secure ID-agent or via RADIUS authentification
- Kerberos
- NIS

Encryption

- AES (256/192/128), 3DES, DES, Blowfish, CAST128, ARCFOUR(RC4), ARCTWO(RC2)
- Hashing Algorithms: MD5, SHA-1, RIPEMD160, SHA1-96, and MD5-96
- Key exchange: RSA, EDH-RSA, EDH-DSS, ADH
- X.509 Certificate verification: RSA, DSA

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**

Specifications				
Lifetime limited warranty	**Reach, RoHS and WEEE Compliant**	**HTSUS Number:** 8517.62.0020	**UNSPSC Code:** 43201553	**ECCN:** 5A992

CCATS Number: G134373

Power	
Input Supply Voltage	12 vDC Nominal
Maximum Power Consumption (watts)	18*
Power Connector	5.5mm x 9.5mm x 2.1mm barrel socket
Power Adapter	
Universal AC/DC Adapter	100-240v AC, regulated AC/12v DC adapter included
Indicators	
Power / TST	• On: Power indication and in normal operation • Blinking slowly: the unit is in loopback or test mode (either port) • Red solid: the unit has a hardware error (upon power up) • Red and blinking: the unit has a hardware error specified by combination of LK1 and LK2

LK1 (SFP/XFP)	• On: Link present • Blinking quickly: Fiber link present and receiving data.(including test data) • Blinking slowly: Fiber link disabled because the other fiber link went down. • Blinking 1 sec on 3 sec off – module shut down due to high temperature. • Off: No fiber link present or no module inserted
LK2	• On: 10GBase-T link present • Blinking quickly: Link present and receiving data • Blinking slowly: Link disabled because Link 1 went down • Off: 10GBase-T link is not active
Switches - accessible through a side opening in the chassis	
Link Mode	When the Link Mode is enabled (default), each port will reflect the state of its port peer using Smart Link Pass-Through. In this mode, if a link loss is detected on one port, the transmit signal on the other port is disabled “passing through” the state of the failed link. This enables managed switches and other devices to report link failures to their network NMS. When the switch is in the down position, Smart Link Pass-Through is disabled. If a link loss is detected on one port, the transmit signal remains enabled on the other port.
Fiber Fault Alert	*Enabled (Default - Up)* With Fiber Fault Alert the state of the 10 Gigabit ethernet receiver is passed to the transmitter. This provides fault notification to the partner device attached to the 10G ethernet interface of the media converter • *Disabled (Down)*
Test Mode	Through the use of three dip switches the unit, and its peer, can be placed into a link test mode which will verify the integrity of the link through the use of its built-in link test generator. The unit can also be placed into a simple line loopback.
EEE Green Ethernet	When enabled (default), the media converter will operate as an IEEE 802.3az Energy Efficient Ethernet (EEE) compliant device.

Loopback	Capable of performing a loopback on the 10 Gigabit interface. In this mode, all frames received on the port in loopback mode will be transmitted back. This provides users with the capability of utilizing their own in-house test generators for testing the link.
Connectors	
10GBase-T (RJ45)	IEEE 802.3an • 100 meters on CAT6A or better
Pluggable 10G Fiber Transceiver slot (Hot insertion and removable)	10 Gigabit XFP Slot • Power level 1,2,3,4
Voltages supplied to XFP slots	1.8V, 3.3V, 5V and -5.2V
Supported 10 Gigabit Fiber pluggable transceivers	IEEE 802.3ae compliant: • 10GBase-SR • 10GBase-LRM • 10GBase-LR • 10GBase-ER • 10GBase-ZR CWDM/DWDM
Supported 10 Gigabit Copper pluggable transceivers	IEEE 802.3ak compliant: • XFP 10GBase-CX4 copper
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)	61

MTBF (Hours)*	• Without power adaptor: 124,564 Hours • With power adaptor: 102,382 Hours ***Calculation model based on MIL-HDBK-217-FN2 @ 30°C*
Chassis	Metal with an IP20 ingress protection rating
Mounting	
Din Rail Kit	Optional
Wall / Rack Mount Kit	Optional
Product Weight and Dimensions	
Product Weight	0.93 kg, 2.1 lbs
Product Dimensions	8 x 12 x 4.2 cm (3.1 x 4.7 x 1.7 inches)
Shipping Weight	1.5 kg, 3.3 lbs
Shipping Dimensions	26 x 17 x 7 cm (10.2 x 6.7 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 35/EN 55035 • EN61000-3-2
Immunity	EN55024
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

*Maximum rating for both media converter and modules inserted. Actual rating is dependent on the power consumption of the XPF modules inserted.

Product List

SMI-10GT-XFPH - 10 Gigabit Ethernet Managed Stand-Alone Media Converter. 10GBase-T (RJ-45) [100 m/328 ft.] (CAT6A or better) to fiber 10GBase-X or copper 10GBase-CX4 XFP . XFP slot (empty). Supports Power Level 4 XFPs. AC Adapter include

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05071144	05071141	05071142	05071145	05071146	05071148

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