

SMI-4GPT-DSFP Fiber Mode Converter

Managed SFP to SFP Protocol Transparent Media Converter



- Easy Fiber to Fiber network extension to remote locations
- Provide wavelength conversion for CWDM and DWDM transponder applications
- Protocol-transparency support for all network protocols
- Support for SFP transceivers with data rates up to 4.25 Gbps
- Reliable operation with advanced features like **Smart Link Pass-Through** and Fiber Fault Alert
- **Manage via SNMP, CLI - Telnet/SSH, Internet browser, or PerleVIEW Central Management Platform**

Perle **SFP to SFP protocol and rate-transparent managed media converters** enable network administrators to incorporate multiple fiber types and wavelengths in, or between, networks through **fiber to fiber mode conversion**. Using this technology will result in significant cost savings when compared to replacing an optical blade on network equipment. Easily extend a LAN in **environments where network security is critical** by converting:

- Multimode to Multimode
- Multimode to Single Mode
- Single Mode to Single Mode
- Dual to single fiber (Duplex to Simplex BiDi)

SMI-4GPT 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-4GPT Managed Media Converter**. SFP to SFP Media Converters are also available for **unmanaged applications**.

SFP to SFP Conversion

The **SMI-4GPT Fiber Mode Converter** comes with two empty SFP slots. This allows for flexible network configurations using **SFP fiber transceivers supplied by Perle, Cisco** or other manufacturers of MSA compliant SFPs. Adapting to different fiber types, distances and wavelengths is made simple by **mixing and matching SFP's as needed** for maximum flexibility across a variety of topologies and network architectures. The hot-swappable nature of SFPs allow for easy configuration and future upgrades as network demands evolve by simply upgrading a single SFP instead of replacing the entire fiber mode converter.

Convert different wavelengths (WDM Transponders)

SFP transceivers also enable the **SMI-4GPT Fiber Mode Converter** to operate as a **Wave Division Multiplexing (WDM) transponder**. Also referred to as Bi-Directional (BiDi) or Simplex, WDM Transponders help network administrators take advantage of the cost savings in both material and labour associated with Single Strand Fiber. 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. WDM systems are divided into different wavelength patterns, conventional/coarse (**CWDM**) and dense (**DWDM**).

SMI-4GPT Fiber Mode Converter Features

Network Administrators can “see-everything” Perle’s advanced features such as Smart Link Pass-Through and Fiber Fault Alert. 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 **SMI-4GPT Fiber Mode Converter** the smart choice for IT professionals.

Protocol Transparency

Transparent to all protocols (including but not limited to)

- Ethernet : 10Base-FL
- Fast Ethernet : 100Base-X
- Gigabit Ethernet (1.25G , 2.5G) : 1000Base-X
- GR-253-CORE : ATM/SONET (OC-3, OC-12, OC-48)
- G.957 : SDH (STM-1, STM-4, STM-16)
- Fibre Channel: (FC-1, FC-2, FC-4)
- FDDI, IBM protocols ESCON and FICON
- Video protocols (DVB, SDI, HD-SDI, SMTPE)

Rate Transparency

Supports SFP data rates up to 4.25Gbps.

Smart Link Pass-Through

- Smart Link Pass-Through when enabled ensures that the link state on a fiber 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. This feature applies when both SFP slots are occupied.
- If set in Standard Mode, the link is kept active. The unit will transmit a 25Mhz keep-alive signal to artificially keep the link up.

Fiber Fault Alert

If the media converter module detects a loss of fiber, it will immediately notify the fiber link partner that an error condition exists.

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
- User configurable copper port name
- Hardware revision number

Module DIP switch settings

View hardware DIP switch settings

Rate Select

Specify SFP rate select (used with rate selectable SFP's with line rates up to 4.25G)

- High Speed (default)
- Low Speed

Port Control

Enable or disable individual SFP ports on the module.

SFP Status

- DOM / DMI Optical monitoring of:
- SFP temperature
 - TX supply voltage
 - TX bias current
 - TX output power
 - RX received optical power
- Port Enabled (Yes/No)
- Link Status (Up/Down)
- Far End Fault (OK, Failed)

Control

- Reset
- Reset to factory default
- Update firmware
- Upload/download configuration

SMI-4GT-DSFP 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 Authentication with primary and secondary server support

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

Advanced Management User Authorization and Accounting

- TACACS+
- RADIUS

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 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)			
Current	0.5A at 12v DC			
Power Consumption	6 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			
Media Converter Module Indicators				
Power	This green LED is turned on when power is applied to the media converter. This LED is off when there is no power supplied. A Blinking LED will indicate that a hardware error has been detected.			
LK1	LED is ON when a signal is detected on LK1. LED is OFF when there is no signal.			
LK2	LED is ON when a signal is detected on LK2. LED is OFF when there is no signal.			

Switches (on-board media converter module)	
Link Mode	<p>Smart Link Pass-Through when enabled (Default) ensures that the link state on a fiber 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. This feature applies when both SFP slots are occupied.</p> <p>If set in Standard Mode, the link is kept active. The unit will transmit a 25Mhz keep-alive signal to artificially keep the link up.</p>
Fiber Fault Alert	<p>If the media converter module detects a loss of fiber, it will immediately notify the fiber link partner that an error condition exists.</p> <ul style="list-style-type: none"> • <i>Disabled (Default)</i>. The Media Converter will not monitor for fiber fault.
Multi-speed SFP	<p>When enabled, identifies that the SFPs inserted are MSA compliant SFPs that have a multi-rate capability.</p> <p>When disable (Default), no action is performed in this context.</p>
Rate Select	<p>This enables rate selection when using dual-rate capable SFPs. If the “Multi-Speed SFP” select switch is in the “Disabled” position, this switch is ignored.</p> <ul style="list-style-type: none"> • High Speed - UP (default) • Low Speed – DOWN
2 x SFP Slots	
SFPs	<p>SFP line rates up to 4.25Gbps are supported. The SFPs occupying each slot in the media converter must be operating at the same speed.</p> <p>SFP power level 1 and 2 are supported.</p>
Management Module Indicators / reset	
Power	<ul style="list-style-type: none"> • Blinking green during startup cycle • Steady green: module has power and is ready • Red : error
ALM	<p>Red alarm indicator activated when an alert event occurs</p>

LKC	Green indicator indicating an active Ethernet link. Blinking indicates RX and TX of data
100/1000	<ul style="list-style-type: none"> • Green - 1000 Mbps link • Yellow - 100 Mbps link • Off - 10 Mbps or no Link
Reset Button	Recessed pinhole button resets management module
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)	20.5
MTBF (Hours)	<ul style="list-style-type: none"> • 290,742 Hours w/o adapter • 188,528 Hours w/ adapter <i>MTBF Calculation model based on MIL-HDBK-217-FN2 @ 30°C</i>
Chassis	Metal with an IP20 ingress protection rating
Product Weight and Dimensions	
Product Weight	0.75 Kg
Dimensions (W x H x D)	175 x 145 x 24 mm
Packaging	
Shipping Weight	1.2 Kg
Shipping Dimensions	20 x 30 x 7 cm

Regulatory Approvals	
Emissions	<ul style="list-style-type: none"> 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 style="list-style-type: none"> 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

Product List



SMI-4GPT-DSFP - Protocol Transparent IP-Managed Stand-Alone Media Converter with dual SFP slots (empty). Supports two SFPs with identical speeds up to 4.25 Gbps. AC adapter included

Power Cord & Part Number(s)

USA	UK	EU	SA	AUS	None
05071154	05071151	05071152	05071155	05071156	05071158

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

04031581



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

04031582



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

04031584



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

04031586