SMI-4GPT-DSFP Fiber Mode Converter

perle.com/products/sfp-to-sfp-managed-media-converter.shtml

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 Centralized Management Package

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.

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 Centralized Management Package
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 authentification • 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

Power

Input Supply Voltage	(12 vDC Nominal)
Current	.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	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. 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. *Disabled (Default).* The Media Converter will not monitor for fiber fault.
Multi-speed SFP	When enabled, identifies that the SFPs inserted are MSA complaint SFPs that have a multi-rate capability SFF-8074 and SFF-8472. When disable (Default), no action is performed in this context.
Rate Select	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. High Speed - UP (default) Low Speed – DOWN
2 x SFP Slots	
SFPs	SFP line rates up to 4.25Gbps are supported. The SFPs occupying each slot in the media converter however must be operating at the same speed. SFP power level 1 and 2 are supported.

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
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*	290,742 w/o adapter 188,528 w/ adapter
Chassis	Metal with an IP20 ingress protection rating
Product Weight and Dimensions	
Product Weight	0.75 Kg

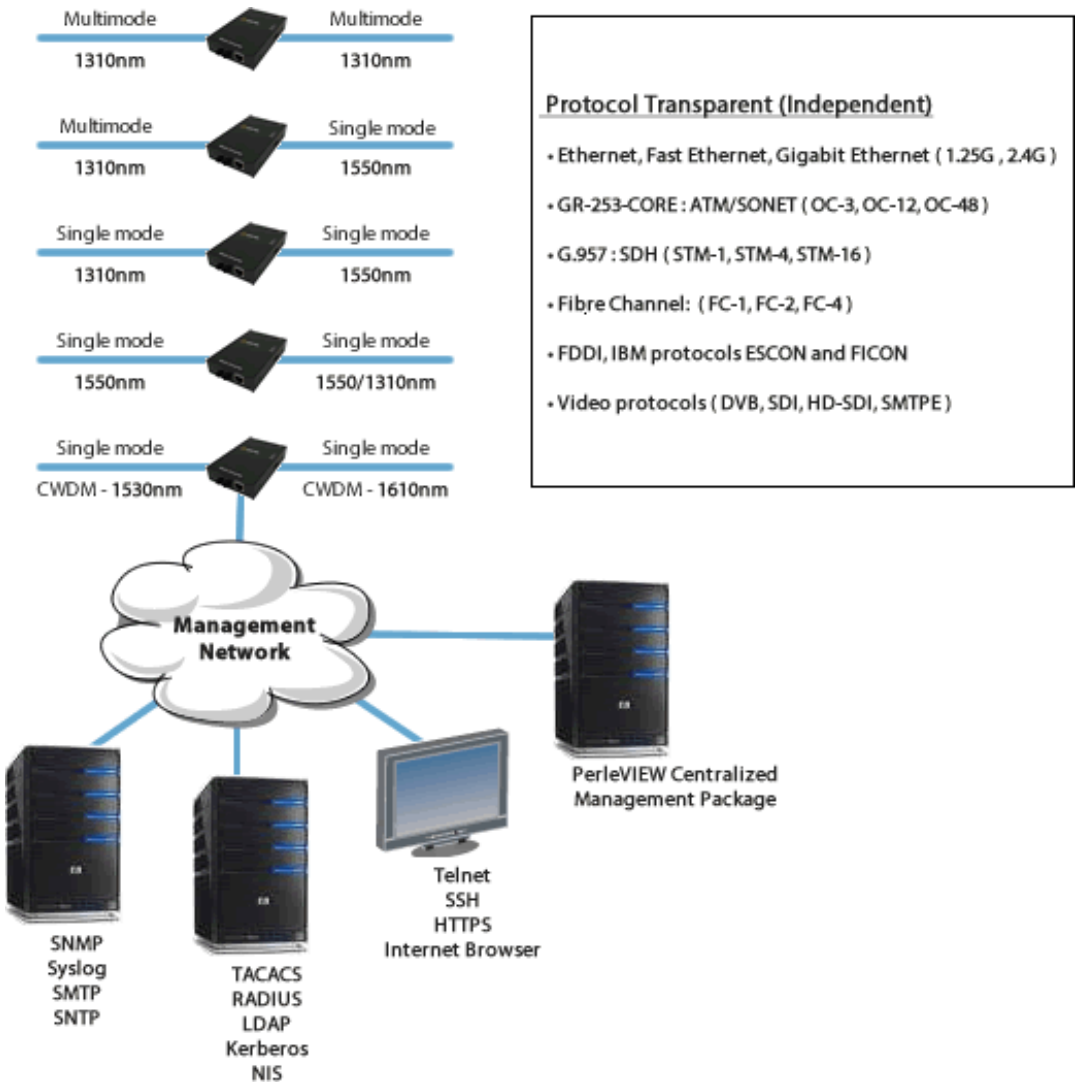
Product Dimensions	175 x 145 x 24 mm
Packaging	
Shipping Weight	1.2 Kg
Shipping Dimensions	20 x 30 x 7 cm
Regulatory Approvals	
Emissions	FCC Part 15 Class A, EN55022 Class A
	CISPR 22 Class A CISPR 32:2015/EN 55032:2015 (Class A) CISPR 24:2010/EN 55024:2010
	EN61000-3-2
Immunity	EN55024
Electrical Safety	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	Dependent on SFPs used. SFPs that meet Class 1 Laser safety requirements per IEC-60825 FDA/CDRH standards and comply with 21CFR1040.10 and 21CFR1040.11 are recommended for use with this product.
Environmental	Reach, RoHS and WEEE Compliant
Other	ECCN: 5A991
	HTSUS Number: 8517.62.0020
	CCATS: G134373
	Perle Limited Lifetime Warranty

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

Fiber to Fiber Mode Conversion

Interconnect Multiple Fiber Types and Wavelengths

Managed SFP to SFP protocol-transparent fiber mode converters enable network administrators to incorporate multiple fiber types and wavelengths within or between networks. See below some examples. The fiber link on the managed standalone unit can provide vital information and status to network management tools such as SNMP.



Product Image	Description	Power Cord	Product Number
	**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	USA UK EU SA AUS NONE	05071154 05071151 05071152 05071155 05071156 05071158

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