IPITEK
INTEGRATED PHOTONICS TECHNOLOGY
ISO 9001 Registered

OPTICAL ETHERNET TRANSPORT
MSP-1GE

MSP-1GE-6P

MSP-1GE-16P

FEATURES & BENEFITS

- Ultra compact fully managed Carrier Ethernet Demarcation device - 3 side by side in 1RU
- Support for single fiber SFP's
- Full Ethernet OAM support based on IEEE 802.3ah and ITU Y.1731
- Built-in performance testing
- Unique features when used in combination with IPITEK's MSP-10GE platform
- 8-level Quality of Service (QoS)
- Supports 100/1000BaseFX and 10/100/1000BaseT
- VLAN-based forwarding with support for Q-in-Q
- Extensive management features; CLI, WEB, SNMP-v2c with in-band and out-of-band support
- Dual hot-swappable AC or DC power supplies

Description
IPITEK's MSP-1GE is an ultra compact 1RU Carrier Ethernet Demarcation device designed specifically to address service providers' need to offer business services and carry multiple types of Ethernet-based services across metro systems. Each service is separated by port interface and then combined onto 1GE optical trunks as unique Ethernet Virtual Connections (EVC) for routing to either single or multiple destinations. A Service VLAN tag is added before transport to perform internal routing and QoS. This tag is then stripped at all destinations before output. Customers VLAN tags are forwarded transparently across the network. 8-level QoS can be used to prioritize each EVC en-route, allowing best-effort services to be intermixed with guaranteed services to increase total capacity far beyond TDM approaches.

The MSP-1GE-6P is ideal when only a few circuits are required, while the MSP-1GE-16P is most cost-effective in applications where the customer has higher port density requirements, in multi-tenant environments or as an aggregation device at the hub site.

Interfaces
4 or 12 ports of 10/100/1000Base-T and 2 or 4 100/1000 FX SFP plug-in modules are supported. Async craft and 10/100 Base-T ports are provided for management, while dual power inputs are present for external hot-swappable AC or DC power supplies.

Topologies
Any port interface can be enabled as network interfaces, thus supporting any point-to-point, ring or mesh topology. Repeater and transponder mode are also supported. Each individual EVC can be set uniquely to forward, drop, or drop and continue at any node. Services can be delivered as protected point-to-point uplinks to an MSP-1GE at the hub site or the MSP-10GE-OP, IPITEK's 10GE platform, if aggregation of many circuits is required. The MSP-1GE-16P also allows for a protected 1GE distribution ring in addition to the protected uplinks.

Connection Management
Built-in connection management enables the service provider to verify the integrity of a circuit without the use of additional test equipment. Furthermore, continuous non-intrusive in-service testing of availability, utilization, packet loss, latency and jitter allows easy verification of critical quality parameters.

Reliable Transport
Point-to-point 1GE trunk configuration supports 2 and 4GE capacity and <50ms protection switching, while RSTP, LACP and ERPS are supported for ring topologies. 50ms point-to-point protection switching is also offered when the MSP-1GE is connected to the MSP-10GE-OP, IPITEK's 10GE platform.

Provisioning
Local and remote provisioning is supported through CLI, WEB and SNMP-v2c using in-band or out-of-band management. An async RS232 interface also enables local access. To further simplify provisioning, IPITEK's NodeWizard EMS can support end-to-end circuit-level provisioning for the entire network.

Monitoring
The MSP-1GE provides full OAM functions based on IEEE 802.3ah and ITU-T Y.1731. This gives the operator full control over the end-to-end services, link, and node. Optical power levels and Ethernet layer statistics are provided for each interface as well as detailed status monitoring of the base unit. Furthermore, wire-speed loopback and TDR measurements is supported. SNMP-v2c notifications are also provided.

SPECIFICATIONS

Ethernet Interface Support
4 or 12 x 10/100/1000BaseT ports
2 or 4 x 100/1000BaseFX SFP plug-in slots

Power

Input voltage (AC version):	100 to 240 VAC, 50-60 Hz
Input voltage (DC version):	-42 to -56 VDC (GR-513)
Power consumption:	25 Watts max

Environmental

Operating temperature:	0° to 50°C
Storage temperature:	-10° to +75°C
Relative humidity:	10 to 90%

Physical

Chassis dimensions:	5.7" x 10" x 1.75" (3 in 1RU) (14.48cm x 25.4cm x 4.44cm)
Chassis weight:	5 lbs.
Rack mount requirements:	19 EIA cabinet or open-frame rack

Provisioning

CRAFT	DB9 RS232 Async
Network mgmt	10/100BASE-T (OOB rear port)
Protocol	Telnet, SSH, HTTP/S, SNMP-v2c
Software download	Dual flash bank, FTP, TFTP
Upload/download config	FTP, TFTP

In-band mgmt via a unique VLAN is supported on any front port

Security
- Tiered access privileges
- RADIUS
- HTTPS
- Secure Shell v2
- Access Control Lists
- Custom SNMP string and access privileges
- Disable Telnet, HTTP, HTTPS and any of the front ports
- Automatic logout from management interface

Monitoring
- Extensive monitoring of base unit including dying gasp
- Full OAM per IEEE 802.3ah and ITU-T Y.1731
- Optical power, temperature and current levels on optical ports
- Layer 2 statistics and utilization on all ports
- Event notification on user configurable thresholds
- Local logs of all command entries and events
- Syslog
- Wire-speed facility and equipment loopback on any port
- Cable TDR measurements on all copper RJ45 ports

Quality of Service
- 8 priority levels with remapping based on input 802.1p or DSCP
- Strict/weighted queueing with guaranteed bandwidth allocation
- Rate shaping and policing per port
- Rate policing per queue (4 queues per port)
- Broadcast and multicast policing per port

ORDERING INFORMATION

Base Units

MSP-1GE-6P:	Base Unit, 4 ea 10/100/1000Base-T ports and 2 ea 100/1000Base-FX SFP slots
MSP-1GE-16P:	Base Unit, 12 ea 10/100/1000Base-T ports and 4 ea 100/1000Base-FX SFP slots

Note: Power supplies should be ordered separately for both base units

Copper SFP

MSP-SFP-E-CO:	1000BASE-T copper, RJ-45

Dual fiber SFP's

MSP-SFP-E-SX:	<550meters via MMF, 850nm, dual LC/UPC connectors, diagnostic with optical PM

Note: The exact distance on MMF depends on the fiber core diameter & modal bandwidth

MSP-SFP-E-LX:	10km via SMF, 1310nm, dual LC/UPC connectors, diagnostic with optical PM
MSP-SFP-E-EX:	40km via SMF, 1310nm, dual LC/UPC connectors, diagnostic with optical PM
MSP-SFP-E-ZX:	80km via SMF, 1550nm, dual LC/UPC connectors, diagnostic with optical PM
MSP-SFP-E-CXX:	80km via SMF, 8 ch CWDM, dual LC/UPC connectors, diagnostic with optical PM
MSP-SFP-E-HXX:	120km via SMF, 8 ch CWDM, dual LC/UPC connectors, diagnostic with optical PM
MSP-SFP-E-DXX:	80km via SMF, 40 ch DWDM @ 100GHz, select ITU ch #, dual LC/UPC connectors, diagnostic with optical PM

Single fiber SFP's

MSP-SFP-E-BLx:	10km via SMF, A=1310nm, B=1490nm, single LC/UPC connector, diagnostics with optical PM
MSP-SFP-E-BEx:	40km via SMF, A=1310nm, B=1490nm, single LC/UPC connector, diagnostics with optical PM

Note: x = A or B. Type A must be paired with type B on the same link

Accessories

MSP-1GE-PWS-DC:	DC power supply, -48VDC
MSP-1GE-PWS-AC:	AC power supply
MSP-1GE-TRAY:	1RU 19 inch rack-mountable tray that can contain up to 3 MSP-1GE units next to each other
MSP-1GE-WALL:	Wall mount bracket for a MSP-1GE unit
MSP-1GE-FAN:	Replacement fan kit

IPITEK
2330 Faraday Avenue • Carlsbad • CA • 92008
(760) 438-1010 • Toll Free (888) 4-IPITEK (447-4835)
FAX (760) 438-2412 • sales@ipitek.com • www.ipitek.com