



### FEATURES & BENEFITS

- Scalable capacity using 2 x 10GE ports and 24 x 10/100/1000 tri-speed ports
- Ability to configure any port as trunk or client port
- Integrates switching, aggregation and DWDM transport in 1RU and 80W power consumption
- Ethernet OAM per 802.3ah and ITU Y.1731
- VLAN-based forwarding with support for VLAN stacking in accordance with MEF-defined E-LINE and E-LAN services
- Point-to-point and ring protection switching supported on all ports; 4-level Quality of Service (QoS)
- Extensive management features; CLI, WEB, SNMP-v2c with in-band and out-of-band support
- Tunnels MPLS and MPLS-TP over Carrier Ethernet
- Hot-pluggable optics ensures easy on-site upgrades and “pay-as-you-grow” features
- AC or dual hot-swappable DC power supply

### Description

IPITEK's MSP-10GE-CO is a compact 1RU modular system that multiplexes and transports any standard Ethernet data rate into a 10GbE LAN standard. It is designed specifically to address service providers' need to carry multiple types of Ethernet-based services across metro wide-area systems. Each service is separated by port interface and then combined onto single or dual 10GbE trunks as unique Ethernet Virtual Connections (EVC) for routing to either single or multiple destinations. 4 level QoS can be used to prioritize each EVC en-route, allowing some best-effort services to be intermixed with guaranteed services to increase total capacity far beyond TDM approaches. The same unit can also be configured as a regenerating transponder for pure 10GbE LAN-native circuits.

### Interfaces

24 ports of 10/100/1000BASE-T and dual XENPAK plug-in slots. Short reach MMF interfaces up to 40 ITU channels of 80km dispersion limit rated 10GE-LAN transceivers are offered. Async craft and 10/100 BASE-T ports are also provided for management.

### Topologies

Any port interface can be enabled as network interfaces, thus supporting any topology from point-to-point, linear ADM, ring and mesh. Repeater and transponder mode are also supported. Each EVC can be set uniquely to forward, drop, or drop and continue at any node thus creating E-Line or E-LAN circuit topologies.

### Reliable Transport

Point-to-point and ring protection switching is offered on all ports. Any two ports can be logically bundled as a protection switching group and up to 13 independent groups are supported. Any group can be enabled to participate in point-to-point or ring protection. This logical separation ensures that a fiber break in one protected ring does not impact other rings connected to the same MSP-10GE.

### Data Transparency

The MSP-10GE is IEEE 802 compliant. Service provider mode adds a VLAN tag during transport to perform internal routing and QoS. This tag is then stripped at all destinations before output. Customer tags are forwarded transparently across the MSP-10GE network. IPITEK supports both local flow control and trunk aggregation locally as data enters and leaves the MSP-10GE portion of the Ethernet network. The aggregated data becomes a single EVC for transport across the Optical Ethernet network.

### 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 interconnected network and even multiple MSP-10GE networks.

### Monitoring

Link OAM per 802.3ah and end-to-end OAM Y.1731 is supported. In addition, optical power levels, Ethernet layer statistics and alarms are provided for each interface. Local logs of all command entries and events further simplifies trouble shooting. SNMP-v2c notifications are also provided.

# SPECIFICATIONS

## Ethernet Interface Support

### 24 x 10/100/1000 tri-speed ports

10BASE-T  
100BASE-T  
1000BASE-T

### 2 x 10GE ports

10GBASE-SR (850nm, MMF, <300m)  
10GBASE-LR (1310nm, 10km)  
10GBASE-ER (1550nm, 40km)  
10GBASE-ZR (1550nm, 80km)  
10GBASE-DWDM (40 ITU Ch, 80km)

## Power

Input voltage (AC version): 100 to 240 VAC, 50-60 HZ  
Input voltage (DC version): -42 to -56 VDC (GR-513)  
Power consumption: 80 watts max  
BTU/hr: 276 BTU

## Environmental

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

## Physical

Chassis dimensions: 17" x 10" x 1.75"  
(43.18cm x 25.4cm x 4.44cm)  
Chassis weight: 12 lbs.  
Rack mount requirements: 19 or 23 " 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 front port
- Automatic logout from management interface

## Monitoring

- Extensive monitoring of base unit
- Link OAM per 802.3ah and end-to-end OAM per 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

## Quality of Service

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

# ORDERING INFORMATION

## **Base Units**

MSP-10GE-CO-AC: Base Unit, 24 Ethernet RJ45 ports and 2 ea 10GE XENPAK slots, AC powered  
MSP-10GE-CO-DC: Base Unit, 24 Ethernet RJ45 ports and 2 ea 10GE XENPAK slots, Dual DC powered, 1 DC PWS included

## **Plug-in Interfaces**

MSP-XENPAK-SR <300m via MMF, 850nm, dual SC/UPC connectors, diagnostic with optical PM  
Please note that the exact distance depends on the fiber core diameter  
MSP-XENPAK-LR: 10km via SMF, 1310nm, dual SC/UPC connectors, diagnostic with optical PM  
MSP-XENPAK-ER: 40km via SMF, 1550nm, dual SC/UPC connectors, diagnostic with optical PM  
MSP-XENPAK-ZR: 80km via SMF, 1550nm, dual SC/UPC connectors, diagnostic with optical PM  
MSP-XENPAK-XX: 80km via SMF, 40 ch DWDM @ 100Ghz, select ITU ch #, dual SC/UPC connectors, diagnostic with optical PM

## **Accessories**

MSP-10GE-PWS-DC: DC power supply, -48VDC  
MSP-10GE-PWS-ACDC AC (110/240VAC) to DC (-48VDC) converter  
MSP-10GE-FAN: Replacement fan kit



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IPITEK reserves the right to modify product specifications without prior notification.

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