



EKINOPS PM C1001PC

Protocol Converter
Converts 10G LAN PHY to 10G WAN PHY

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KEY FEATURES & BENEFITS

- Connect 10G Ethernet equipment to OC-192/STM-64 networks
- Leverage existing SONET/DWDM network
- Eliminates the need for expensive router interfaces
- XFP pluggable interfaces
- DDM support for optical interfaces
- Complete performance monitoring and management via SNMP or Ekinops Java Craft Interface (EEM)
- Ingress and Egress 10G LAN monitoring (bits, bytes, frames, dropped frames, pause frames)
- Hot swappable, Plug and Play operation
- In-band 10Mb channel (DCC) for remote management

APPLICATIONS

- 10GbE LAN PHY to 10GbE WAN PHY converter
- Utilizes installed OC-192/STM-64 SONET/SDH or DWDM networks for 10G LAN transport

OVERVIEW

The EKINOPS PM C1001PC Protocol Converter allows service providers to use their existing OC-192/STM-64 networks for the transport of 10 Gigabit Ethernet. For carriers and their customers, this eliminates the need for expensive 10G WAN interface on their router.

The EKINOPS PM C1001PC is a two slot module that fits in both of Ekinops 360 chassis (C200HC and C600HC). It is a cost-effective solution for connecting 10 Gigabit LAN switches to OC-192/STM-64 SONET/SDH and DWDM networks by converting between 10G LAN PHY to 10G WAN PHY.

The 10GbE LAN payload from the access port is mapped into an OC-192/STM-64 framing format and is transported from the line port at wire speed. The module incorporates a flow control mechanism and if the LAN traffic exceeds the capacity of the OC-192/STM-64 link, it will generate MAC pause frames to the source device.

The EKINOPS PM C1001PC can also drop frames coming through its PM C1001PC ingress client port in order to match the data rate of the 10G WAN egress port.

The EKINOPS PM C1001PC comes with standard XFP interfaces for both the access and line ports.



Figure: 10G LAN to WAN Conversion

MANAGEMENT

The EKINOPS PM C1001PC module can be managed through SNMP or via the Ekinops standard element level management interfaces, which include a Command Line Interface (CLI) and an Ekinops java-based Graphical User Interface (GUI). The CLI is accessible via Secure Socket Shell (SSH) and Telnet remotely or via a local serial port locally on the management board.

Complete performance monitoring and management are provided, including laser shutoff and local and remote loopback, useful for maintenance and fault isolation.

Digital Diagnostics Management (DDM) is supported on XFP interfaces. This includes link status, transmit (TX) and receive (RX) signal power monitoring, and operational temperature, as well as manufacturer and transceiver model information essential for inventory management. A 10 Mbps in-band Data Communications Channel (DCC) is embedded in the line side for remote management.

The EKINOPS PM C1001PC module is also supported by **Celestis NMS**, the Ekinops advanced Network Management System.

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SPECIFICATIONS

• CLIENT INTERFACE

Protocol	10 GbE LAN
Optical Interface	XFP

• LINE INTERFACE

Protocol	10 GbE WAN
Optical Interface	XFP

• MANAGEMENT

MIB	10 GbE WAN
Remote Management	10 Mb Ethernet DCC

• PHYSICAL SPECIFICATIONS

Optical Connectors	Dual LC (<i>Client and Line</i>)
Power Consumption	23.5 W Typical
Size	Two slots in Ekinops Chassis
Operating Temperature	-5°C to +50°C / +23°F to +122°F
Storage Temperature	-20°C to +70°C / -4°F to +158°F

• INDICATORS

Status	HW ready, SW ready
Alarm	Loss of incoming signal (<i>Client & Line</i>) / Transceiver Fail (<i>XFP/OTX, line & client</i>)

• REFERENCE STANDARDS

XFP MSA rev 4.0; ITU-T G707 12/2003 edition, Telcordia GR253 issue 3; IEEE 802.3-2002; IEEE 803.3ae-2002

ORDERING INFORMATION

PLUGGABLE MODULE (PM)

EKINOPS CHASSIS

PRODUCT CODE	DESCRIPTION
PM_C1001PC-XX	10GbE LAN to 10GbE WAN protocol converter with DCC, XFP client & line port interfaces (<i>not included</i>)
C600HC	High Capacity Modular Chassis 7RU
C200HC	High Capacity Modular Chassis 2RU
PM_MNGT4	Management Card
400EEM	Ekinops Java Craft Interface

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