KEY FEATURES & BENEFITS

- Industries best performing FEC
- 10 dB 10G Transponder for short and long haul applications
- Supports OC-192/STM-64, 10GbE LAN PHY, WAN PHY and 10G FC
- Performs full 3R (*Retime, Reshape and Retransmit*) signal regeneration
- XFP line interface (*1310 nm, 1550 nm or DWDM*)
- Link distances up to 300 km without in-line amplifiers and with full channel counts
- Distances of more than 2000 km for multi span DWDM applications with full channel counts
- Digital Diagnostic Monitoring and management via SNMP
- Remote management through embedded 10 Mb DCC (*EKINOPS PM C1001HC*)
- Hot swappable
- Wire speed performance with low latency and jitter

APPLICATIONS

- Wireless back haul
- Triple or Quadruple play
- Business Ethernet Services
- Metro, Regional and Long Haul transport
- 10G distance extension
- DWDM Infrastructure
- Upgrade existing CWDM and DWDM networks
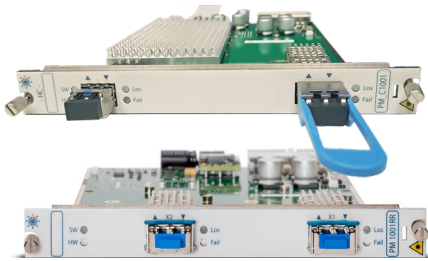- 10G signal regenerators

OVERVIEW

The EKINOPS PM C1001HC and PM1001RR transport modules are part of the Ekinops 360 platform and are used as OC-192/STM-64/10GbE/10G FC signal regenerators or as metro, regional, or long haul DWDM transponders. The PM C1001HC serves as a regional long haul transponder and the PM1001RR serves as a metro, regional, or long haul regenerator as well as a metro transponder.

The PM C1001HC supports OC-192/STM-64 and 10 GbE LAN/WAN on the client side and a 10G upklink on the line side *(11.09G with 10dB FEC)*. The PM 1001RR supports all 10G protocols from 9.95 Gbps to 10.709 Gbps, including 10GbE LAN PHY, WAN PHY, 10G FC, OTU2 and OC-192/STM-64.

APPLICATIONS

The EKINOPS PM C1001HC can be used to transport 10G traffic in Metro Regional and Long haul DWDM networks. It can also be used to increase capacity of existing WDM networks. Configured with an ITU DWDM optic it can be connected directly to a DWDM MUX of an existing WDM system and transport additional data at a 10G rate over an additional wavelength. EKINOPS PM C1001HC modules can also be used back to back in regeneration sites of long haul networks. The PM C1001HC provides an SFP+ client interface and an XFP line interface only.

To further enhance long haul performance, the PM C1001HC includes a transport overhead (light wrapper) that provides operation, administration and maintenance capabilities and enhanced Forward Error Correction. Ekinops' implementation of **DYNAFEC®** *(10 dB)* reduces the number of transmission errors on noisy links and enables deployment of longer optical spans. Thus, it improves transport performance and drastically increases bandwidth capacity at a low cost.

The EKINOPS PM 1001RR can be used as a single card regen at regeneration sites. The PM 1001RR uses XFPs on both the client and line interfaces.
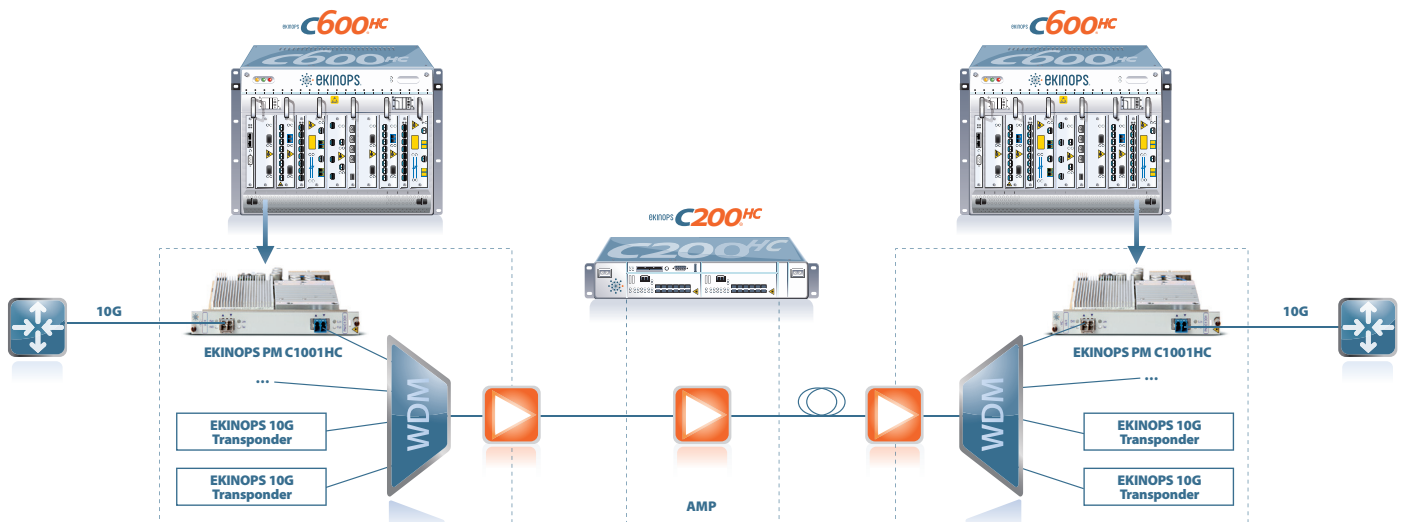

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MANAGEMENT

The EKINOPS PM 1001RR and PM C1001HC modules can be managed through SNMP or via the Ekinops standard element level management interfaces, which include a Command Line Interface *(CLI)* and an Ekinops Graphical User Interface *(GUI)*. The CLI is accessible via Secure Socket Shell *(SSH)* and Telnet remotely or via a local serial port on the management board.
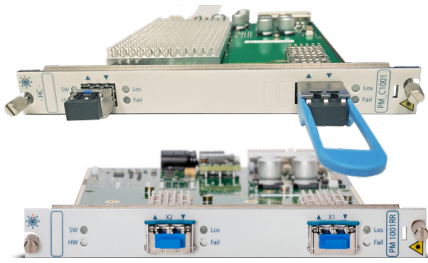
Complete performance monitoring and management are provided, including laser shutoff and local and remote loopback, useful for maintenance and fault isolation.

Digital Diagnostics Management *(DDM)* is supported for both XFP and OTX 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. The PM C1001 and PM C1001HC additionally provide full SONET/SDH performance monitoring and Ethernet RMON statistics. Also in the PM C1001HC, a 10 Mbps in-band Data Communications Channel *(DCC)* is embedded in the line side for remote management.

The EKINOPS PM 1001RR and PM C1001HC modules are also supported by Celestis **NMS**, the Ekinops advanced Network Management System.

Up to 300 km without in-line Amplifiers
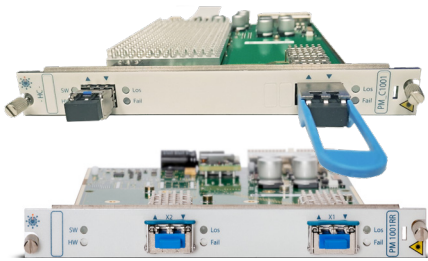**More than 2 000 km with in-line Amplifiers**

SPECIFICATIONS

• LINE INTERFACE	EKINOPS PM C1001HC	EKINOPS PM1001RR
Protocol	11.09 for DynaFEC® 10 dB	Any 10G from 9,95 Gbps to 10,709 Gbps
Optical interface	XFP	XFP

• CLIENT INTERFACE		
Protocol	10GbE LAN/10GbE WAN and OC-192/STM-64	Any 10G from 9,95 Gbps to 11,09 Gbps
Optical interface	SFP+	XFP

• MANAGEMENT		
MIB	SNMP V2c private MIB	None
Remote management	10 Mb DCC Ethernet	-

• PHYSICAL SPECIFICATIONS		
Optical connector		
Power consumption	27 W typical/max	10 W typical/max
Size	1 slot	1 slot
Operating temperature	0°C to +50°C / +32°F to +122°F	0°C to +50°C / +32°F to +122°F
Storage temperature	-20°C to +85°C / -4°F to +85°F	-20°C to +85°C / -4°F to +185°F

• INDICATORS	
Status	HW ready, SW ready
Alarm	Loss of incoming signal *(line and client)* ; Transceiver Fail *(XFP/OTX, line and client)*

• REFERENCE STANDARD

XFP MSA rev. 4.0 ; ITU-T G707 12/2003 edition ; ITU-T G709 03/2003 edition ; Telcordia GR253 issue 3 ; IEEE 802.3-2002 ; IEEE 803.3ae-2002 ; Fiber Channel ; 10GFC rev. 3.5

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EKINOPS360

EKINOPS PM C1001HC & PM 1001RR

10G Metro, Regional and Long-Haul Transponder & Regenerator

ORDERING INFORMATION

PLUGGABLE MODULE (PM)

PRODUCT CODE	DESCRIPTION
PM_1001RR-XX	10G 3R Regenerator module with XFP line port A&B interfaces *(not included)*
PM_C1001HC-X	10G (10GbE LAN & 10GbE WAN/OC-192/STM-64) with DynaFEC (10dB), transponder with DCC, SFP+ client and XFP line interfaces (SFP+/XFP not included)

EKINOPS CHASSIS

C600HC	High Capacity Modular Chassis 7RU
C200HC	High Capacity Modular Chassis 2RU
PM_MNGT4-2	Management Card
400EEM	Ekinops Craft Interface Software

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