EKINOPS PM O6006MP-ETR

Extended Temperature Range 10G multi-protocol transponder

DATA SHEET 11 | 2020

KEY FEATURES & BENEFITS

- High density with three independent transponders on a single module
- Multi-protocol client support; 10GbE or OC-192/STM-64
- OTU2/OTU2e line rate
- G.709 ITU standard Forward Error Correction *(FEC)*
- Pluggable module compatible with any EKINOPS chassis already installed in the field
- Economical agnostic SFP+ interfaces for client and line sides
- B&W or colored line interfaces
- Extended operating temperature range

APPLICATIONS

- Economical 10G transport
- Entry and termination points for legacy customer traffic into/from OTN transport network
- Gateway to switched OTN backbones
- Cell-site backhaul
- Outside cabinet deployment and other unconditioned environments

OVERVIEW

EKINOPS PM O6006MP-ETR brings extended temperature range operation to our existing and highly-popular PM O6006MP transponder (see separate data sheet). With the same multi-protocol support for 10GbE and OC-192/STM-64 services, it densifies 10G service transport in outdoor and other unconditioned spaces where the environment cannot be controlled. PM O6006MP-ETR effectively replaces up to three 10G transponders with one module in the Ekinops360 transport platform reducing space, power and heat dissipation while providing guaranteed service delivery over a wide temperature range from -40 °C to +65 °C. With both OTU2 and OTU2e line support, both OC-192/STM-64 and 10GbE client traffic can be handled natively at full line rate *(Figure 1)*.

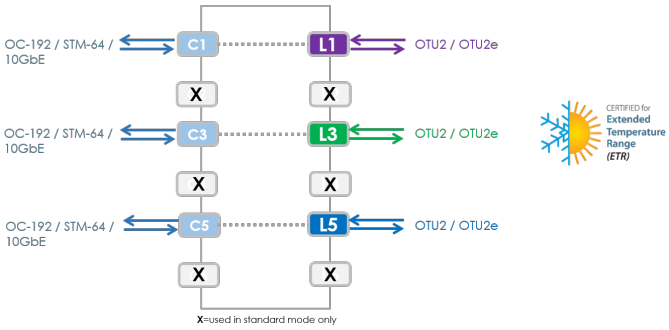


Figure 1: PM O6006MP-ETR multi-protocol transponder

APPLICATIONS

Like the standard-version PM O6006MP, the EKINOPS PM O6006MP-ETR provides a native on-ramp into the switched core backbone at the lowest possible cost. The line port output is the same standard ITU G.709 OTU2 *(for SONET/SDH services)* or OTU2e *(for 10GbE services)* and can interface as a client directly on to any third-party, standards-based OTN switch, muxponder or transponder thereby eliminating the need for a bookend device to be co-located with the core equipment.

It can both operate in standard mode as well as seamlessly interoperate with the standard version PM O6006MP allowing the standard version to be used at terminal sites while the PM O6006MP-ETR is located at the cell site for efficient and inexpensive mobile backhaul connectivity *(Figure 2)*.

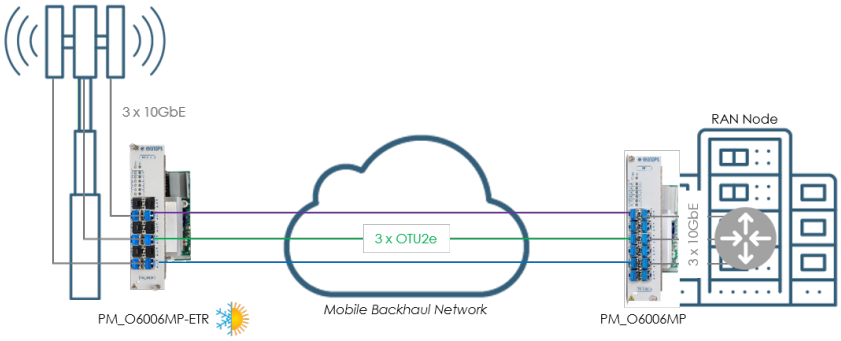
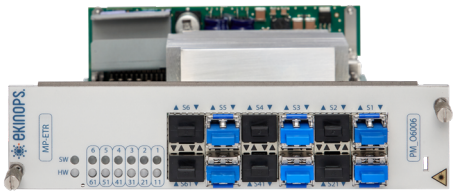


Figure 2: Using PM O6006MP-ETR for cell site backhaul

EKINOPS Empowering Networks



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MANAGEMENT

The EKINOPS PM O6006MP-ETR 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 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 SFP+ 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 O6006MP-ETR module is also supported by Celestis **NMS**, the Ekinops advanced Network Management System.

SPECIFICATIONS

CLIENT INTERFACE

Protocols	10GbE; OC-192; STM-64
Optical interface	SFP+
Number of ports	3 *(in ETR mode)*; 6 *(in standard mode)*

LINE INTERFACES

Protocol	OTU2; OTU2e
Optical interfaces	SFP+; B&W or tunable DWDM
Number of ports	3 *(in ETR mode)*; 6 *(in standard mode)*

MANAGEMENT

MIB	SNMP V2c Private MIB
Remote Management	10 Mb GCC per line

PHYSICAL SPECIFICATIONS

Module size	2 slots
Operating temperature	-40 °C to +65 °C/ -40 °F to +149 °F
Storage temperature	-40 °C to +85°C /-40 °F to +185 °F
Power	30W

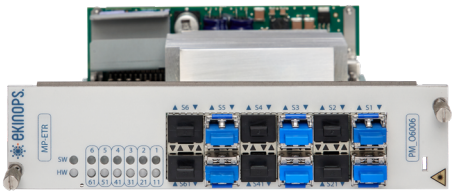
INDICATORS

Status	HW Ready, SW Ready
Alarm	Port Down *(Clients and Lines)*

REFERENCE STANDARD

ITU-T G.709 OTN standard

EKINOPS360



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ORDERING INFORMATION

PLUGGABLE MODULE (PM)

PRODUCT CODE	DESCRIPTION
PM_O6006MP-ETR	Triple 10G OTN transponder with G709 FEC & DCC, supporting 3x10GbE/OC-192/STM-64 on client to 3xOTU2e/OTU2 on the line, SFP+ for client and tunable line interfaces *(SFP+s for client and line interface not included)*

EKINOPS CHASSIS

PRODUCT CODE	DESCRIPTION
C600HC	High capacity modular chassis 7RU
C200HC	High capacity modular chassis 2RU
PM_MNGT4	Management card
C200HC-ETR	High capacity Modular Chassis 2RU compatible with Extended Temperature Range
PM_MNGT4-ETR	Management Card compatible with Extended Temperature Range
400EEM	Ekinops Craft interface software

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