EKINOPS360

EKINOPS PM 100G-XPONDER

10x10G Add/Drop Crossponder

KEY FEATURES & BENEFITS

- Enables efficient 10GbE aggregation to 100G uplink
- Allows selective add/drop of any 10GbE service at any node
- Provides Express mode for pass-through services
- Offers Split & Select mode for 1+1 client port protection over ring configuration
- Pluggable client SFP+ and line QSFP28 line optics
- G.709 OTU4 line side interface

APPLICATIONS

- Intermediate access per-service for point-to-point networks
- Add/Drop individual 10G services in ring network configurations
- Create service level ring SNCP-type protection
- Low-speed on ramp to EKINOPS FlexRate™ multi-reach transport

OVERVIEW

EKINOPS PM 100G-XPONDER provides efficient aggregation of up to ten 10GbE services into a single 100G OTN uplink with the ability to add or drop any individual 10GbE service or combination of services up to five at any node on the network. Using EKINOPS flexible timeslot technology, the PM 100G-XPONDER allows any client port to be configured in one of three operational modes — Add/Drop, Express or Split & Select. Configuration can be done remotely from the NOC via the management interface. In Add/Drop mode, timeslots are created both east and west directions allowing a service to have daisy-chain access at any intermediate point. In Express mode, inbound and outbound timeslots are logically associated so the service simply passes-through the node and saving the port costs to terminate the connection *(see Figure 1)*.
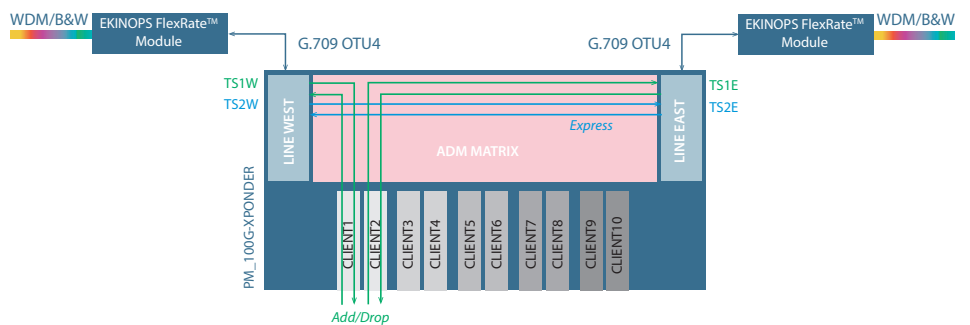

Figure 1: PM 100G-XPONDER, Add/Drop and Express modes

In Split & Select mode, the PM 100G-XPONDER uses a splitter to send the outbound timeslot in both directions and a switch on the inbound side to select one of the incoming signals *(see Figure 2)*. With this capability, each service can be protected using SNCP-type protection.
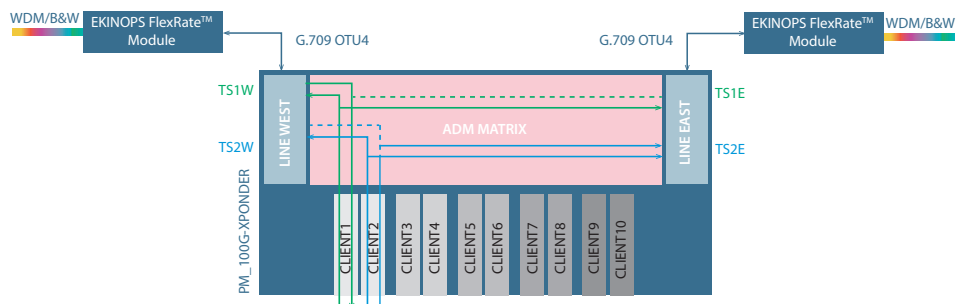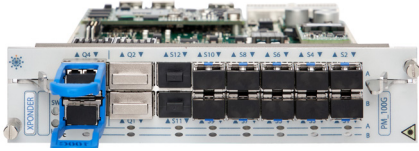

Figure 2: PM 100G-XPONDER, Split & Select mode

The PM 100G-XPONDER consists of ten SFP+ clients and two QSFP28 line ports. The aggregated OTU4 output can be handed off for further aggregation to a higher speed coherent optical channel using EKINOPS FlexRate™ modules operating at line rates from 200G to 600G.

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Empowering Networks

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MANAGEMENT

The PM 100G-XPONDER module can be managed through SNMP or via the Ekinops standard element level management interfaces, which includes a CLI (Command Line Interface) and an Ekinops GUI (Graphical User Interface). The CLI is accessible via SSH and Telnet remotely or via a local serial port on the Management board. Complete performance monitoring and management is provided, including laser shut off and local and remote loopback which is useful for maintenance and fault isolation. Digital Diagnostics Management (DDM) is supported for both QSFP28 and SFP+ interfaces. This includes link status, transmit (TX) and receive (RX) signal power monitoring, and operational temperature, as well as manufacturer and transceiver model. The EKINOPS PM 100G-XPONDER module is also supported by Celestis **NMS**, the Ekinops advanced Network Management System.

SPECIFICATIONS

• CLIENT INTERFACE

Protocols	10GbE
Optical interface	SFP+
Number of ports	10

• LINE INTERFACES

Protocol	OTU4
Optical interfaces	QSFP28
Number of ports	2

• MANAGEMENT

MIB	SNMP V2c Private MIB
Remote Management	10 Mb Ethernet DCC

• PHYSICAL SPECIFICATIONS

Module size	2 slots
Operating temperature	0 °C to +50 °C/ +32 °F to +122 °F
Storage temperature	-20 °C to +85°C /-4 °F to +185 °F
Power Consumption *(typ.)*	50W *(incl. optics)*
Power Consumption *(max.)*	75W *(incl. optics)*

• INDICATORS

Status	HW ready, SW ready
Alarm	Port down *(clients and lines)*

• REFERENCE STANDARD

ITU-T Recommendation G.709; IEEE 802.3-2002; IEEE 803.3ae-2002; IEEE 802.3ba

ORDERING INFORMATION

PLUGGABLE MODULE (PM)

EKINOPS CHASSIS

PRODUCT CODE	DESCRIPTION
PM_100G-XPONDER	100G OTN crossponder, 10x10GbE access ports, 2 OTU4 line ports, SFP+ clients and QSFP28 line interfaces *(SFP+/QSFP28 not included)*
C600HC	High capacity modular chassis 7RU
C200HC	High capacity modular chassis 2RU
PM_MNGT4	Management card
400EEM	Ekinops Craft interface software

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