



## EKINOPS PM 100G-EMUX-SFP

### 10x10 Gigabit Ethernet Aggregation Module

DATA SHEET 12 | 2023

#### KEY FEATURES & BENEFITS

- Efficient 10G Ethernet services aggregation to 100G line
- High speed transport interface to Ekinops FlexRate™ coherent line modules
- Pluggable SFP+ client ports for easy scalability - B&W or tunable WDM
- Increased bandwidth utilization
- Low cost solution

#### APPLICATIONS

- Carrier managed services
- Ethernet business services
- Campus connectivity
- High speed Ethernet backhaul
- 100G to 10 x 10G regen

#### OVERVIEW

The PM 100G-EMUX-SFP is an Ethernet-based aggregation module that allows network operators to deliver connectivity and managed services. Designed as a companion card to the PM 600FRS06, PM 400FRS04 and the PM 200FRS02 (*see separate data sheets*), it aggregates up to ten 10GbE services on to a single 100G optical carrier for greater bandwidth and spectral efficiency. The combination of the two modules provides extensive service flexibility to the network by providing a low cost on-ramp for 10GbE services to a higher speed coherent optical link

The EKINOPS PM 100G-EMUX-SFP provides ten B&W or tunable WDM SFP+ client interfaces. The 100G line is based on a 100GbE bit rate with Ekinops proprietary framing that allows the signal to be handed off as a client to Ekinops' FlexRate™ modules for further aggregation on to high-speed links up to 800G and beyond and for transport over any distance from access to ultra-long haul. This approach is designed to provide a modular, cost-efficient method that allows the operator to add services quickly by simply plugging in a new client optic without having to turn up a new wavelength. When configured with tunable WDM clients, the PM 100G-EMUX-SFP can be used in 100G to 10 x 10G regen applications. As an Ethernet-only module, the PM 100G-EMUX-SFP eliminates the need for complex timing components making it a more cost-effective solution compared to multiprotocol devices.

#### MANAGEMENT

The EKINOPS PM 100G-EMUX-SFP 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, which is useful for maintenance and fault isolation.

Digital Diagnostics Management (*DDM*) is supported for the 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. The EKINOPS PM 100G-EMUX-SFP module is also supported by [Celestis NMS](#), the Ekinops advanced Network Management System.

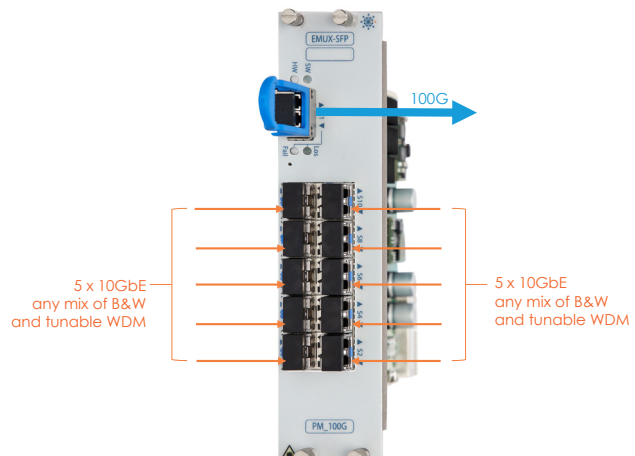


Figure 1: 10GbE service aggregation configurations using PM 100G-EMUX-SFP



## EKINOPS PM 100G-EMUX-SFP

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#### SPECIFICATIONS

##### CLIENT INTERFACE

Protocols	10GbE
Optical interface	SFP+; B&W or tunable WDM
Number of ports	10

##### LINE INTERFACES

Protocol	100GbE bit rate, proprietary framing
Optical interfaces	QSFP28
Number of ports	1

##### MANAGEMENT

MIB	SNMP V2c Private MIB
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##### 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.)	23W (includes optics)
Power consumption (max.)	25W (includes optics)

##### INDICATORS

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

##### PERFORMANCE

FEC	6.5 dB
Optical Spacing	100GHz or 50GHz available

##### REFERENCE STANDARD

IEEE 802.3-2002; IEEE 803.3ae-2002; IEEE 802.3ba

#### ORDERING INFORMATION

##### PLUGGABLE MODULE (PM)

##### EKINOPS CHASSIS

PRODUCT CODE	DESCRIPTION
PM_100G-EMUX-SFP	10GbE to 100G aggregator module, 10 client ports, 1 line port, SFP+ clients and QSFP28 line interface (SFP+s and QSFP28 not included).
PRODUCT CODE	DESCRIPTION
C600HC	High capacity modular chassis 7RU
C200HC	High capacity modular chassis 2RU
PM_MNGT4-2	Management card
400EEM	Ekinops Craft interface software

#### CONTACT



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