



DATA SHEET 12 | 2020

## EKINOPS RM 200FRS02-WB

FlexRate™ White Box Muxponder

### KEY FEATURES & BENEFITS

- Small form factor — 1 RU shelf supporting 100G and 200G line rates
- Software selectable line side modulation — DP-QPSK or 16QAM
- Built-in Variable Optical Attenuator (VOA) allows remote selectivity of the output power level
- Multiprotocol QSFP28 client ports
- Support for up to 80 200G channels
- High power efficiency

### APPLICATIONS

- Multi-reach transport — Metro Regional, Long Haul & Ultra-long Haul
- Submarine transport
- Data Center Interconnection
- 100G service aggregation
- Alien wavelength capacity upgrade

### OVERVIEW

With the RM 200FRS02-WB, EKINOPS delivers a highly power and space efficient flexible rate transponder/muxponder in a single shelf form factor. Using advanced Digital Signal Processor (DSP) technology, the EKINOPS RM 200FRS02-WB supports both the 16QAM and DP-QPSK modulation formats with the software flexibility to select either for a 100G or 200G line rate, depending on your requirements for capacity and distance.

In DP-QPSK format, the EKINOPS RM 200FRS02-WB can transport 100G up to 10000 km but can be used for shorter metro-regional spans as well. In 16QAM format, it can transport 200G up to 1000 km. The embedded Variable Optical Attenuator (VOA) allows the operator to set the output power for optical performance over any distance. With this flexibility, network operators can use the same shelf for multiple applications no matter what the span requirements are, helping them simplify sparring, streamline logistics and speed ordering and replacement, all of which result in lower operational costs. It also allows the operator to easily double capacity on any link simply by upgrading the existing shelf with no need to replace hardware. This process can be easily accomplished from a remote Network Operations Center (NOC) simply by selecting the line rate using the management interface-- GUI, CLI or NMS--so there is no need to roll a truck.

The EKINOPS RM 200FRS02-WB provides dual QSFP28 client interfaces that allow you to mix and match 100GbE and OTU4 on the same 200G wavelength. Occupying only a single rack unit, the shelf is a compact solution for delivering 200G of capacity. With its ease of operation, unmatched price points and superior performance, EKINOPS RM 200FRS02-WB makes your choice easy when it comes to coherent transport solutions.

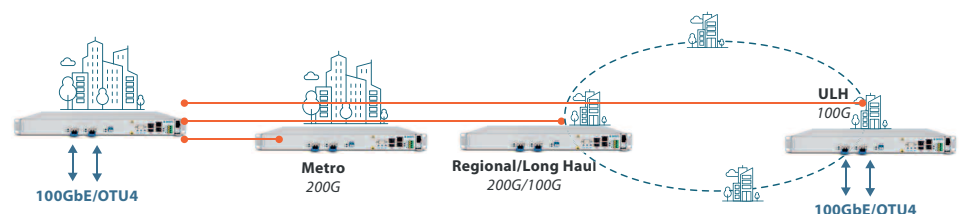


Figure 1: EKINOPS RM 200FRS02 for Metro, Regional and LH/ULH applications

### MANAGEMENT

The EKINOPS RM 200FRS02-WB shelf can be managed through SNMP or via the EKINOPS standard element level management interfaces, which include 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 QSFP28 interfaces. This includes link status, transmit (TX) and receive (RX) signal power monitoring, and operational temperature, as well as manufacturer and transceiver model. A 10 Mbps in-band Data Communications Channel (DCC) is embedded in the line side for remote management. Complete performance monitoring and management are provided by **Celestis NMS**, the Ekinops advanced Network Management System.

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### SPECIFICATIONS

#### CLIENT INTERFACES

Protocols	100GbE; OTU4
Optical interface	QSFP28
Number of ports	2

#### LINE INTERFACES

Specifications	100G	200G
Protocol	DP-QPSK	16QAM
Max distance	10 000 km	1000 km
OSNR	12 dB	21 dB

#### MANAGEMENT

MIB	SNMP V2c Private MIB
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#### PHYSICAL SPECIFICATIONS

Shelf size	1RU
Operating temperature	0°C to +50°C / +32°F to +122°F
Storage temperature	-20°C to +85°C / -4°F to +185°F

#### INDICATORS

Status	HW ready, SW ready
Alarm	Port down ( <i>Client &amp; Line</i> )

#### PERFORMANCE

Optical spacing	50GHz and 100GHz - Flexgrid capable
Power consumption (typ.)	75W
Power consumption (max.)	80W

#### REFERENCE STANDARDS

ITU-T G707 12/2003 edition; ITU-T G709; IEEE 802.3-2002; IEEE 803.3ae-2002; IEEE 802.3ba

### ORDERING INFORMATION

#### RACK MOUNTABLE UNIT (RM)

PRODUCT CODE	DESCRIPTION
RM_200FRS02	FlexRate White Box Muxponder ( <i>Metro Regional 200G or Ultra Long Haul 100G</i> ), 2 client ports ( <i>100GbE or OTU4</i> ), 1 line port with VOA & DCC, QSFP28 clients and tunable 100G ULH/200G MR line interface ( <i>QSFP28 not included, tunable line interface included</i> ).



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