



EKINOPS PM 100HDF01

100G Coherent Transponder

DATA SHEET 03 | 2024

KEY FEATURES & BENEFITS

- Cost-efficient 100G transponder
- Compatible with Ekinops 10G aggregation modules for low speed service transport over high-speed links
- Multi-reach transport from 10s to 1000s of Kms
- Hard-decision (HD) FEC for lowest latency
- Hard service demarcation provides strict SLA boundary and eases troubleshooting
- Built-in Self-Test (BIST) feature eliminates service turn-up failures
- In-band digital communications channel (DCC) for remote management connectivity

APPLICATIONS

- Service provider edge applications
- 10G replacement for 5G Xhaul
- Edge computing cluster connectivity
- MUX/DEMUX, OADM and ROADM networks

OVERVIEW

Decreasing costs have led to the widescale adoption of 100G connectivity to the customer location turning what was once considered core network-level capacity into a commodity end-user service. Customer demand can be unpredictable and service providers need solutions that will allow them to add capacity where and when they need it at a cost that will provide a quick return on their investment.

Ekinops PM 100HDF01 is a 100G coherent transponder for delivering 100G capacity wherever it's needed with superior performance compared to pluggable optics. It can be quickly deployed in an existing Ekinops network, or it can be inserted as an alien wavelength over any third-party line system. Using the same optical front end as Ekinops widely deployed FlexRate™ line cards, the PM 100HDF01 supports higher launch power and longer reach than pluggable QSFP28 100G DCO options. This capability enables connectivity across MUX/DEMUX and OADM/ROADM networks where higher performance is required to compensate for the optical loss those elements introduce. This means service providers can use it to expand their service areas and address new customers that were previously out of reach. Operating Layer 1, it provides a hard demarcation point that determines where the service providers can monitor uptime for Service Level Agreement (SLA) purposes.

The PM 100HDF01 offers a single QSFP28-based 100GbE/OTU4 client port supporting SR4, LR4, CWDM, 4WDM40, DR1, FR1, LR1 options, and a single integrated line port based on a cost-optimized, high-performance DSP combined with Ekinops coherent optics. It also includes a Built-In Self-Test (BIST) feature that validates that the service channel is ready to receive traffic without faults. BIST simplifies service commissioning by looking at client port transparency to 100GbE or OTU4 traffic in both directions which helps eliminate service turn-up failures. Along with the line counters, it provides a complete view on the health and stability of the link during deployment eliminating the need to use an external test set and reducing the cost of the deployment and commissioning process.

A single slot line module, the PM 100HDF01 is supported in both Ekinops C200HC and C600HC chassis providing up to 600G of capacity in a low power, low profile 2RU shelf or up to a terabit in only 7RU.

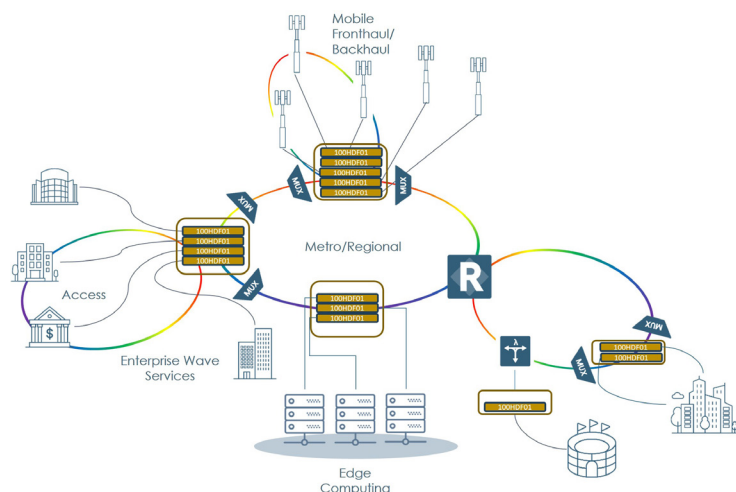


Figure 1: EKINOPS PM 100HDF01 applications



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APPLICATIONS

PM 100HDF01 fits the requirements for delivering 100G services to the edge whether they are high-capacity wavelength services for large enterprises and financial institutions, mobile fronthaul using 100GbE connectivity to tower installations from Distributed Unit/Centralized Unit (DU/CU) locations, or backhaul from DUs/CUs to remote Mobile Switching Centers.

The performance of the PM 100HDF01 allows it to fit any 100G connectivity application over access, metro/ regional and even long haul distances. With this flexibility, the same line card can be used for multiple applications to help simplify sparring, streamline logistics and speed ordering and replacement resulting in lower operational costs.

MANAGEMENT

The EKINOPS PM 100HDF01 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 is provided, including laser shut off and local and remote loopback, 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 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 100HDF01 module is also supported by [Celestis NMS](#), the Ekinops advanced Network Management System.

SPECIFICATIONS

· CLIENT INTERFACES

Protocols	100GbE; OTU4
Optical interface	1 x QSFP28; SR4, LR4, CWDM, 4WDM40, DR1, FR1, LR1

· LINE INTERFACES

Line rate	100G
Modulation	DP-QPSK

· MANAGEMENT

MIB	SNMP V2c Private MIB
Remote management	10 Mb Ethernet DCC

· PHYSICAL SPECIFICATIONS

Module size	1 slot
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 (typ.)	48W
Power (max.)	50W



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SPECIFICATIONS

INDICATORS

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

REFERENCE STANDARDS

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

ORDERING INFORMATION

PLUGGABLE MODULE (PM)

PRODUCT CODE	DESCRIPTION
PM_100HDF01	Single slot long haul 100G transponder with HD FEC, 1 client port (<i>100GbE or OTU4</i>), 1 line port with DCC, QSFP28 clients and tunable 100G LH line interface (<i>QSFP28 not Included, tunable line interface included</i>). Compatible with C200HC and C600HC chassis (<i>with associated PM_AF</i>).

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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