EKINOPS PM_LC5-MP4-D

500G Line Module for ETS Compact Chassis

DATA SHEET 05 | 2024

KEY FEATURES & BENEFITS

- 500G OTN switching and transport capacity in a single-slot
- Multi-rate support from 10Gbps to 400Gbps
- Transparent mullti-protocol client support
- Pluggable dual function interfaces— tributary or line
- Tunable DWDM or gray optics
- Embedded management & timing functions
- Standard G.709 mapping & FEC

APPLICATIONS

- 10G and 100G service aggregation over OTN networks
- Multiprotocol service delivery
- Edge OTN switching and WDM transport
- Network demarcation and interconnection

OVERVIEW

EKINOPS PM_LC5-MP4-D is a multi-rate, multi-protocol service aggregation module for the Ekinops Transport Switch Compact Chassis (ETSc) product family. It consists of SFP+/SFP28, QSFP28, QSFP-DD and CFP2 pluggable interfaces with 500Gbps of total line card capacity. As a single-slot, pluggable module for the ETS Compact Chassis platform, the PM_LC5-MP4-D provides support for a high bit rate Ethernet and OTN services up to 100GbE. Because it is fully compatible with the centralized switch fabric, it provides multiple switching options depending on the chassis configuration and functional requirements. It can either interface directly with the centralized switch fabric to create a full, non-blocking configuration, or directly with other modules for through-backplane switching between line card pairs. It can also be used in cross-ponder mode in which ODUk frames are switched locally with all traffic remaining on the card. The cross-ponder configuration is ideal for cost-effectively extending OTN switching and aggregation functions to the network edge for seamless connectivity to the network core.

The PM_LC5-MP4-D provides switching capability from ODU0 to ODU4 including interoperability with PM_LC4-MP2-A in the same ETSc6 chassis, where PM_LC4 can be used for multi 10G aggregation combined with 100G tributary directly connected to PM_LC5-MP4-D meaning any service, regardless of protocol or speed, can be managed individually across any OTN-based network, and even across multiple network boundaries. The PM_LC5-MP4-D can operate in one of two modes—either as an OTN tributary aggregating, grooming and switching client Ethernet and OTN services, or as a 500G OTN line module for Add/drop and passthrough application in multi direction NE.

In tributary mode, three QSFP28 ports support 100GbE services, two QSFPDD dedicated to 100G/200G Ethernet or OTN, also supports two CFP2 interfaces for DWDM Line interface. In OTN line mode, the ports deliver OTUk line rates.

APPLICATIONS

The PM_LC5-MP4-D is designed for efficient aggregation, grooming and switching of 10G services and above at medium to large sites on the network. The PM_LC5-MP4-D can also be used for metro/core Switching and protection applications to deliver 10G to 100G tributary links over linear, ring and mesh topologies, both in OTN and existing DWDM networks, also to aggregate small-cells and provide the capacity required as the mobile network migrates from 4G to 5G. Its coherent transport capabilities support 5G network slicing with the low latency connectivity that the various network functions require to maintain performance.
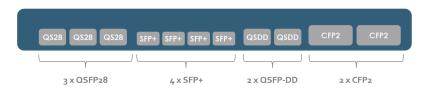

Figure 1: PM_LC5-MP4-D Interfaces

MANAGEMENT

The PM_LC5-MP4-D contains embedded management and timing functions. Redundant management and timing can be achieved on the Ekinops RM_ETSc2 by populating the chassis with two or more PM_LC5-MP4-D cards.

Ekinops Celestis NMS provides standards-based Telecommunications Management Network *(TMN)* management functions for the OTN Switch Equipment, Networks and Services. Celestis NMS has a distributed architecture in order to ensure flexibility for managing a variety of network technologies, high availability, high performance and scalability. Celestis NMS applications can be installed in a single standalone server for managing small networks or in multi-server clusters to ensure high availability and scalability when managing large networks.

SDN-ready, Celestis **NMS**, connects to the PM_LC5-MP4-D via NETCONF while the northbound interface (NBI) is based on REST/JSON and SNMP.

SPECIFICATIONS

• OPTICAL INTERFACES

Type	No. Ports	Tributary	OTN Line
SFP+	4	10GbE	OTU2/OTU2e; DWDM or B&W
QSFP28	3	100GbE	OTU4; B&W
QSFP28-DD	2	100GbE	OTU4/OTUC2; DWDM or B&W
CFP2	2	100GbE	OTU4/OTUC2; DWDM or B&W

• MANAGEMENT

Protocol	NETCONF (YANG model); SNMP
Remote management	GCC

• PHYSICAL SPECIFICATIONS

Module size	1 slot in ETSc2 and ETSc6
Power consumption (typ.)	165W
Power consumption (max.)	170W
Operating temperature	0℃ to +50℃ / +32°F to +122°F
Storage temperature	-20℃ to +85℃ / -4°F to +185°F

ORDERING INFORMATION

PLUGGABLE MODULE (PM)

PRODUCT CODE	DESCRIPTION
PM_LC5-MP4-D	Line Card 500G, 2xQSFP-DD 100G/200G, 2xCFP2 100G/200G interfaces, 3xQSFP28 100G B/W interfaces, 4xSFP+ 10G interfaces. Total 500G for OTN and/or multiprotocol ports. OTU4 coherent WDM interfaces, tunable for 80 Ch. Client interface 10GE, 100GE, OTU2/2e, and OTU4

EKINOPS CHASSIS

PRODUCT CODE	DESCRIPTION
RM_ETSc2	3RU empty chassis OTN Switching
RM_ETSc6	6RU empty chassis OTN Switching

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