DATA SHEET

XTM SERIES

200G OTN MUXPONDER

Transport of up to 20 x 10G to 100G Services Over 100G/200G in Metro and Regional Networks

The 200G OTN Muxponder (MXP200GOTN) provides mapping and multiplexing for multi-service 10G to 100G client services to either 100G or 200G coherent line signals for the XTM Series of packet-optical transport systems (P-OTS).

Pluggable Coherent Optics

The 200G OTN Muxponder leverages state-of-the-art coherent CFP2 optical modules. The pluggable CFP2 modules are used on the line side to provide a coherent signal on a single channel tunable over all channels in the 50 gigahertz (GHz) C-band spectrum. The CFP2 line signal of the 200G OTN Muxponder can be software-reconfigured to support various line speed modulation formats such as 100G quadrature phase-shift keying (QPSK) or 200G 16 quadrature amplitude modulation (16QAM). The coherent CFP2 modules are tunable over 80 DWDM channels with full 96-channel support by software upgrade in the future. Client ports support grey, CWDM and DWDM transceivers, extending usage to a wider range of metro and access applications. This unique design reduces footprint and power as well as cost for spare parts and operations.

Metro-optimized Performance

The ability to reconfigure the line signal modulation makes the 200G OTN Muxponder applicable in any part of a metro network, from access applications to metro core transport. The 200G 16QAM capability on a single 50 GHz channel doubles the bandwidth utilization in a metro network compared to a typical 100G-based network.

Key benefits:

- Reconfigurable line modulation provides flexibility in all parts of the network, including pay-as-you-grow capabilities
- Cost-efficient high-capacity 200G wavelengths increase bandwidth utilization
- Easy interworking with existing products of XTM and XTC Series
- Compliant Optical Transport Network (OTN) mapping of services permits deployment in multi-vendor environments
- Dynamic client port allocation supports flexible multi-service aggregation
- End-to-end service monitoring improves service level agreement (SLA) fulfillment
- Operates with third-party line systems
- Industry-leading low power profile

The optical performance of the line side, along with coherent detection technology, simplifies the installation of new 100G/200G wavelengths in any type of network. It also permits co-existence with existing services on 10G and 40G wavelengths over amplified reconfigurable optical add-drop multiplexer (ROADM) networks. The coherent detection technology eliminates the need for dispersion compensation units and extends regional and metro reach up to 2300 km.

To increase network flexibility and scalable growth, the MXP200GOTN is line-side interoperable with other CFP2-based products in the XTM Series such as the FXP400GOTN and EMXP440, as well as backwards interoperable using 100G QPSK with legacy CFP-based products such as the TP100GOTN, MXP100GOTN and EMXP220.

Integrated Platform Solution

The 200G OTN Muxponder occupies two slots in the XTM Series TM-3000/II and TM-301/II chassis. It is fully integrated in the Embedded Node Manager (ENM) and in the Digital Network Administrator for XTM Series (DNA-M). As part of a complete transport platform in which ROADMs, filters, amplifiers and other traffic units can be deployed in the same chassis, it enables a flexible and vertically integrated system and simplifies network planning and operations.

OTN Transport

The 200G OTN Muxponder supports standardized mapping, multiplexing and transportation of services over one or two OTU4 line signals according to ITU-T G.709 standards. The 12 SFP+-based client ports can support various 10G to 16G services in dynamic configurations, while the two QSFP+/QSFP28 ports can support various higher-speed client services such as 32G Fibre Channel or 100G services. This allows the 200G OTN Muxponder to be deployed in both greenfield networks and existing OTN environments.

The multi-stage multiplexing increases bandwidth efficiency by handing off aggregated services at OTU4 level at a single interface.

The standardized mapping of any service makes the network easier to plan and operate, which lowers the total cost of ownership.

Advanced Monitoring and Management Capabilities

The 200G OTN Muxponder supports service monitoring capabilities, such as performance monitoring that follows the service from ingress to egress. This capability makes it an ideal unit for business wholesale applications since any type of Layer 1 service can be monitored end-to-end through any complex multi-vendor OTN network. Further, its simple and reliable troubleshooting facilitates the management of valuable SLAs.

Secure Transport

The 200G OTN Muxponder is hardware-ready for data plane encryption of services. Dedicated encryption-enabled pluggable CFP2 units permit a pay-as-you-need approach to encryption that optimizes the cost of differentiated applications. Thus, AES-256-GCM encryption is planned to be activated per line interface or individual ODU4 as needed, providing a secure data path with fully integrated key exchange and rotation mechanisms. Encryption-capable CFP2 units will be available in a later release.

Low-power Design

A fully equipped 200G OTN Muxponder typically consumes 110 W. Combining low-power pluggable optics with the low-power design of the XTM Series chassis delivers a superior low-power profile for 100G/200G systems.

Specifications

Supported Traffic Formats	10/100GbE-LAN STM-64/OC-192 OTU2/OTU2e/OTU4 8/16/32G FC
Mapping	G.709 mapping and multiplexing to ODU4
Performance Monitoring	OTN: Full G.709 monitoring 10/100GbE & 8/16/32G FC: based on CRC and RMON STM-64/OC-192: based on B1/B3 Collected every 15 min/24 h and presented according to G.826 End-to-end PM presentation
Line format	100G QPSK 200G 16QAM
Power Consumption	110 W (typical) with optics
Misc. Line Interface Features	Management channels: GCC0, GCC1 and GCC2 Forward error correction: SD-FEC, Staircase FEC
Interfaces	Client interfaces: SFP+ based DWDM/CWDM and QSFP+/QSFP28-based LR-4 Line interface: CFP2-based.

Specifications and features are subject to change.

Please refer to the XTM Series roadmap for targeted availability dates of supported traffic formats outlined above.

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