Optelian®

CircuitFLEX

TMX-2200

200G Transponder and Muxponder

Optelian's TMX-2200 is an ideal DWDM transport solution for 100 GbE or OTU4 services. It interfaces to standard 100G SR4 or LR4 client optics, and incorporates a CFP2-DCO pluggable line interface with a software programmable DWDM modulation format that can operate in 100G DP-QPSK or 200G DP-16QAM mode. Up to two 100G client services can be transported over a single DWDM wavelength with optional physical layer encryption. It provides full client- and line-side performance monitoring for clear service demarcation, fault localization, and SLA assurance.

Features

- Singe-slot OMS card
- Up to 2.6 Tb/s capacity in a single OMS-7190 shelf
- Physical layer encryption*

Line Interface

- CFP2-DCO
- 100G DP-QPSK or 200G DP-16QAM
- Coherent, fully-tunable
- SDFEC or HGFEC
- Performance monitoring

Client Interface

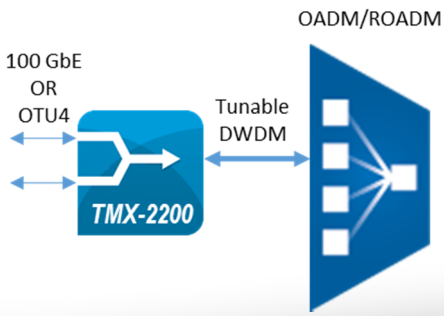
- Two QSFP28
- 100 GbE and OTU4
- SR4 and LR4
- RMON and OTU4 performance monitoring

* requires optional software feature

Overview

The TMX-2200 provides efficient transponding and DWDM transport for 100 GbE and/or OTU4 client services. It incorporates a pluggable CFP2-DCO with a software programmable modulation format, and fully-integrated coherent transceiver, including DSP. The line signal can be set to SDFEC for the longest possible reach, or staircase HGFEC for interoperability. It can be used for point-to-point DWDM links of any distance with up to 26 dB link budget, or provide all-optical transmission over 1000 km or more in amplified systems. Integrated physical layer encryption capabilities are also available*.

The two QSFP28 client interfaces allow two 100G client signals to be muxponded onto a single 200G DWDM wavelength, or a single 100G client signal to be transponded onto a single 100G DWDM wavelength. The client interface supports 100 GbE and/or G.709 OTU4 protocols using a QSFP28 SR4 or LR4.



Application

The TMX-2200 is compatible with the ITU flexible grid, and 100 GHz and 50 GHz fixed grids, allowing it to be used with existing DWDM OADM and/or ROADM infrastructure. As a Layer 1 networking device, it transports client services at the full 100G data rate with deterministic low latency. The software programmable line interface allows for a trade-off between reach and spectral efficiency, depending on the OSNR of a given wavelength circuit. Where high spectral efficiency is desired for very long wavelength circuits, the reach can be extended to any distance using the RGN-2200 configured as a bi-directional regenerator for 100G DP-QPSK or 200G DP-16QAM wavelengths.

Specifications

Parameter	Value
Card type	OMS, single slot
Line interface	CFP2-DCO
Client interface	2 QSFP28 SR4/LR4
Line modulation (programmable)	100G DP-QPSK, 200G DP-16QAM
Client protocols	100 GbE, OTU4
Performance monitoring	RMON, OTU4
OSNR sensitivity	11.5 dB (100G) 20 dB (200G)
FEC	GFEC, HGFEC, SDFEC
Encryption	ODU4 AES 256
Line PMD tolerance	30 ps (100G) 15 ps (200G)

Parameter	Value
CD tolerance	40 ns/nm (100G) 20 ns/nm (200G)
Line transmit power	+1 dBm
Line receiver range	-18 to 0 dBm
Line receiver sensitivity	-25 dBm
Channel spacing	50 or 100 GHz**
Tuning range	191.25 to 196.1 GHz**
Power consumption	45 Watts maximum
Operating temperature	-5°C to 55°C (23°F to 131°F)
Storage temperature	-40°C to 85°C (-40°F to 185°F)
Compliance	GR-63-CORE ITU G.709, RoHS

** flexible grid supported in future software release

Ordering Information

Model Number	Part Number	Description
TMX-2200	1029-3100	TMX-2200 200G Transponder and Muxponder

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