LAMBDATRAIL™ 4

DWDM Muxponder

The Lambdatrail 4 is an extremely compact, powerful and flexible DWDM muxponder which is primarily deployed in data center and cloud connectivity environments.

The true greatness of the Lambdatrail 4 (LT4) lies in its compactness: A 19" chassis, 1RU high, with four service slots for installing service modules (sleds). The fully modular design of the LT4 rigorously implements the "pay as you grow" principle; from service module to transceiver. This special feature provides scalability – from 8 Gbps to max. 1.6 Tbps per LT4, resp. up to 25.6 Tbps per otical fiber or 134 Tbps per 42RU rack.

The LT4 can be individually equipped with service modules and transceivers according to the customer's needs. Depending on the type of service module (sled) deployed, one or two service slots are required. The service modules and transceivers can be individually configured in a number of different ways. This guarantees the freedom to plan one's network according to one's needs, e.g. in a "green field" installation, or to meet application-specific requirements in an existing network environment.

Future technologies and functionality can be introduced quickly and easily by simply swapping out one of the service modules. The chassis does not need to be swapped out – protecting your investment in the long term.

Data transmission takes place via a single or dual optical fiber(s), providing coherent transmission via tunable 100, 150 or 200G CFP2-ACO transceivers – with "wire speed" AES-256 link encryption in environments with higher security requirements.

Client services, including 8/16G FC and 10/40/100G Ethernet etc., can be flexibly combined in the same chassis, resp. service module and then adjusted to meet changing demands.

The open, non-proprietary management and configuration interfaces facilitate both the commissioning process and integration into existing management environments in a data center setup.

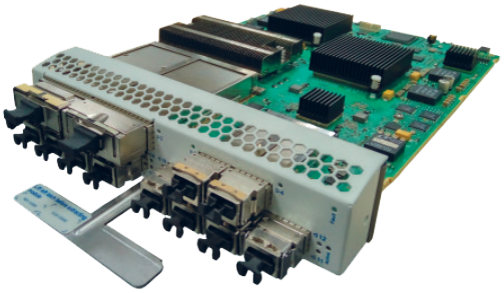
Last but not least, the Lambdatrail 4 stands out due to its low power consumption – only 20 Watt / 100G (incl. line- and client-side transceivers) and extremely low operating and maintenance costs.

The service modules and transceivers are hot-pluggable and hot-swappable. This significantly increases system availability whilst considerably reducing the costs of maintenance work and spare parts.

Lambdatrail 4 – a muxponder platform for the data connections of today and tomorrow.

Features and Highlights

- Compact 19", 1RU DWDM muxponder system
- Flexibility through pluggable optics
- Client services 8/16G Fibre Channel, 10/40/100G Ethernet, etc.
- Scalable up to 1.6 Tbps per RU
- Single and dual fiber operation
- AES-256 encryption
- Open management architecture
- High system availability
- Low power consumption
- Redundant AC or DC PS
- Easy to service
- 3-year guarantee



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Technical Specifications

Physical Dimensions
- 440 x 43.7 x 510 mm / 17.32 x 1.72 x 20.08 in (W x H x D)
- Supports 600 mm depth with cabling
- Rack installation into 2 or 4 post standard 19-inch, 21-inch, and 23-inch racks
- Height: 1RU
- Weight: 6.4 kg / 14 lb for 3.2 Tbps configuration without pluggables

System Capacity and Scalability
- Maximum line side capacity: 1.6 Tbps
- Maximum client side capacity: 1.6 Tbps
- Maximum capacity per fiber: 25.6 Tbps
- Maximum capacity per rack: 134.4 Tbps

System Configuration and Modularity
- Four individually configurable and hot-swappable single slot FRUs (400G sleds)
- Two individually configurable and hot-swappable dual slot FRUs (400G sleds)
- Single slot FRUs (400G sleds) and dual slot FRUs (400G sleds) can be mixed within the same system
- Up to 8 x CFP2-ACO Pluggable (100G/150G/200G)
- Up to 16 x QSFP28 Pluggable (100G)
- Up to 20 x QSFP+ Pluggable (4x10G/40G)

Service Modules/Sleds
- Single slot 400G Coherent Module 1 (CHM1/CHM1G) FRU Two 200G line side CFP2-ACO pluggable interfaces
- Four 100G client side QSFP28 pluggable interfaces
- Dual slot 400G Coherent Module 2 (CHM2) FRU Two 200G line side CFP2-ACO pluggable interfaces
- Ten QSFP28/QSFP+ client pluggable interfaces with a total capacity of 200G supporting a mix of 10G, 40G, 100G and 8/16G Fibre Channel client interfaces
- Twenty 10G clients are supported via the use of a 4 x 10G breakout cable per 40G client interface

Electrical Power
- 20W per 100G (CHM1G Muxponder with CFP2-ACO and client optics)
- AC PSU Input Voltage Range 100- 240VAC 50/60Hz, 1:1 FRU redundancy
- DC PSU Input Voltage Range -40V DC to -72V DC, 1:1 FRU redundancy
- HV D/C PSU, 1:1 FRU redundancy

Cooling and Fans
- Front to back straight through air flow
- 4:1 FRU fans, indefinite operation with a single fan failure
- Filler cards required in unused slots

Management and Console Ports
- 2 x RJ45 front access
- 2 x RJ45 rear access
- 1 x USB front access
- Field replaceable SD memory card

In-band General Communication Channel (GCC) Support
- Support for GCC0 on line port OTUk (CHM1/CHM1G/CHM2)
- 2 GCC channels per module (CHM1/ CHM1G/CHM2)

Client Side Interfaces 100G
- QSFP28 SR4; LR4, ER4, CWDM 4, PSM4 100 GbE
- QSFP28 4x8/16G Fibre Channel (SMF) (10 km)
- QSFP28 Active Optical Cable (3 m and 10 m) 100 GbE

Client Side Interfaces 10G/40G
- QSFP+ SW, LW 8 / 16G Fibre Channel
- QSFP+ SR4, LR4, IR4, 40G Ethernet
- QSFP+ eSR, LR4,ER4, 4 x 10 GbE/for 40 GbE <-> 10 GbE with breakout fiber (without cable), OTU2/2e and OC-192/ STM-64

Line Side Interfaces
- Tunable C-band CFP2-ACO Coherent Bidirectional Optical Transceiver Tunable C-band CFP2-ACO Coherent Optical Transceiver (100G DP-QPSK, 150G 8QAM, 200G 8QAM (CHM1G only), 200G 16QAM)
- Transparent Reach: up to 4000 km
- Chromatic Dispersion Tolerance DP-QPSK 280 ns/nm
- 8QAM/16QAM 45 ns/nm
- PMD Tolerance: 40 ps mean DGD

Data Encryption
- Integrated wire-speed AES-256 OTN payload encryption (10G, 40G, 100G)
- Diffie-Hellman (D-H) dynamic key exchange
- Secure key transmission via local OTUk GCC0 communications channel

Regulatory and Compliance
- RoHS-6 compliant and lead-free per Directive 2002/95/EC
- GR-3160-Core Generic Requirements for Telecommunications Data Center Equipment and Spaces
- Emissions: FCC Part 15 Class A, EN55022/CISPR Class A Compliant, CE Laser Safety: ANSI Class 1M, IEC Class 1M, EN 60825-1/2, 21 CFR 1040 US FDA CDR, Class 1
- Electrical Safety: UL 60950, CSA22.2 60950 and IEC 60950

Environmental
- Operating Temperature: 0°C to +40°C / 32°F to 104°F
- Transport and Storage: -40°C to +70°C / -40°F to 158°F / 40°C + 93% RH
- Humidity: 5% to 90% non-condensing

Performance Monitoring
- Ethernet PMs: 24 hour, 15 min, 1 week, 1 month
- OTN PMs: Tx/Rx, FEC

Management Options
- Management and control platforms: Coriant® Transport Network Management System (TNMS)
- Transcend™ SDN Solution
- NETCONF and RESTCONF YANG model based machine-to-machine APIs
- Command Line Interface (CLI)
- Zero Touch Commissioning (ZTC)
- SNMP fault management
- GUI based Craft Terminal

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