

Sorrento GigaMux 6440™

PRODUCT HIGHLIGHTS

- Quadruples the remaining capacity of existing 10 Gbps DWDM systems
- Plug and play retrofit into existing DWDM 10 Gbps systems
- Supports OC-768c interfaces from next-generation IP routers
- Fully redundant shelf controller, DC power and cooling
- Full front access
- Industry-standard software management tools for setup, management and monitoring
- Compact, low-power rack mount unit

The Sorrento GigaMux 6440 is an industry-compliant shelf-level product that occupies one-third of a standard seven-foot equipment rack and supports eight hot-swappable line cards that support either PSBT or DPSK modulation formats, each with 40 Gbps total capacity. The GigaMux 6440 supports redundant DC power feeds and provides full redundancy of all common equipment.

The 40 Gbps optical outputs of the GigaMux 6440 line cards operate on 50 GHz or 100 GHz ITU grid channel spacing. Thanks to its narrow spectral width and tolerance to chromatic dispersion and optical filter distortion, the GigaMux 6440 can be retrofitted into existing 10 Gbps DWDM optical channels, enabling Multi-Haul (simultaneous 10 Gbps and 40 Gbps on the same fiber) without the need for special 40 Gbps sub-bands. This compatibility with existing fiber types and 10 Gbps transport line systems effectively quadruples the capacity remaining on the original 10 Gbps DWDM span, and significantly delays fiber exhaust and the expenditure involved with lighting incremental fiber.



The GigaMux 6440 is scalable in single 40 Gbps channel increments, and provides carriers with an immediate reduction in transport costs. Sorrento's 40 Gbps transponder technology supports long-haul transmission using EDFA-only or ultra long-haul using Raman-assisted amplification.

To facilitate flexible integration into existing NMS environments the GigaMux 6440 employs a JAVA™ component module as its model as its common management interface and supports a full range of FCAPS features. Standard interfaces include Web, XML and SNMP.

The GigaMux 6440 consists of the following components:

- Shelf and fan assembly
- Shelf controller
- Multiplexing transponder, supporting asynchronous multiplexing of four (4) OC-192/STM-64/ OTU2 (DPSK only)/ 10GE LAN/WAN PHY client signals into one (1) 40 Gbps line signal
- 40 Gbps transponder supporting a serial 40 Gbps client interface (OC-768 / STM-256)
- Unidirectional 40 Gbps regenerator
- Tunable Dispersion Compensator
- Polarization Mode Dispersion Compensator

TECHNICAL SPECIFICATIONS

GENERAL

- Transparent transport of 4 asynchronous 10G tributaries or one 40G client
- Full C-band tunable laser for flexible wavelength provisioning
- Industry-standard software management tools for setup, management and monitoring
- Compact, low-power rack mount unit

INTERFACE CONNECTORS

Client Interfaces: Duplex LC connectors

Line Interface: LC/UPC connectors / NDSF (SMF-28™)

SYSTEM MANAGEMENT (GIGAMUX 6440)

- RS-232 craft interface
- Auto-sense switched 10/100 Mbps Ethernet LAN interface
- Local/remote (Telnet) TL1 CLI (GR-831-CORE)
- Embedded HTTP server with Web GUI
- Extensive inventory features
- SNMP and XML data exchange support
- BITS: Dual redundant DS1 or E1 timing references via wire-wrap posts
- Channel performance monitoring: channel bit errors via G.709 section monitor overhead, optical Tx power and Rx power

PHYSICAL DIMENSIONS

GigaMux 6440 (HxWxD): 666.75 x 538.48 x 300 mm;
26.25 x 21.20 x 11.81 in

WEIGHT

GigaMux 6440: 80 lbs / 36.3 kg (incl. fan trays and shelf controllers)

POWER

External: -40 to -75 VDC, -48 VDC nominal

Input Power: 1800 W max per shelf

ENVIRONMENTAL PARAMETERS

Operating temperature: -5 to +55 °C (shelf inlet)

Max altitude: 5905 ft / 1800 m

Relative humidity: 5 to 90% non-condensing

REGULATORY APPROVALS

Safety: UL 1950

EMI/EMC: FCC part 15, Class A; GR-1089-CORE; CISPR22

Telecom: GR-253-CORE; GR-1377-CORE; GR-2918-CORE;
GR-3009-CORE

NEBS (Level 3) GR-63-COREGR-1089-CORE

LINE INTERFACE SPECIFICATIONS

TRANSMIT

| Parameter | Min | Max | Unit |
|-------------------------------|---------|---------|------|
| Wavelength range | 1528.77 | 1563.86 | nm |
| PSBT Output power (EOL) | 2.0 | 6.0 | dBm |
| DPSK Output power (EOL) | 0 | 3 | dBm |
| Wavelength stability | | 1.5 | ±GHz |
| PSBT Optical bandwidth (FWHM) | | 25.0 | GHz |
| DPSK Optical bandwidth (FWHM) | | 30.0 | GHz |
| Optical signal to noise ratio | 45.0 | | dB |
| Optical return loss | 30.0 | | dB |
| Transmit baud rate | | 42.8 | Gb/s |

RECEIVE

| Parameter | Min | Max | Unit |
|---------------------------------------|---------|---------|------|
| Wavelength range | 1528.77 | 1563.86 | nm |
| Input power range | -18 | | dBm |
| Minimum overload | 5 | | dBm |
| PSBT Transient overload optical power | +9.0 | | dBm |
| DPSK Transient overload optical power | +10.0 | | dBm |
| PSBT OSNR (EOL) | | 20.0 | dB |
| DPSK OSNR (EOL) | | 14.4 | dB |
| Optical return loss | 30.0 | | dB |

CLIENT INTERFACE SPECIFICATIONS

TRANSMIT

| Parameter | Min | Typ | Max | Unit |
|-----------------------------|-------|--------|---------------|------|
| Transmit wavelength | 1530 | 1550 | 1565 | nm |
| Average launch power | 0 | 1 | +3 | dBm |
| Extinction ratio | 8.2 | | | dB |
| Optical path attenuation | 0 | | 4 | dB |
| Minimum receive overload | +3 | | 22 | dBm |
| Receive wavelength | 1260 | | 1605 | nm |
| Minimum receive sensitivity | -6 | | | dBm |
| PSBT Optical Rx return loss | 14 | | | dB |
| DPSK Optical Rx return loss | 27 | | | dB |
| ITU application codes | G.691 | I-64.1 | (GR-253 SR-1) | |



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Sorrento Networks is a global provider of metro optical access solutions, offering an edge-to-regional CWDM, DWDM and ROADM product portfolio to carriers and enterprises. Sorrento Networks' GigaMux and GigaEdge optical transport products efficiently add bandwidth to clients' networks, and transport mission-critical services and applications across the network infrastructure. The company is headquartered in Denver, Colo., with offices in Oakland, Calif. and Stuttgart, Germany. For more information, visit www.sorrentonet.com. Sorrento, the Sorrento Networks logos and all other Sorrento Networks product or service names are trademarks or registered trademarks of Sorrento Networks, Inc. All other trademarks are property of their respective owners. Copyright 2008 Sorrento Networks. All rights reserved.