LambdaUnite™ MultiService Switch (MSS)



Lucent Technologies LambdaUnite™ MultiService Switch (MSS) is the next generation global 10G and 40G optical switch product. It enables you to support a variety of applications in both ring and mesh network topologies while keeping your network flexible, cost-effective, and easy to maintain. The service provider market is highly competitive so the ability to offer diverse services is critical to the success of your business.

Applications

- 2.5G/10G/40G multi-ring terminal for metro, regional and backbone applications
- 10G/40G backbone feeder and transoceanic applications with sub-lambda grooming service

Benefits

- **Flexibility—**"any card in any slot" architecture minimizes equipment types
- **Scalability and capacity—**320G capacity in a single shelf with 32 I/O slots reduces floor space and operational costs
- **Availability and reliability—**sophisticated protection schemes, access to protection bandwidth and hardware redundancy
- **Multiservice support—**low-cost VSR optics at full concatenation support, Ethernet transport with dynamic LCAS suite data transport
- **Future Growth—**built-in line rate, capacity and density enhancements, and simultaneous ring and mesh support help enable future network topologies and growth

Technical Specifications

1. **Topologies Supported**
   Multiple ring (2F/4F MS-SPRing/BLSR, UPSR/SNCP, DNI/DRI), pt-to-pt (0x1, 1+1) and mesh

2. **Optics Supported**
   Passive/OLS compatible, VSR to LR optics

3. **Interfaces**

a. OC-768/STM-256	1 port per card
b. OC-192/STM-64	1 port per card
c. OC-48/STM-16	4 ports per card
d. OC-12/STM-4	16 ports per card
e. OC-3/STM-1	16 ports per card
f. 1GbE	4 ports per card
g. 10GbE	1 port per card
h. 2.5G passive DWDM interfaces	2 ports per card
i. 10G passive DWDM interfaces	1 port per card
j. STM-1 (electrical) interface	8 ports per pack

"Any card in any slot" architecture. Per port SDH/SONET provisioning

4. **Switch Architecture and Connectivity**
   Redundant 320G switch fabric & timing unit provides non-blocking connectivity on AU-4/HO VC-3 and STS-1 level or concatenation up to AU-4/4c/16c/64c, STS-1/3c/12c/48c/192c including pipe mode.
   Dual System Controllers (1 + 1).

5. **Timing & Synchronization**
   a. Timing in-/outputs: DS-1 Telcordia™, ITU-T 2Mhz, 2Mbps
   b. Timing Quality: Stratum 3
   c. System timing references: Reference selection acc. to ETSI 300417.1.1/ITU-T G.781 and Telcordia™ GR253

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Technical Specifications *(continued)*

6. **Fault & Performance Monitoring**
   a. Performance Monitoring:
   Telcordia™ GR-253-CORE, ITU-T G.784, G.826
   b. Local NE alarm indication:
   Critical, Major and Minor alarm LED
   c. Autonomous alarm forwarding
   d. Test access

7. **Network Management**
   a. Transport protocols:
   OSI, TCP/IP, DCCm and DCCr, Ethernet communication ports
   b. Management Interface: TL-1
   c. Management Systems:
   Lucent Technologies Optical Craft Interface (OCI),
   Navis™ Optical Element Management System (EMS),
   Navis™ Optical Network Management System (NMS),
   Telcordia™ compliant OS

8. **Physical Design**
   a. Sub-rack design: ETSI & GR78 compliant
   b. Width: 500mm / 19.7inch
   Height: 950mm / 37.4inch
   Depth: 545mm / 21.5inch
   c. Two systems per ETSI 2.2m and 2.6m rack or GR-63 (NEBS™-2000) 83.7inch rack

9. **Connectors**
   LC connectors. Conversion solutions to other common connector types available

10. **LambdaUnite™ MSS Rack Design**
    a. LambdaUnite™ MSS ETSI-2 rack
    600 x 2200 x 600 mm (w x h x d)
    23.6 x 86.6 x 23.6 in (w x h x d)
    b. LambdaUnite™ MSS GR63:
    23.6 x 83.7 x 23.6 in (w x h x d)
    (NEBS™-2000) rack:
    600 x 2125 x 600 mm (w x h x d)
    c. Earthquake safety standards
    Both subrack-rack combinations are certified as defined for geographic areas labeled as risk zone 4 (GR63)

11. **Power Supply**
    a. Redundant primary power supply voltage:
    –60 / –48V nominal
    b. Operation range: –40V to –72V
    c. Power consumption: Typical 2200W per NE

12. **Environmental Conditions**
    a. EMC:
    EN300 386-2, IEC 61000-4-x series (immunity)
    Telcordia™ GR-1089-core (emission and immunity)
    b. Climate:
    System meets ETSI 300 019 requirements on environmental conditions:
    ETSI Class 3.1 on Operation (5°C to 40°C; short term –5°C to 50°C)
    ETSI Class 1.2 on Storage
    ETSI Class 2.3 on Transportation
    Telcordia™ GR-63
    (Operating Temp.: 41°F to 104°F; short term: 23°F to 122°F)
    c. Humidity:
    Operating 5% to 85%; short term 5% to 90%
    d. Noise:
    System complies with ETSI 300 653 and NEBS™ 4.6
    e. Laser Safety:
    Hazard level 1 or 3A for all circuit packs acc. IEC 60825

13. **Product Certifications**
    a. CE marking; NEBS™ Level 3 compliant; FDA approval; UL® listed

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