

LIGHT MODE PRODUCT FAMILY

SHORT CATALOG

sm@optics

siae microelettronica group

LIGHTMODE OTN

The LIGHTMODE (LM) OTN is a unique carrier grade and fully protected platform supporting up to 200G WDM in an access or metro network. The LM OTN supports native SDN and can be managed by modern SDN orchestrator platforms.



The LM OTN micronode offers unlimited flexibility and capability allowing for transport of different kinds of traffic over a single network infrastructure with optimized throughput and latency.

LM OTN/PACKET 10G

- Network ports: OTU-2 Grey or C/DWDM (SFP+)
- Client ports: STM-1/4/16/64, OC-3/12/48/192, 1GE, 10GE, OTU-1/2, FC, SD (SFP/SFP+)
- Switching capacity: Dual 280G ODU-k/Flex granularity
- Power: -48V^(*)
- Synch IF: 2 MHz/2 Mbit, 1PPS/TOD
- Redundancy: Power, FAN, Control, Switch fabric
- Services: Transparent P2P (CBR), EPL, EVPL, ETree and ELAN (ODUFlex based)
- Network connection: ODU-0/1/2/Flex unidir/bidir
- Network protection: ODU-0/1/2/Flex SNC
- Client protection: Single and Multi-card LAG, MSP, Y-Cable
- PKT Features: Classification, Policing, queuing (QoS based), VLAN mng, OAM
- Synchronization: syncE, SDH/SONET sync, 1588v2 (PTPoTC)
- Performance Monitoring: OTN, PKT
- SDN Management protocol: RESTCONF/YANG

LM PACKET/OTN 100G

- I/O ports: Dual 1x100GE (QSFP28) + 10 x 1GE/10GE, OTU-2 (SFP/SFP+)
- Switching capacity: 520G Packet, 240G OTN (ODU-k/Flex granularity)
- Power: -48V^(*)
- Synch IF: 2 MHz/2 Mbit, 1PPS/TOD
- Redundancy: Power, FAN, Control, Switch fabric
- Services: EPL, EVPL, ETree and ELAN
- Network connection: ODU-0/2/Flex unidir/bidir
- Network protection: ODU-0/2/Flex SNC
- Client protection: Single- and Multi-card LAG
- PKT Features: Classification, Policing, queuing (QoS based), VLAN mng, OAM.
- Performance Monitoring: PKT, OTN
- SDN Management protocol: RESTCONF/YANG

LM OTN 100G

- Network ports: Dual 1 x OTU-4 Grey (QSFP28) or DWDM Coherent (CFP2-DCO)
- Client ports: Dual 10 x STM-1/4/16/64; 1GbE/10GE, FC-4/8/16; OTU-1/2 (SFP/SFP+)
- Switching capacity: Dual 400G ODU-k/Flex granularity
- Power: -48V^(*)
- Synch IF: 2 MHz/2 Mbit, 1PPS/TOD
- Redundancy: Power, FAN, Control, Switch fabric
- Services: Transparent P2P (CBR)
- Network connection: ODU-0/1/2/Flex unidir/bidir
- Network protection: ODU-0/1/2/Flex SNC
- Client protection: MSP, Y-Cable
- PKT Features: Classification, Policing, queuing (QoS based), VLAN mng, OAM
- Synchronization: syncE, SDH/SONET sync, 1588v2 (PTPoTC)
- Performance Monitoring: OTN/ETH
- SDN Management protocol: RESTCONF/YANG
- Support for both transponders and muxponders on the same line card

LM OTN 200G

- Network ports: Dual 1 x 100/200G DWDM Coherent (CFP2-DCO)
- Client ports: Dual 2 x 100GE / OTU4
- Power: -48V^(*)
- Redundancy: Power, FAN, Control
- Services: Transparent P2P (CBR)
- Client protection: Y-Cable
- Performance Monitoring: OTN/ETH
- SDN Management protocol: RESTCONF/YANG



(*) 1RU fully redundant AC/DC converter available as option

OPTICAL NETWORK CONTROLLER (ONC)

SMO "Homelight" ONC offers the typical features of a classic Network Management System through a simple and modern very user-friendly web interface, enriched by statistics and dashboards that show at a glance the status of the network and the equipment, all with an approach completely based on SDN architecture.

ONC provides point-and-click provisioning with automatic service routing. ONC is integrated with our Optical Design Tool (ODT) to provide simplified end-to-end lifecycle management.

ONC can run as a "stand-alone" SDN Controller or as a "domain controller" in the context of a complete SDN architecture. Completely web based, ONC does not require any application deployment on the client machine. The ONC server can be run on its own machine or as a Virtual Machine.



- Server Platform: Linux OS over stand-alone x86 servers or in a virtualized environment, supporting virtualization and containerization
- Topology & geographical maps
- Multi-Layer Path Calculation, Set-up and management (SDH/SONET, L2, OTN and WDM layers)
- Embedded methodology for path migration from legacy to new optical technologies
- Alarm and diagnostics
- Performance Monitoring
- Controller redundancy
- Northbound interface: TAPI based RESTCONF API for topology, connectivity, alarms, PM
- Southbound interface: RESTCONF

LIGHTMODE microOTN

The LIGHTMODE (LM) microOTN provides a complete solution for migrating legacy SDH/PDH networks to modern OTN/WDM infrastructures. «Aggregator» performing the grooming of E1 services (native or channelized) into OTN (OTU-1 interface), while «Hub» closes different rings of E1 aggregators and grooms traffic over a large number of interfaces including: SDH STM-1/4/16 or OTU-1/OTU-2. A smooth migration of legacy traffic towards OTN/WDM networks, minimizing the traffic impact during the migration, while enabling new high capacity services.



LM microOTN AGGREGATOR

- Interfaces: Dual 63xE1 (75 Ohm) + NxSTM/1/4/16/OTU-1
- Switching capabilities: E1/VC12 granularity
- Stackable (with microOTN AGG or HUB)
- Power: -48V^(*)
- Synch IF: 2 MHz/2 Mbit, 1PPS/TOD
- Redundancy: Power, FAN, Control
- Switch fabric
- Services: E1 Aggregation over OTN
- Network connection: ODUe/0/1 SNC protection
- Network protection: ODUe/0/1 SNC
- Synchronization: SDH sync
- Performance Monitoring: OTN, SDH, PDH
- Management protocol: RESTCONF/YANG

LM microOTN HUB

- Interfaces: Dual 2xOTU-2 + NxSTM/1/4/16/OTU-1 + NxSTM1/4
- Switching capabilities: VC12/VC4/ODU-0 granularity
- Management of other LM-1 drop shelves as single NE
- Power: -48VDC^(*)
- Synch IF: 2 MHz/2 Mbit, 1PPS/TOD
- Redundancy: Power, FAN, Control, Switch fabric
- Services: over OTN and HUB function towards SDH
- Network Connection: ODUe/0/1 unidir/bidir. protection
- Network Protection: ODUe/0/1 SNC
- Synchronization: SDH sync
- Performance Monitoring: OTN, SDH, PDH
- Management protocol: RESTCONF/YANG

^(*) 1RU fully redundant AC/DC converter available as option

LIGHTMODE microROADM

LIGHTMODE (LM) microROADM is a platform optimized for Metro/Access network. The LM microROADM is an Open Line System supporting waves from any industry standard transponder/muxponder or generated by the companion LM OTN micronode. When utilized with the LM OTN, the LM OTN and LM microROADM can be stacked as a single network element with a single IP address. Transponding/muxponding OTN cards, compatible with microROADM architecture, are available, enabling the convergence between transmission and transport domains. Besides acting as OLS, the microROADM is able to generate "in house" optical channels from 10G to 400G. Low-end cards (1G to 10G clients, 10G line) and high-end cards (10G, 25G, 100G clients, 100G to 400G line) are available, providing the microROADM with the capability to source the full set of waves needed in the network.



A Clock Reference Unit card is able to process the synchronization packets (relevant to PTP and SynchE distribution) performing boundary clock and generating the synchronization signal to be transmitted across WDM network.

The LM-1 microROADM supports 40 and 80 channel configurations for linear, ring, and mesh topologies. Per-channel bandwidth size can be accommodated to support high baudrate signals (400G and above).

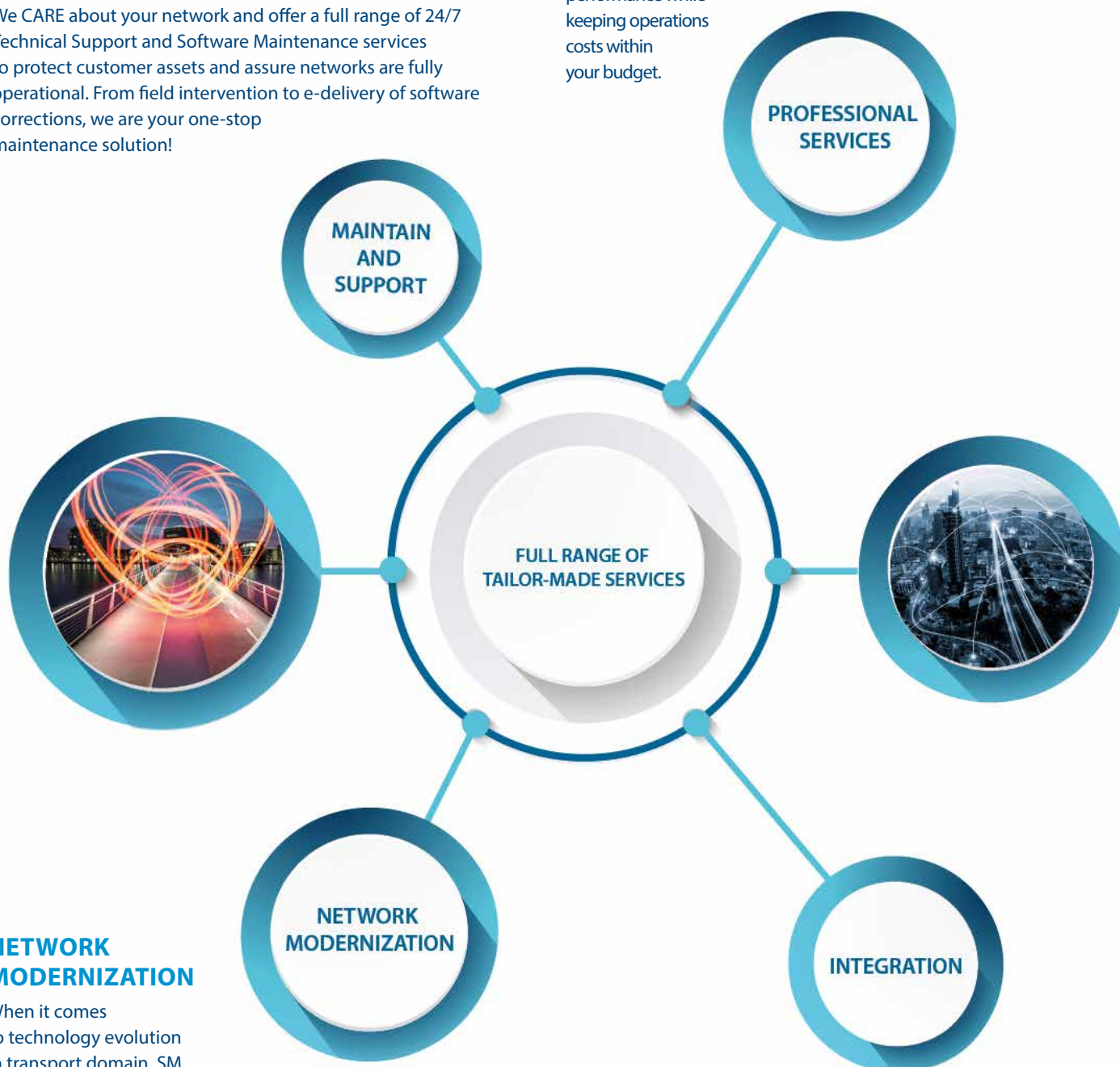
An embedded OTDR option allows for seamless surveillance of the fiber infrastructure and can be managed via the SM-Optics NMS or via the RESTCONF API. The microROADM has an industry unique WSS-Less ROADM allowing for the cost effective deployment of ROADM capability in access networks. The microROADM also offers unprecedented scalability providing filters that can scale one channel at a time. Single Fiber Working capability, together with an extended temperature range allows for deployment in Access networks where fiber scarcity and environmental conditions are tough problems.

Automated configuration and power management make the system easy to utilize and maintain. To effectively tackle network intrusions, the product provides traffic encryption according to the latest standards, ensuring data confidentiality, integrity, and protection against unauthorized access across all communication links and operational environments. SDN Management provides simplicity and reduced operational costs. Integration between the design tool and management system simplifies the network lifecycle from inception through deployment and during ongoing monitoring and maintenance.

- Open Line System
- Flexible configurations ranging from 4 to 80 channels
- Fixed and N-Degrees Reconfigurable OADM
- In Line Amplifiers
- Pluggable EDFA Amplifiers
- 2D WSS-less ROADM
- Multi-degree ROADM
- Single Fiber and Dual Fiber Working
- 1G to 800G clients support
- 10G to 800G line provision
- Flexgrid ready
- Network topologies: Linear, Ring, Mesh
- Automatic management of the transport layer
- Fast and precise Channel Activation
- Planning Tool
- Encryption
- Single NE also with LM OTN combination
- SDN Management protocol: RESTCONF/YANG
- Extended Temperature Range
- Embedded AC/DC converter
- ANSI and ETSI

SM Optics supports all phases of customers' network lifecycle leveraging our deep understanding of transport technology. We CARE about your network and offer a full range of 24/7 Technical Support and Software Maintenance services to protect customer assets and assure networks are fully operational. From field intervention to e-delivery of software corrections, we are your one-stop maintenance solution!

From Professional Consulting to project-based Network Value Added Services, SM Optics brings you decades of extensive experience in designing telecom networks and delivering smart solutions in the transport domain. We can help you get the most out of your existing network assets as well as in modernization of those assets. We provide assistance in network assessment and optimization and deliver re-engineering solutions allowing you to maximize your network performance while keeping operations costs within your budget.



When it comes to technology evolution in transport domain, SM Optics is a trusted partner in providing customers support in transitioning their networks to modern and innovative technologies. SM Optics offers valuable project based services ranging from consolidating and optimizing existing infrastructure to full-scale network transformation solutions aimed at introducing new software, services and functionality.

With industry recognized cross-technology technical knowledge in the transport domain (SDH/OMSN/POT/WDM/OTN) and full-scale R&D Lab facilities, SM Optics delivers customized solutions in network management multi-layer platforms, software integration (NMS/SS/SDN/NFV), automation and integration services. Our experience, your advantage.



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