

MARCONI OMS 800

Optical MultiService Metro-Edge



General

The Marconi OMS 800 is a family of Optical Multi-Service Access and Edge devices that provide ultra compact (pizza-box style) optical transport solutions to simultaneously deploy Ethernet services alongside traditional TDM services with rapid payback on investment.

The OMS 800 provides the technology to match the application for a fast revenue generation.

The OMS 800 with a dual-matrix architecture, and high level of scalability, provides a cost-effective solution either to utilize the widely deployed SDH infrastructure and to deliver a diverse range of Ethernet data services

The OMS 800 offers optimized Customer Located Equipments applications for new customer connections. The new protocols of VCAT, GFP, and LCAS enables a multiservice provisioning platform to transport data services over SDH equipments.

Key features and benefits for OMS 800 include:

- Easy implementation of new revenue generating services including E-LINE (point-point) or E-LAN multipoint for rapid Return on investment.
- Provides mixing of TDM (voice) services with data (Ethernet) services.
- Low footprint form-factor ideal for a diverse range of space-restricted applications, and optimum cost level.
- Carrier-grade availability and reliability to support a wide range of SLAs, with innovative control mechanism.
- Specifically designed for high speed Ethernet delivery (10,100 and GigE tributaries), whilst retaining key TDM access (i.e. E1, E3, T3, STM-1).
- Aggregate speed of 155 Mbit/s to 2,5 Gbit/s in point-to-point or ring configurations.
- SFPs interfaces offer s speed flexibility and Capex and Opex efficiency.
- Common ServiceOn network management for Opex efficiency.

Applications

Multiple service delivery

OMS 800 enables to generate new revenues by delivering carrier class services in the access network. The single platform enables new services alongside more traditional TDM services such as TDM leased lines and PBX connections with considerable improvements in CAPEX and OPEX.

Ethernet services in focus

Ethernet (E) services are configured either as E-Line services in a point-to-point configurations similar to leased lines or as an E-LAN services in a multipoint service used to interconnect several locations to create a Wide Area Network (WAN). The product is transparent to the operation of the LAN and to the end-users, making the most of the ubiquity of Ethernet as the customer port. A policing mechanism in the OMS 800 products checks customer traffic in accordance with the Service Level Agreement (SLA) and performs the necessary handling including the fulfillment of traffic priorities through the network. The OMS 800 supports both point-to-point and multipoint-to-multipoint services, with the Metro Ethernet Forum (MEF) certification. The MEF standard has become widely accepted by operators and service providers, which means that Ethernet traffic can be classified (via policing) into different bandwidth profiles defined by:

- Committed Information Rate (CIR) including Committed Burst Size (CBS) and
- Excess Information Rate (EIR) incl. Excess Burst Size (EBS)

The OMS 800 offers the rate limitations (ingress) in steps of 500 Kbps (FE) or 1 Mbps (GE) either by;

- UNI (Port)
- EVC (C-VLAN-ID)
- EVC and COS (Class Of Service)

Flexible deployment options

OMS 800 is supplied in variants with a transport capacity ranging from 155 Mbps (STM-1) to 2,5 Gbit/s (STM-16). It offers solutions that can be configured either as a pure TDM or Ethernet transport or a combination, and configured for star, linear, ring or point to point configurations. Thanks to the flexibility that the OMS 800 product family offers, it will be an ideal solution for a Service Provider deploying new revenue generating services in less dense geographical areas up to dense business areas used either as a peripheral device in a metro-ring topology or as an Customer Located Equipment (CLE) for single customers or a multi-tenant unit in a business park. This cost-effective solution avoids the need to deploy separate general-purpose routers or LAN switches on the customer's premises, or the need for customers to add costly telecom interfaces.

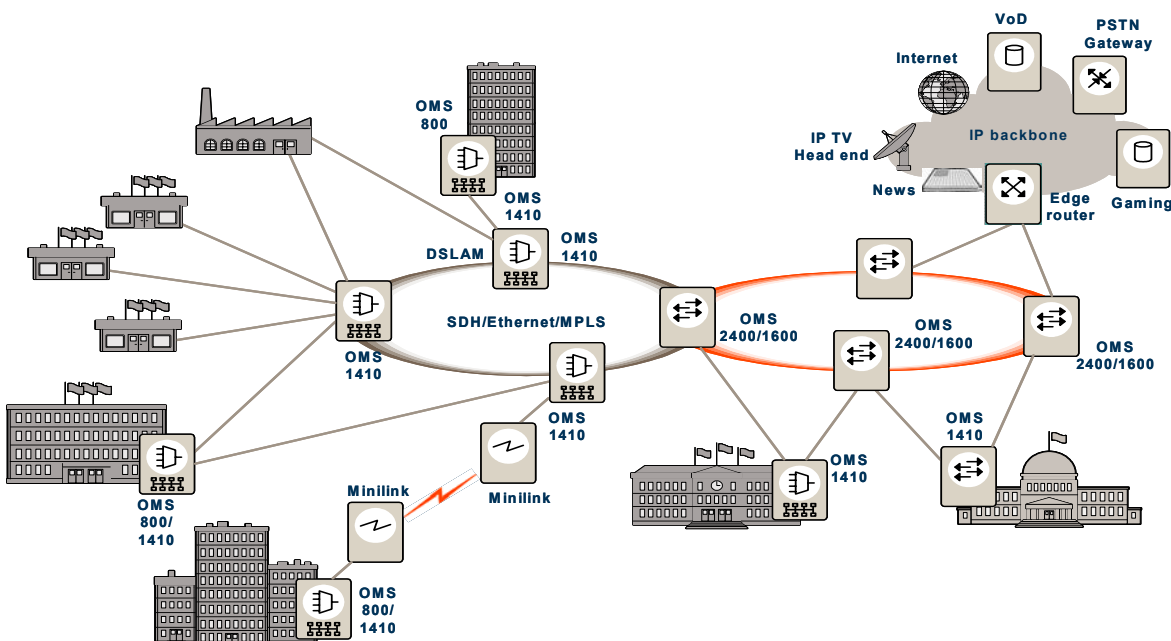
The OMS 800, with its focused functionality and telecommunications equipment base, can be installed without needing the costly and specialist skills from outside your traditional sources.

Radio Access networks

In fixed and mobile radio applications, the OMS 800 family ensures economical backhaul solutions, from an ultra-compact (1U) device with high density of 2Mbit/s, and Ethernet interfaces. STM-1 electrical SFP line interfaces also reduce interfacng costs in the associated radio equipment.

Remote Management

The OMS 800 product line can be managed in almost any topologies by a flexible use of the DCC channel, or by using a separate VLAN, or embedded in the user Ethernet traffic or by using a separate VC-12 channel.



Key Advantages

Next generation design

The OMS 800 products are multi-service (Ethernet and TDM technology based) devices for grooming and transporting of packet data and voice (TDM) traffic in the Access and Metro Access Network. The OMS 800 series not only simplifies service creation, but also provides legacy SDH data service solutions with new functionalities that are added to existing networks by Ethernet, Generic Framing Procedure (GFP) (for the efficient mapping of Ethernet frames into SDH payloads (VCs)), Link Capacity Adjustment Scheme (LCAS) (for the flexibility to adjust bandwidth in service) and Virtual Concatenation (VCAT) (for the efficient use and allocation of network bandwidth).

Alongside these more optimized mapping mechanisms, new control and processes, including Class of Services/policing are introduced. Collectively these new standards provide tools for a network operator to design networks that enable more efficient bandwidth use through mechanisms for prioritizing traffic, sharing bandwidth, improved bandwidth granularity and provisioning.

OMS 800 products encompass the functions of Layer 1 (reliability, QoS) and Layer 2 (high speed, simplicity, low cost) required in the Ethernet access network.

Ethernet Layer 1 modules supports features such as rate limitation, CIR, CBS, EIR, EBS, Provider tagging (802.1ad, QinQ), tunneling of user protocols and IEEE802.1p prioritization.

Ethernet Layer 2 switch supports features such as:
Mac multicast, IGMP snooping, IEEE802.1q VLAN tagging, GARP VLAN registration Protocol (GVRP), Provider Bridging (with tunneling of user traffic/QinQ, tunneling of user protocols and enhanced OAM, rate limitations per port/VLAN, Link Aggregation, STP, RSTP and IEEE802.1p prioritization.

Carrier-grade reliability and availability

The carrier-class reliability inherent in the OMS 800 design significantly reduces the whole life costs by minimizing the number of customer site visits needed to maintain services. The carrier-class availability of the OMS 800 and the underlying SDH transport mechanism ensures that delivery of Ethernet traffic is as dependable as a conventional telephone call. Tried and tested SDH protection mechanisms such as MSP 1+1 and SNCP are available alongside data/Ethernet mechanisms such as STP/RSTP and LCAS, which in addition allows the benefit of re-use of protection bandwidth for traffic, and the ability to offer differentiated service classes. Virtual Concatenation allows the best use of network bandwidth via the ability to diversely route traffic, whilst avoiding the need to upgrade intermediate nodes.

Scalability and cost-efficiency

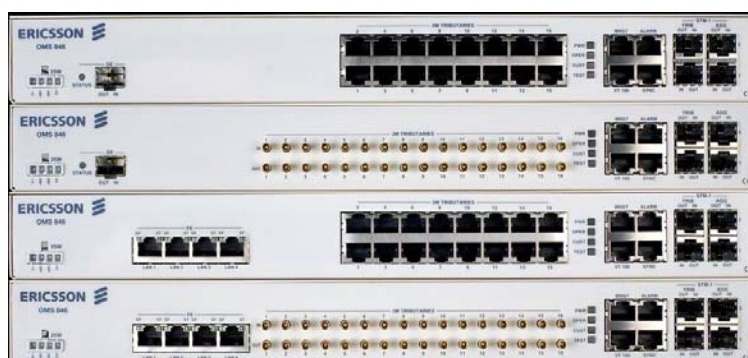
The OMS 800 has been designed focusing on scalability and cost without compromising on the necessary features and flexibility required for an efficient deployment of services, such as a fully non-blocking VC-12/3/4 cross-connect. The OMS 800 products are implemented in a 1U box that provides high port density by footprint.

The Portfolio consists of three key product lines;

- OMS 860 is a flexible and modular STM-1/4 ADM with wide range of multi-service interfaces and Ethernet functionalities.
- OMS 870 is a flexible and modular STM-1/4/16 ADM with wide range of multi-service interfaces and enhanced Ethernet functionalities.
- OMS 846 is optimized for STM-1 configurations which require high number of E1s in 1U form factor (up to 16) with low number of Fast Ethernet interfaces (4x) or Gigabit Ethernet (1x).

Management

Ericsson's ServiceOn OSS solutions manage the full Ericsson Broadband Network (Optical, Wireless and Access) product range, delivering end-to-end, best-in-class, and service oriented management with seamless OSS integration.



Technical Data

GENERAL

OMS 800 is designed to meet the appropriate sections of recommendations ITU-T G.703, G.704, G.707, G.783, G.957, G.7041 and G.7042, ISDN PRA, IEEE 802.1 and 802.3.

ELECTRICAL INTERFACES

- E1 (2 Mbit/s) balanced - Connectors: RJ45 and LFH Impedance: 120 ohm direct or by external patch-panel.
- E1 (2 Mbit/s) unbalanced - Connectors: 1.0/2.3 coaxial and LFH - Impedance: 75 ohm direct or by external patchpanel.
- E3/T3 (34/45 Mbit/s) - Connector: 1.0/2.3 - Impedance: 75 ohm
- STM-1e (155 Mbit/s) - Connector: 1.0/2.3 - Impedance: 75 ohm
- Ethernet/LAN 10/100 Base-T and 1000 Base-TX Connector: RJ45

OPTICAL INTERFACES

- Ethernet/LAN 1000 Base-SX/LX/ZX
- STM-1 1310 nm and 1550 nm options to S1.1, L1.1 and L1.2
- STM-4 1310 nm and 1550 nm options to S4.1, L4.1 and L4.2
- STM-16 1310 nm and 1550 nm options to S16.1, L16.1 and L16.2
- Multirate STM-16 Very Long Haul 1550 nm (32 db) - Connector: LC
- CWDM 8 wavelengths, multi-rate short and long haul.

SYNCHRONISATION

Sources

- STM-N (T1), E1 (T2) and 2MHz (T3)

Output

- 2Mbit/s (T4)

Feature

- SSM support

POWER

DC

- -40 to -72 V DC

AC

- 230 VAC@50 Hz (external adapter)

Dissipation

- 20 to 120 W

EMC/SAFETY/TEMPERATURE

EMC

- EN 300 386

Safety

- EN 60950 and EN 60825

Operating Temp

- -5°C to + 45°acc. to ETS 300 019-1-3,
- class 3.2

Storage:

- ETSI EN 300 019-1-1 Class 1.2

Transport:

- ETSI EN 300 019-1-2 Class 2.3

MECHANICS

- 1 u rack for installation in 19" or ETSI rack
- Typical dimensions (HxWxD) 44x445x240 mm
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