

MARCONI OMS 800

Optical MultiService CLE Access-Edge



Marconi OMS 860



Marconi OMS 870

General

The Marconi OMS 800 is part of Ericsson's new Optical Multi-Service portfolio. It consists of ultra-compact (pizza-box style) optical transport solutions that allow operators to simultaneously deploy Ethernet services alongside traditional TDM services with rapid payback on investment. The product provides a most cost-effective ability to progressively migrate to new services & a converged network infrastructure, whilst generating new revenue streams. And, with its future-proof, dual-bus architecture, and high level of scalability, it allows for the further evolution of the platform technology.

Data services to business customers are an area of significant market activity. But, these new services, whilst consuming high bandwidth, yield relatively low revenue per bit. The challenge therefore is to cost-effectively utilize the widely deployed SDH infrastructure in conjunction with optimized CLE for new customer connections.

Our multi-service devices combine the inherent functionality of Next Generation SDH (NG-SDH) multiplexers with the growing demand for a diverse range of data services. And, as a leader in this market, Ericsson is at the forefront of the migration towards multi-service optical networking.

Key Features

- Easy implementation of new revenue generating services for rapid ROI
- 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).
- Supports ELINE (point-point) or ELAN multipoint data applications with additional enhancement and more efficient implementation of Ethernet services in accordance with Provider Bridge functionalities
- Aggregate speed of 155 Mbit/s to 2,5 Gbit/s in point-to-point or ring configurations.
- SDH and Ethernet interfaces utilize SFPs for Capex efficiency
- Common ServiceOn network management for Opex efficiency.

Versatility in Access-Edge applications

Multiple service delivery

The Marconi OMS 800 provides the necessary tools for a service provider who is deploying new revenue generating and carrier class services. The use of a single platform to enable these new services alongside more traditional TDM services such as TDM leased lines and PBX connections can result in considerable improvements in CAPEX and OPEX.

Ethernet services in focus

Ethernet services can be configured either as Ethernet Line services in a point-to-point configuration similar to leased lines or as an E-LAN service type, which is 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.

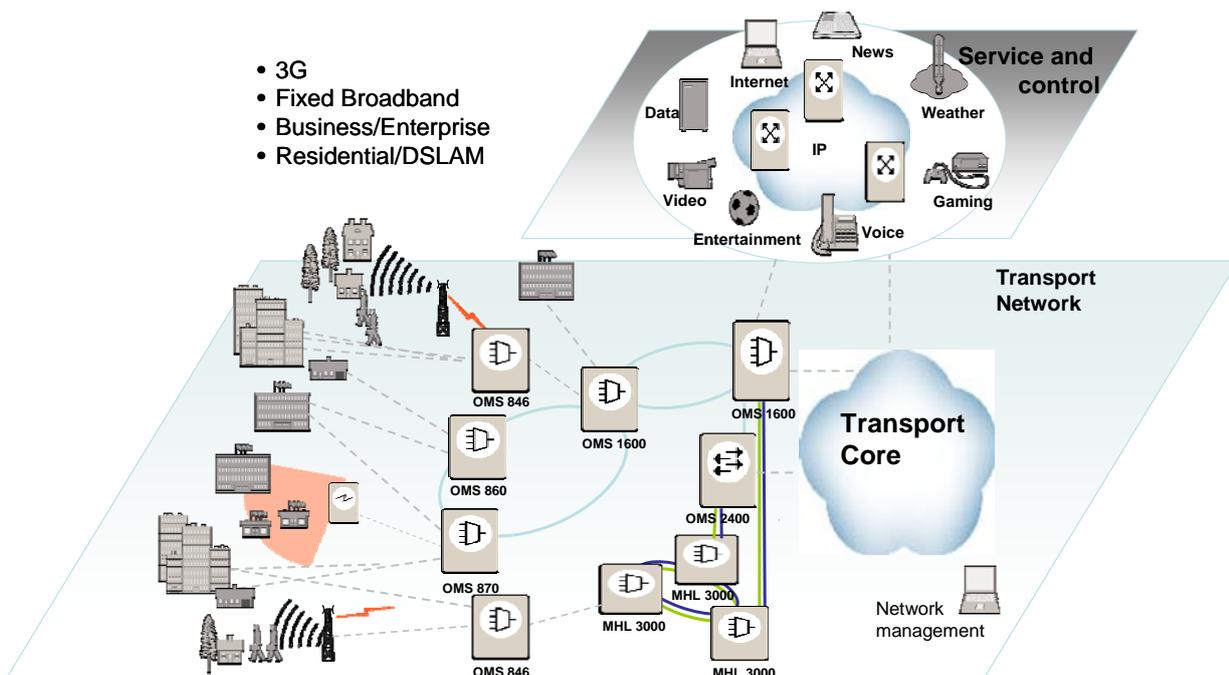
However when introducing these services the carrier must be careful to protect their brand

image, and the ability to deploy a carrier-grade solution is key. A policing mechanism in 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, and adapts the Metro Ethernet Forum standards that have become widely accepted by 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)
- Excess Information Rate (EIR) incl. Excess Burst Size (EBS)

And rate limitations (ingress) in steps of 500 Kbps (FE) or 1 Mbps (GE) are offered either by;

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



Flexible deployment options

Marconi OMS 800 is supplied in variants with a transport capacity ranging from 155 Mbps (STM-1) to 2,5 Gbit/s (STM-16), and solutions that can be configured either as a pure TDM or Ethernet transport or combination, configured for star, linear, ring or point to point configurations. Thanks to the flexibility Marconi 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 Premises Equipment (CPE) 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 telco interfaces.

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

Radio Access networks

In fixed and mobile radio applications, the Marconi OMS 800 family ensures economical backhaul solutions, from an ultra-compact (1U) device with high density of 2Mbit/s (for today's needs), and Ethernet interfaces (for tomorrow's). STM-1 electrical SFP line interfaces also reduce interfacing 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 a Metro Access Network.

The OMS 800 series not only simplifies service creation, but also provides legacy SDH 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 can be operated either as a Layer 1 or as a full Layer 2 switch implemented with necessary tools required in a Service Provider 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.

The 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 whole life costs by minimizing the number of customer site visits needed to maintain service. The carrier-class availability of the Marconi 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 scalability and cost without compromising on the necessary features and flexibility required for 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 (4) or Gigabit Ethernet (1).

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, service oriented management with seamless OSS integration.

The Ericsson optical portfolio is a world leading family of next generation transport products, designed with the most demanding of customer applications in mind. Flexibility (its ability to adapt to a myriad of applications, not least evolution to packet networking and fixed mobile convergence) and innovation (technologies such as carrier grade data, ASTN, OTN and multireach WDM have built upon our heritage as a pioneer in SDH and WDM).

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 patchpanel.
- 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.

Synchronization

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

Ericsson AB

New Century Park
Coventry CV3 1JG
United Kingdom
Telephone: +44 (0)24 7656 2000
+44 (0)24 7656 8981
www.ericsson.com

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