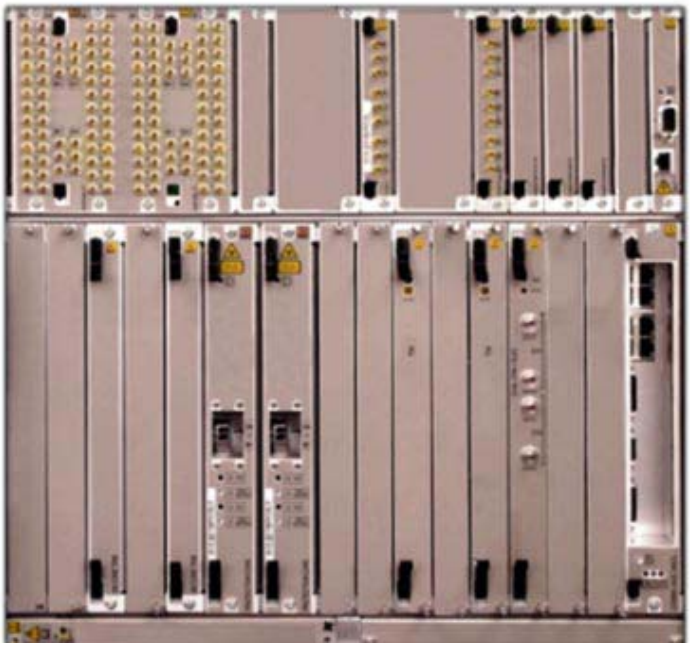
MARCONI OMS 1200

Optical MultiService Metro-Edge



General
The Marconi OMS1200, Optical MultiService Metro-Edge platform has been designed to provide the flexibility to respond to changing customer demands in an increasingly competitive environment. The MultiService capability of OMS1200 supports a range of services and interface types from a single platform, including Ethernet and TDM. The platform is optimized for Metro-Edge applications where traffic volatility makes scalability a key requirement. The range of interface and subrack options makes the OMS1200 a cost effective solution for customer delivery, backhaul or mobile radio network application.

Key features and benefits for OMS 1200 include:

- Smooth migration from TDM to a carrier grade data service network, efficiently transporting mixed Data and TDM traffic over a resilient SDH network
- Service flexibility enabled by Multirate traffic cards supporting a configurable mix of interface types and high port density
- Scalability through in-service addition of traffic interfaces, upgrade of aggregate rates, embedded WDM transport capability and Ethernet Port Extension for native Ethernet delivery to a remotely managed NTE

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Applications

Multi-service delivery

OMS1200 products deliver Ethernet, SDH and PDH services from an SDH platform. OMS1200 is designed to operate with metro-edge equipment such as DSLAMs, IP/Ethernet routers and DWDM systems. It enables multiservice delivery in metro-access and metro-edge applications in rings or spurs operating at STM-1, STM-4 or STM-16. The high-capacity switches and the high-density, flexible-interface cards provide low-cost hubbing nodes close to the edge of the network where aggregation increases the efficiency of the higher layers.

Business services

For major business-customers with the need for service variety coupled with high levels of security, the OMS1200 products combine flexibility with economic benefits. They enable delivery of services such as VPN and VOIP as well as providing 2Mbit/s and other PDH circuits, together with STM-1 and STM-4. With card/unit protection supplementing network protection to provide service security, and with subrack format options, OMS1200 provides high levels of functionality and availability whilst making best use of available space.

Multiple-customer locations

In multi-tenancy buildings, on business parks or campuses, the OMS1200 portfolio distributes multiple services from the existing SDH infrastructure. The multiplexers provide powerful hubs that can be deployed in suitable street cabinets or in equipment rooms, providing a cost-effective point of presence to serve multiple business customers.

Residential services

The compact, protected architecture makes OMS1200 ideal for DSLAM aggregation in triple play networks enabling Residential DSL Services such as Broadband, VOIP and IPTV.

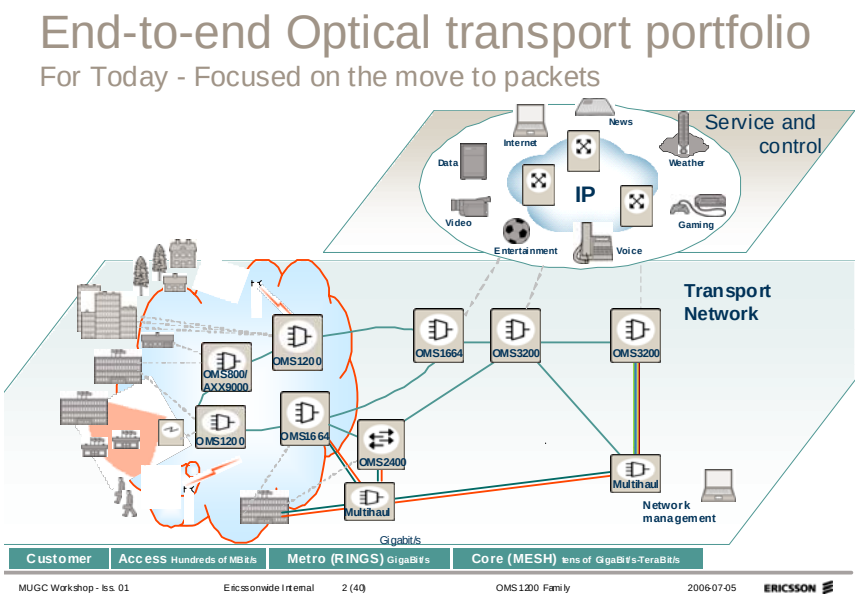
Radio networks

In fixed and mobile radio applications, the OMS1200 family ensures economical, protected backhaul solutions, from a compact (6U) device with high-density 2 Mbit/s interfaces. STM-1 electrical SFP line interfaces also reduce interfacing costs in the associated radio equipment.

Scalability, flexibility and low first-in-cost

Low-cost platforms with a choice of integrated line/ core units allowing aggregate scalability offer low first in cost. Multi-rate interface cards increase the variety of interface types available on a single platform and improve slot-efficiency. Flexible data tributary units include multirate Ethernet Switch cards (GigE/FastE with wirespeed GE option) and a FastE mapper card that allows a flexible mix of shared electrical and optical interfaces (SFP). A multi-rate SDH tributary card hosts a mix of different STM-1 interfaces or a single flexible STM-4 interface. This versatility allows a lower cost ADM to provide a higher number of interface types reducing the number of multiplexers needed.

OMS 1200 Application Diagram:



Key Advantages

Keeping costs down

High-density tributary cards result in a low cost-per-interface. High-capacity switch options provide high hubbing capacity and tributary flexibility in a low-cost package. Spare inventory is minimized with SFPs common to Data and SDH interfaces, both in the OMS1200 family and in other Marconi next-generation products. Hot-pluggable GigE, FastE, STM-1, STM-4 and STM-16 Line Interfaces (SFPs) allow fast, simple and reliable installation or upgrade. The SDH multi-rate tributary unit means that a single SDH tributary base card is stocked with the appropriate SFP modules being fitted as required. Designed for ease of installation the OMS1200 family allows reduced installation and commissioning time.

High availability

The Link Capacity Adjustment Scheme (LCAS) allows diverse routing of Ethernet traffic, reducing the impact of fibre-break to capacity reduction whilst Link Loss Forwarding (LLF) allows the initiation of fast protection switching. The products also offer Multiplex Section Protection (MSP) or Sub- Network Connection Protection (SNCP). Use of the higher capacity switch allows MSPRING at both STM-4 & STM16. Duplication of the line/switch units and tributary card protection means that high availability is assured.

Next-generation SDH design

The OMS1200 products are based on worldwide experience and innovative use of the latest technologies and techniques to produce true multiservice delivery transport nodes.

Flexible service delivery

The multiplexers offer cost-effective transport of mixed traffic types over the SDH infrastructure.

Ethernet Services

A range of Ethernet tributaries give access to revenues for the provision of Ethernet services E-LINE and E-LAN (EVPL and EVPLAN) and provide hubbing for optical Ethernet distribution.

Architecture

Two sub-racks and two integrated line/switch units form the OMS1200 products. The ultra compact sub-rack that can be mounted vertically or horizontally. Two line/switch unit options allow maximum accessible capacities of 3.8Gbit/s and 8.4Gbit/s depending upon the subrack/switch combination. Each of the line/switch units has a choice of line rates enabled by the selection of the appropriate SFP module. The OMS1200 products are upgradeable in service from STM-1 to STM-4 or from STM-4 to STM-16 depending upon choice of switch size.

Management

End-to-end integrated network management is provided through the widely deployed Ericsson's Service on Microwave (SoM), Marconi ServiceOn Optical (SoO) and ServiceOn Access (SoA) solutions, providing rapid service provisioning, end-to-end performance monitoring and fast fault identification.

Technical Data

ITU-T STANDARD RECOMMANDATIONS:
G.703, G.704, G.707, G.783, G.784, G.803, G.841, G.842, G.921, G.957, G.7041 (GFP), G.7042 (LCAS)

SWITCH CAPACITY OPTIONS
OMS1240, 25 x STM-1, 41 x STM-1
OMS1260, 30 x STM-1, 54 x STM-1
All VC4/3/12, fully non blocking

AGGREGATE INTERFACES
STM-16 1310 nm and 1550 nm options– SFP
STM-4 1310 nm and 1550 nm options– SFP
STM-1 1310 nm and 1550 nm options– SFP
STM-1 electrical SFP
CWDM interfaces –STM-16

DATA FUNCTIONALITY
MEF9 certification
Generic functionality:
Frame size: 1600, Jumbo
MAC Pause
MAC address learning & forwarding,
IVL (Independent VLAN Learning),
802.1Q VLAN aware bridging,
RSTP, MSTP,
Q-in-Q, 802.1Q,
CoS handling
Policing, Shaping
Queuing, scheduling, 802.1p priority,
Link aggregation,
Ethernet snapshot and historic counters, RMON,
Ethernet OAM (Y.1731, 802.1ag), per flow
Link Loss Forwarding

Traffic Interface Cards options
Ethernet Mapping
FastE 8 Ports
FastE flexible optical/electrical SFP 8 ports
Ethernet L2 cards
FastE SFP 4 ports + GigE tri-rate SFP 4 Ports
FastE SFP 8 ports + GigE tri-rate SFP 4 ports
Wirespeed GigE
2 Mbit/s electrical 63 ports
34/45 Mbit/s electrical 3 ports
34/transmux 1 port
140Mbit/s 1 port
STM-1/STM-4 configurable multi-rate
STM-1, SFP 4 ports
STM-4, SFP 1 port
CWDM mux/demux 4, 8 channels

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Network Management
Element Manager interface OSI IS-IS
F2 byte OLO communications
E1 OLO communications
IP tunnelling for management of third party equipment

Network Protection
LCAS, LLF
SDH line 2 fibre MSSPRING, STM-16 and STM-4.
Line and tributary MSP protection.
Sub-Network Connection Protection
Card protection
Core switch/line unit, SDH & PDH tributaries 1+1 and 1:N.

Synchronization outputs
Internal +-4.6ppm lifetime, G.813
Timing from SDH, PDH ports & external 2M
Holdover
Inputs: 2048 kHz G.703 Section 13,
2 Mbit/s HDB3 G.703/G.704
Outputs: 2048 kHz to G.703 Section 13
2 Mbit/s HDB3 G.703/G.704
SSMB timing marker
SASE mode for SSU support
Timing modes for system timing of 2M traffic ports (GSM support etc)

Mechanical arrangement
Sub-rack housed in ETSI 300 119 rack
Dimensions
OMS1240: Vertical mounting: H: 445 mm , D: 280 mm: W 218 mm. Horizontal mounting: H: 218 mm/6U, 280 mm, W: 445 mm
OMS1260: Vertical mounting: H: 445 mm, D: 280 mm, W:448 mm

Environment
Climatic & Robustness to ETSI EN 300 019-2-3 - Class 3.2
- Radiated and Conducted Emissions to EN 55022 - Class B
- Radiated Immunity to EN 61000-4-3 - 10V/m
- Certified to: ETSI EN 300 386; and for Enhanced Availability of Service to ETSI ES 201 468, Other Than Telecomm Centers, Level 2
- Certified to EN 50121-4 for building-in to Railway Infrastructure
- Certified to EN 301 489-4 for building-in to Radio Infrastructure
- Electrical Safety to IEC 60950-1 - CB Scheme Certified
- Optical Safety to: IEC 60825-1; IEC 60825-2; ITU-T G.664. - UL Listed

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