

OSIRIS Multi-Service Platform

Overview

The Positron OSIRIS™ Multi-Service Platform (MSP) is an integrated access solution for the rapidly expanding optical network (SONET/SDH) broadband markets. It delivers cost-effective, compact, and simple-to-deploy solutions for multi-service traffic such as data, voice and video.

The OSIRIS solutions are available in various configurations to address a wide range of emerging packet and legacy TDM applications. Each OSIRIS configuration consists of a network element shelf type, optical network modules (155M/622M/2.5G) and flexible service interfaces (optical, electrical, data). Shelf type selection is based on specific bandwidth and footprint requirements.

All OSIRIS solutions can be deployed in standard point-to-point and UPSR topologies. Flexible bandwidth connectivity is enabled via support for broadcast, virtual (logical) ring, dual ring interconnect (matched nodes), and bandwidth reuse applications. Service interfaces include DS1/E1, DS3/E3, EC-1, OC-3/STM-1, 10/100 Ethernet, and 100FX. All OSIRIS network elements are easy to install and operate offering simple and streamlined standards based element and network management.

OSIRIS Network Elements are managed via Positron's VUE Element Management System (EMS).

Key Benefits

- Cost-effective delivery of multiple services on a single platform
- Non-traffic affecting upgrades
- Simple network and equipment management with VUE and VUE PLUS!
- Capacity to readily and seamlessly increase bandwidth and add new services
- Interoperability with other vendors' platforms
- Support for advanced packet services (point-to-point, point-to-multi-point Ethernet)

Key Features

- Capability to handle TDM, SONET and Ethernet traffic
- Line scalability from 155M to 2.5G
- Integrated Operations, Administration, Maintenance and Provisioning (OAM&P)
- Wide variety of electrical, optical and data interfaces
- Open Systems Interconnection (OSI) compliance
- Variable footprint - five shelf models
- Front and side access for equipment connections

A Complete Network Solution

The OSIRIS platform has an installed base of over 25000 nodes deployed globally and has evolved to meet carriers' needs, providing increased bandwidth, more services and greater flexibility. The OSIRIS MSP can transport TDM and emerging packet based traffic and ensures network survivability via support for unidirectional path switched ring (UPSR/SNCP) line architecture.

Shelf Options

The OSIRIS platform enables you to tailor your solution with respect to line rate and bandwidth usage/segmentation. The first element of the system is the shelf. The OSIRIS platform offers five application optimized shelf models: XTD, XTS, STD, Micro and Micro Wallmount Unit (WMU). All shelves are convection-cooled and equipped with an emergency power feed input.



OSIRIS XTD Shelf

The double-deck, 14-in.-wide OSIRIS XTD Shelf is mountable in a 19" rack, in a 23" rack, on a wall, or in a cabinet. Alarm and craft interfaces, as well as power and traffic-carrying signals, are located on both the left and right sides of the shelf to provide convenient access. The OSIRIS XTD Shelf is ideal for head-end SONET/SDH applications, including Central Office (CO) systems. The XTD shelf offers:

- Support for 155M/622M/2.5G line rates
- Access to up to 12 STS-1/VC-3 of bandwidth
- Slots for up to 23 mappers



OSIRIS XTS Shelf

The OSIRIS XTS Shelf is an 18"-wide shelf that is mountable in a 23" rack, on a wall, or in a cabinet. Alarm and craft interfaces, as well as power and traffic-carrying signals, are located on both the left and right sides of the shelf to provide convenient access. The OSIRIS XTS Shelf is ideal for 622M or 2.5G rings with medium-fill SONET/SDH access applications. Some of the features the XTS shelf provides are:

- Support for 155M/622M/2.5G
- Access to up to 12 STS-1/VC-3 of bandwidth
- Slots for up to 13 mappers



OSIRIS STD Shelf

The OSIRIS STD Shelf is a 14"-wide shelf that is mountable in a 19" rack, in a 23" rack, on a wall, or in a cabinet. Alarm and craft interfaces, as well as power and traffic-carrying signals, are located on both the left and right sides of the shelf to provide convenient access. The OSIRIS STD Shelf is an ideal product for medium-to-low-fill SONET/SDH access applications, including corporate center and campus systems. The STD shelf provides the following features:

- Support for 155M/622M/2.5G line rates
- Access to up to three STS-1/VC-3 of bandwidth
- Slots for up to nine mappers

Electrical, Optical and Data Modules

The OSIRIS platform offers a wide variety of electrical, optical and data modules that can be used in the different shelves.

Optical Access Units

The OSIRIS Optical Access Units (OAUs) provide the multiplexing for all mapper units in SONET/SDH, as well as electrical-to-optical conversion of the associated signals. The OAUs collect all payload data from the backplane and add the SONET/SDH framing and overhead to build the standard signals. The OAUs perform all necessary synchronization, pointer, and overhead processing, as well as multiplexing and demultiplexing functions. A variety of OAUs are offered in short reach (SR), intermediate reach (IR) and long reach (LR).

All of the following OAUs are available with a choice of FC, SC, or ST connectors:

- 155M – IR-1, LR-1, LR-2
- 622M – IR-1, LR-1, LR-2
- 2.5G – IR-1, LR-1, LR-2

Electrical Mapper Units

The OSIRIS electrical mapper units map electrical signals onto SONET/SDH networks. They exist in the following models:

Four-channel E1/DS1 and seven-channel DS1	One-channel EC-1 Bulk
One-channel DS3/E3	One-channel EC-1 VT

Optical Mapper Units

The OSIRIS optical mapper units map optical signals onto SONET/SDH networks. The following one-port units are available:

- OC-3c/STM-1, multimode, duplex; SC
- OC-3c/ STM-1, single mode, IR-1; ST
- OC-3/ STMTU12 Tributary; single mode; IR-1, LR-1, LR-2; FC, SC, ST

Data Mapper Units

The OSIRIS data mapper units map Ethernet and Fast Ethernet signals onto SONET/SDH networks. In addition, the Multi-Service Ethernet (MSE) mapper, which incorporates next generation Ethernet over SONET (EoS) technologies (GFP/VCAT), enables cost-effective, dynamic, flexible and efficient bandwidth provisioning of Ethernet services across today's multi-vendor SONET/SDH networking environment.

MSE mappers exist in the following models:

- Four-port 10/100 Ethernet Electrical (RJ45)
- Four-port 100FX Ethernet Optical (SFP duplex LC)
- Four-port 10/100 Ethernet Electrical (RJ45) with Integrated Layer 2 switch

Support Modules

Support modules for the OSIRIS include the following:

- 32 MB network monitor and control unit (NMCU) plug-in card
- Protection switching control unit (PSCU)
- AUX2 auxiliary unit for user input/ output (I/O)
- Buffer interface unit (BIU)

Power Supply

The OSIRIS XTD, XTS and STD shelves can be powered using the Positron DC Power System, a compact power supply with the following features:

DC Power Enclosure

- Integrated distribution with 8 GMT fuse positions and system status LED indicators
- Up to two rectifier positions for a redundant or non-redundant power system
- Battery thermal compensation which can be enabled or disabled
- Four relay alarm contacts for AC, rectifier, distribution and battery alarms

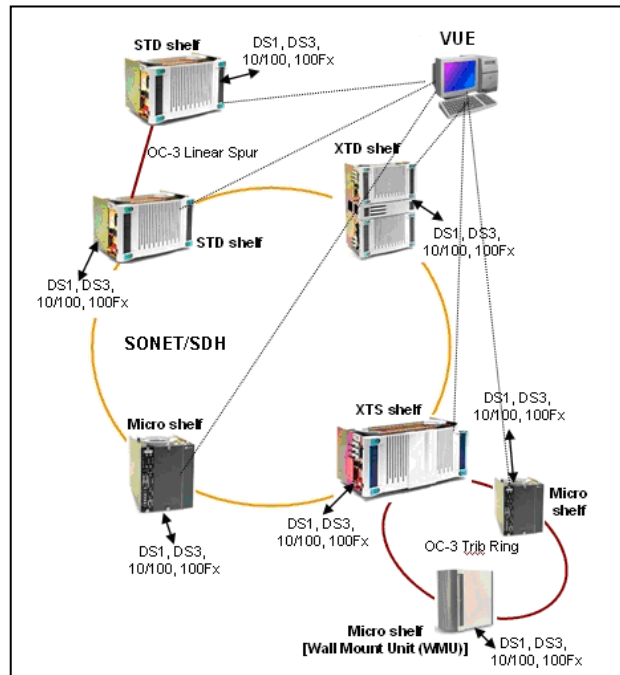
DC Battery Enclosure

- Fully connectorized to the power enclosure with no internal wiring required for installation
- Built-in protection with internal temperature sensor and 15A breaker
- Expandable system allows daisy chaining of additional battery enclosures

Element and Network Management

The OSIRIS platform can be monitored, provisioned and configured via the VUE and VUE PLUS! management systems. VUE and VUE PLUS! run on Windows 95/98/NT/2000/XP platforms and offer simple management of OSIRIS network elements. Simple network management protocol (SNMP) alarms are also supported in VUE and VUE PLUS! via an SNMP trap agent.

OSIRIS Network Application



Product Specifications

Network Architecture	
Line Rate	155M to 2.5G
Service Interface	DS1, E1, DS3, E3, Ethernet, Fast Ethernet, Multi-Service Ethernet
Protection	UPSR/SNCP, Pt-Pt, 1:N (for tribes)
Packet Processing	EoS (GFP & VCAT via Multi-Service Ethernet Mapper), L2 Switching
Environmental	
EMI Environmental	FCC Part 15, Class A
Humidity	5% to 95%, non-condensing
Operating temperature	-40 °F to +149 °F (-40 °C to +65 °C) With 155M OAU 32 °F to 122 °F (0 °C to 50 °C) With 622M/2.5G OAU and/or MSE, Ethernet Fast Ethernet mappers
Storage temperature	-40 °F to +185 °F (-40 °C to +85 °C)
Power Compliance	-20 Vdc to -60 Vdc (-40 Vdc to -60 Vdc for OC-48 OAU)
Safety	UL 1950; CSA C22.2, No. 950; EN60950
SONET	Telcordia GR-253-CORE, GR-1400