



JungleMUX™

SONET Multiplexer

The ideal optical networking solution
for electric utility, transportation,
pipeline and industrial applications

KEY BENEFITS

- Functions as a SONET OC-1, OC-3 or OC-12 drop-and-insert multiplexer with up to 672, 2016, or 8064 DS-0 channel drop capacity
- Robust environmental design
- Supports point-to-point, linear add/drop, ring and multiple ring plus spur network topologies
- Extremely fast path protection switching (<3 ms)
- 1310 nm and 1550 nm optical interfaces available
- Economically scalable for all sizes of networks and sites with varying service requirements
- System expansion, reconfiguration and maintenance are easily performed with a minimum of system downtime, travel expense and test equipment
- Improves reliability through integration of all network requirements into a common package
- NMS allows visibility of network traffic down to each individual DS-0 signal
- Allows common NMS integration using IP
- Optional video control system package
- Optional SNMP Network Management System (NMS) interface

APPLICATION MODULES

- Ethernet WAN/IP
- Video, voice, data and teleprotection
- DS-1, DS-3
- Digital telemetry and orderwire
- Channelized T1



Multilin

SONET Network Access

Facing increasingly complex demands for communications and security, organizations are looking for cost effective, reliable solutions for managing mission critical operations. The robust design of the GE Multilin JungleMUX SONET Multiplexer makes it the ideal optical networking solution for electric power utility, transportation, pipeline and many industrial requirements.



System Technology

This powerful SONET multiplexer has a modular design for ease of maintenance, configuration flexibility, and expandability. The JungleMUX delivers the benefits of the Bellcore SONET telecommunications standards to applications previously serviced by a mix of proprietary and legacy standards based equipment.

The multiplexer provides redundancy for critical modules, with guaranteed performance over an extended ambient temperature range of -4°F to +140°F (-20°C to +60°C). It meets ANSI/IEEE Surge Withstand Capability (SWC), Radio Frequency Interference (RFI) as well as Zone 4 Earthquake specifications providing secure performance in harsh environments.

The JungleMUX is powered by 115 VAC or 24, 48, 130 VDC sources. Its built-in test capabilities can save the cost of purchasing SONET test equipment. The JungleMUX can be customized to the user's requirements by equipping each site with specific modules as needed. New modules are continually under design.

SONET Network Flexibility

Replacing JungleMUX optical transceiver modules allows users to expand an existing JungleMUX system to a higher capacity, while maintaining their capital investment.

Mixed JungleMUX access networks of T1, and OC-1/OC-3, combined with JungleMUX backbone rings of OC-3 or OC-12 cost effectively distribute telecommunications services, allocating bandwidth only where it is needed.

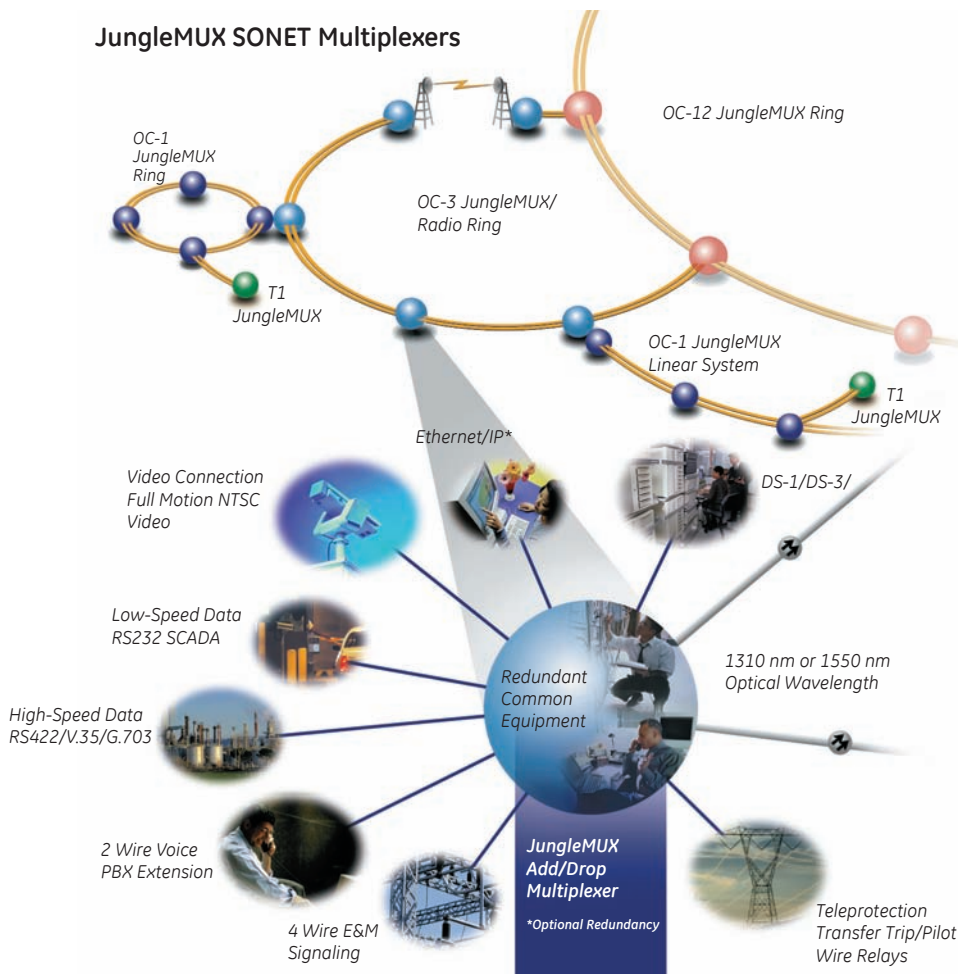
The product also has the flexibility to operate with third party SONET microwave radios and higher capacity OC-n multiplexers.

Operations, Administration, Maintenance and Provisioning (OAM&P)

The JungleMUX takes advantage of the inherent network management capabilities provided by the SONET telecommunications standards.

The JungleMUX OAM&P system provides network visibility down to the individual DS-0 circuit level at all nodes. This facilitates remote provisioning, monitoring, and alarm logging of the network from any node. The OAM&P GUI based software operates on a Windows® based personal computer. An optional SNMP Network Management System (NMS) interface is available. The OAM&P is also used for system diagnostics

JungleMUX SONET Multiplexers



and troubleshooting.

Visibility of all JungleMUX equipment, including the DS-0 tributary units, improves maintenance response time and saves the operator money.

Video Interface

In the past, separate telecommunication networks were used to obtain quality video, requiring additional infrastructure.

JungleMUX networks support both 48 Mb/s and 12 Mb/s video wide area networks (WANs). Each analog video source (camera, VCR, DVD, etc.) is digitized with a user configurable compression algorithm for bit-rate bandwidth management and then integrated into a shared video WAN.

For incident detection in surveillance applications, intelligent bandwidth allocation allows more bandwidth to be instantly assigned to specific cameras, permitting a higher resolution and more frames per second. When required, audio and data channels may be transported with the video.

The JungleMUX video interface addresses the issues of quality versus bandwidth by efficiently transporting video signals.

An optional remote video interface accessory is also available, which cost effectively extends video capability up to 24.8 miles from a JungleMUX node via fiber optic cable.

Applications

Electric Power Utilities

Originally designed for the unique needs of utilities, the JungleMUX system supports a wide range of specialty traffic, including teleprotection (direct transfer trip, pilot wire, and IEEE C37.94 optical interface to protection relays), surveillance video, substation automation, Ethernet WAN/IP and telephony.

High system availability is provided through redundant common equipment and compliance with Bellcore SONET standards for path switched ring protection architecture.

But JungleMUX goes beyond SONET standards, offering the industry's fastest path protection switching (<3 ms), and incorporating special design characteristics that allow it to meet ANSI/IEEE RFI and SWC standards for operation in harsh utility environments.

Transportation Corridors

For highway, roadway, bridges, tunnels, rail transit, freight railway, and airport applications the JungleMUX system cost-effectively integrates services previously provided by proprietary and legacy standards based equipment. Now

these services can be combined to receive the full benefits of a SONET network.

For applications such as video surveillance, toll collection, traffic monitoring and control, VMS, emergency voice, signaling and loop detection, the JungleMUX is the optical communications product of choice.

Pipelines and Industrial Facilities

The rugged design, compact size and low power consumption of the JungleMUX also make it the ideal optical communications solution for oil, gas, refined products, water and slurry pipelines. Field proven industrial applications include electrical distribution protection and control, as well as oil or gas production field SCADA.

The JungleMUX SONET Multiplexer creates greater value for its user by carrying a multitude of services such as low speed polling data, SCADA, power measurement data, video surveillance, Ethernet WAN/IP and PBX phone drop extensions over a single network.

