

EdgeLink® OTM1000

OC-3 Terminal Multiplexer



The EdgeLink OTM1000 from Telco Systems is the first optical SONET edge solution that allows service providers to deliver traditional T1 and T3 services over an OC-3 fiber feed. It also allows DS3, T1 and T3 access using Ethernet without the wasted bandwidth found with traditional Packet over SONET (PoS) offerings.

The EdgeLink OTM1000 was designed to address the need for compact and efficient last-mile delivery of voice and data services. It optically transports an OC-3 to locations where copper cannot reach and where voice and data service delivery needs exceed T1 or T3 services.

Key differentiators for the OTM1000 in the SONET terminal multiplexer market are its flexibility and efficiency. It has the ability to virtually concatenate (VC) two STS-1 payloads into a single payload that can carry a 100BaseT Ethernet (Fast Ethernet) connection with a DS3 available for delivery, or to be used with an M13 for T1 fan out.

Ethernet over SONET

Ethernet over SONET (EoS) offers a convenient and standards-based method of combining Ethernet and TDM-based services over existing Fiber networks. The majority of base stations have T1 or T3 connections today; SONET solutions that support EoS facilitates backhaul of these T1/T3 services while offering expansion to newer Ethernet-based services. In addition to service flexibility, SONET provides for the highly resilient network requirements prominent with service provider, utility and government microwave radio applications.

An existing SONET site uses the EdgeLink OTM1000 for EoS as well as T3. As bandwidth demands dictate and Ethernet service availability

increases, newer cell sites may be constructed for IP traffic to support newer handsets and Ethernet radios.

Flexible Scalable Design

The OTM1000 can be configured with 3 DS3s, 1 or 2 DS3s and up to 8 Ethernet ports, 1 DS3 and 1 Fast Ethernet port, or 2 DS3s and 12 DS1s. The virtually concatenated (VC) scheme uses maximum efficiency as opposed to wasting bandwidth by mapping a 100BaseT Ethernet connection to a single OC-3 155 Mbps, which is typical with PoS.

Extended Performance Management

The EdgeLink OTM1000 offers flow-through TL1 and SNMP management and provisioning to downstream Telco Systems' EdgeLink 100 DS3 multiplexers for a complete OC-3-to-84 T1 solution. Service providers can reach their customer premises from their SONET POPs, have full TL1 and SNMP visibility for network performance through the higher-order SONET ADM. This allows them to offer their customers converged voice and data services without overlaying networks.

Available for any Environment

EdgeLink OTM1000 has an extended temperature rating and is rugged enough to handle any environment. It is ideal for applications that require installation in uncontrolled remote locations, such as RTs or cell sites.

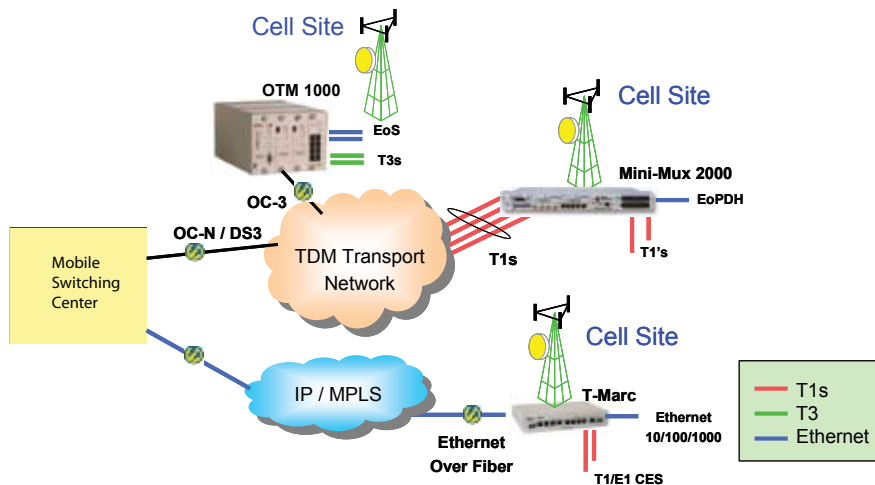
Custom Configuration Services

Telco Systems provides complete, customized telecommunications solutions that meet Service Providers' specific deployment needs from CO to CPE and remote Co-Lo applications.

- Virtual concatenation (VC) for efficient delivery of Ethernet using existing SONET networks
- Highest, most flexible drop port options available in its class (T3, T1, and Ethernet)
- Extended temperature operation for uncontrolled environments
- GR-253 compliant OC-3 transport
- Compact – only 3 RU high by 7" wide - three units can be mounted side-by-side in a 23" rack
- OSMINE support (TIRKS, NMA)
- 1:1 circuitry protection, 1+1 optical redundancy
- Hot insertion and card swap out
- Interoperability and DCC compatibility to higher-order Add/Drop multiplexers
- CPE packaging
- Flow through TL1 and SNMP management
- TL1 sets and gets support
- Menu-driven RS-232 interface
- NEBS Level 3 certified
- Custom rack-and-stack configurations available

EdgeLink OTM1000

Most efficient delivery of voice and Ethernet services over SONET networks



This diagram shows an existing SONET site using the EdgeLink OTM1000 for Ethernet over SONET as well as T3. Ethernet migration typically begins at the endpoints by adding Ethernet base stations. Telco Systems' EdgeLink Mini-Mux™ 2000 can be connected to 2G and 3G base stations with copper T1/E1 circuits and EoPDH. These circuits are combined into a single DS3 or 4 separate T1/E1s and fed into the TDM transport network to support 2G and 3G/3.5G handsets.

Specifications

Network Side

OC-3 Interface

- Line Rate: 155.52 Mbps \pm 32ppm
- Redundancy: 1+1
- Fiber: Single-Mode 1310 nm
- Span: 15km IR, 40km LR
- Power Level: -8 dBm to -15 dBm
- Receive Sensitivity: -36dBm6

Drop Side

DS3 Interface

- No. Duplex Lines: Up to 3 per shelf
- Line Rate: 44.736 Mbps \pm 20 ppm
- Line Code: B3ZS
- Framing: P-Bit (M13)
- Redundancy: 1:1
- Line Impedance: 75 ohm, unbalanced
- Pulse Amplitude: .36V to .85V
- Cable: 728A, RG-6/U, 734U, 735U
- Span: 450 ft. to cross-connect
- Power Level: -2.7dBm to +4.7dBm

DS1 Interface

- Number of Lines: Up to 12 per shelf
- Line Rate: 1.544 Mbps \pm 32ppm
- Line Code: Selectable AMI/B8ZS

- AIS Line Rate: 1.544 Mbps \pm 32ppm
- Line Impedance: 100 ohm, nominal balanced
- Pulse Amplitude: 2.4V to 3.6V
- Cable: ABAM or equivalent
- Span: 655 ft. to cross-connect

Ethernet Interface

- Number of Lines: Up to 8-10BaseT or 1-100BaseT per shelf
- Transmission: Full duplex flow control
- Range: 100m

Interfaces

- OC-3 Optical: SC
- DS3 Electrical: BNC, male
- DS1: RJ45
- Ethernet: RJ45
- Craft/Modem: 9 pin D Male
- Ethernet/Telnet: 10BaseT RJ45
- Alarm Contact: Wire wrap
- External Clock: Dual source wire wrap
- Power: Dual feed terminals

System Management

System Management

- Embedded SNMP Management
- TELNET
- TL1 Alarming and Provisioning over TCP/IP or TELNET
- Local Craft VT-100/ANSI Terminal (Menu-driven)
- Office Alarms (4 input and 4 output)

- Status LEDs
- DCC Formats IP, OSI, PPP (Header only), PPP (Full stack)
- 4 Levels of Security

Power Requirements

- Voltage: -41.5 to -56.3 Vdc
- Power Consumption: 23 watts typical
- Heat Dissipation: 78 BTU
- Recommended Max Fuse: 5 Amps
- Current Draw: 500 Amps typical

Environmental

- Operating Temperature: -40°C to 65°C
- Relative Humidity: Up to 90%, non-condensing
- Altitude: Up to 13,000 ft above sea level

Compliance

- FCC 15 (Class A)
- UL 1950
- CSA 22.2
- GR-499-CORE
- GR-253-CORE
- GR-1089 & GR-63 (NEBS Level 3)
- ITU-T G.707, G.7041 (GFP, VC)

Dimensions

- Height: 5.25" -3 rack unit
- Width: 7"
- Depth: 10"
- Weight: 8 lbs fully loaded

Ordering Information

Part Number	Description
AXX320G1	OTM1000 system equipped for 3 DS3 drops (unprotected mode)
AXX320G3	OTM1000 system (unprotected), Long Range, 40km
AXX321G1	OTM 1000 system equipped for 3 DS3 drops (protected mode)
AXX321G3	OTM1000 system (protected mode), Long Range, 40km

Key Applications

- Wireless Backhaul of OC-3, DS1, DS3 and/or Ethernet services
- Core/POP to edge application
- Ethernet over SONET
- DS1 services of Fiber
- Cost-effective transport solutions



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