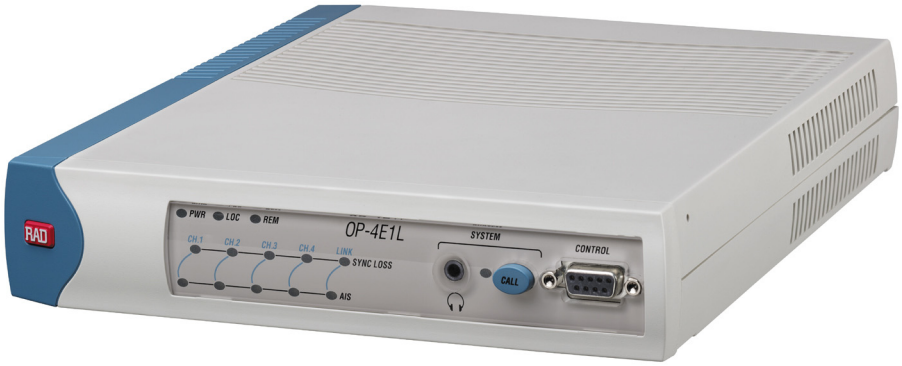
Optimux-4E1L

Four E1 Channel Multiplexer



Optimux

FEATURES

- Multiplexes four E1 channels over a single E2 link
- E2 transmission over coax or fiber optic cable
- Operates with various fiber interfaces:
  - Multimode fiber
  - Single mode fiber
  - Single fiber (WDM)
  - Single fiber/ single wavelength
- Range up to 120 km (74 miles)
- Conforms to ITU G.703, G.742, G.823, G.956
- Management via ASCII terminal or SNMP management station
- Remote management using inband channel
- Compact 1U high, half 19-inch size
- Operates opposite Optimux-4E1 (standalone or card version for the LRS-24 19-inch rack)

DESCRIPTION

- Optimux-4E1L is a multiplexer that combines up to four E1 channels over a single coax or fiber optic E2 link. A pair of Optimux-4E1L units offers simple and low-cost connectivity of four E1 channels at distances of up to 120 km/74 miles (see *Figure 2*).
- Various optical interfaces are available:
  - 850 nm for multimode fiber LED
  - 1310 nm for multi mode fiber LED
  - 1310 and 1550 nm laser for extended range over single mode fiber
  - 1310 and 1550 nm laser for single fiber – WDM (Wavelength Division Multiplexing) operation.
  - 1310 nm laser for single fiber/ single wavelength operation
- Optimux-4E1L transmits each of the E1 channels independently, such that the clock of each E1 channel is independent of the clock of any other E1 channel. The E1 interface can be 75Ω unbalanced or 120Ω balanced (see *Ordering*).
- Optimux-4E1L can operate opposite an Optimux-4E1 standalone unit or an OP-4E1 card for the LRS-24 19-inch rack with central SNMP management. This option provides a compact, cost effective central solution (see *Figure 1*).
- To facilitate system diagnostics, Optimux-4E1L features LED status indicators, AIS alarm generation, recognition and dry contact closure upon link failure.
- Configuration, monitoring and maintenance can be performed using an ASCII terminal or a SLIP connection to an SNMP management station.
- The SNMP management supports:
  - RADview-PC running on PC/Windows
  - RADview-HPOV running on an HP OpenView UNIX platform.
- Optimux-4E1L is available as a compact 1U high half 19-inch unit, which can be mounted in a 19-inch rack.

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APPLICATIONS

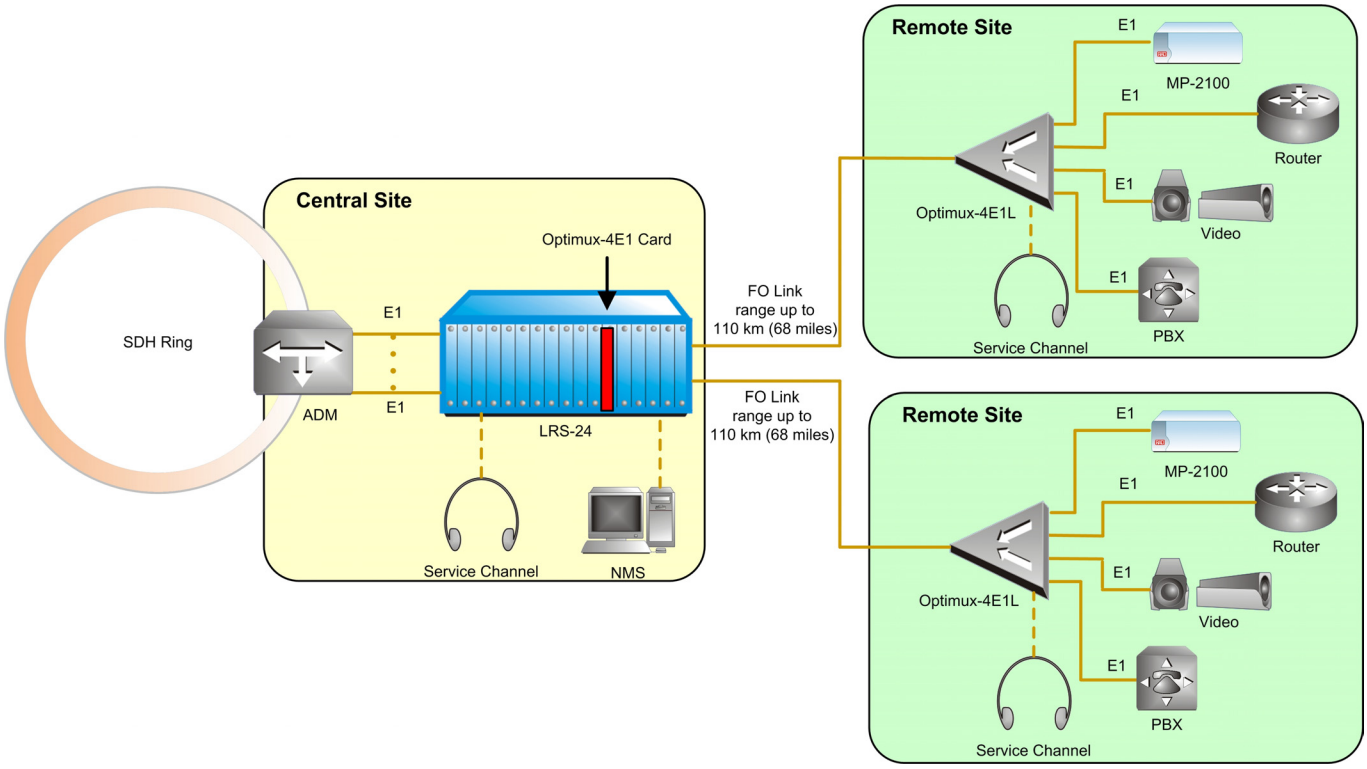

Figure 1. Central to Remote Multi-Site Application

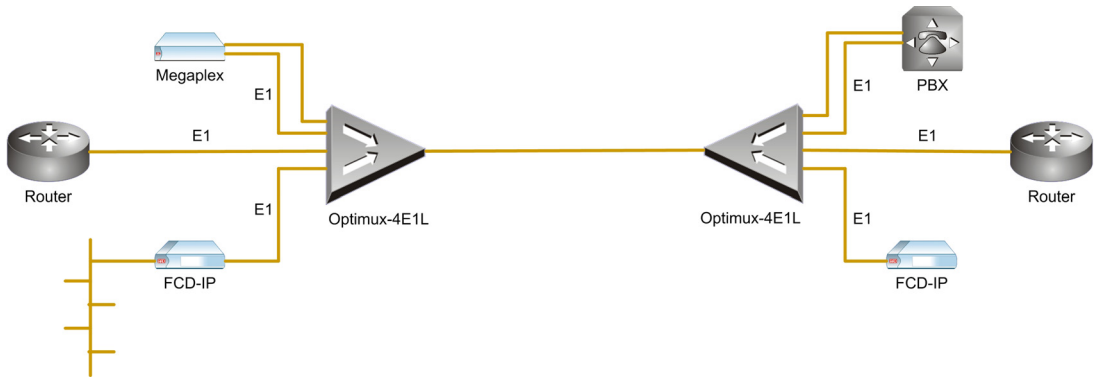

Figure 2. Corporate Point-to-Point Application

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SPECIFICATIONS

E1 CHANNELS

- **Number of Channels**
  4
- **Data Rate**
  2048 kbps
- **Line Code**
  HDB-3 or AMI
- **Impedance**
  - 120Ω, balanced
  - 75Ω, unbalanced
- **Connectors**
  - Balanced: RJ-45
  - Unbalanced: pair of BNC

ELECTRICAL E2 LINK

- **Data Rate**
  8448 kbps
- **Line Code**
  HDB-3
- **Impedance**
  75Ω, unbalanced
- **Connectors**
  BNC

OPTICAL E2 LINK

- **Connectors**
  ST, FC/PC or SC
- **Interface Characteristics**
  See *Table 1*

GENERAL

- **Physical**
  Height: 4.4 cm / 1.7 in
  Width: 21.5 cm / 8.5 in
  Depth: 24.3 cm / 9.6 in
  Weight: 1.5 kg / 3.2 lb
- **Power**
  - **AC:** 100–240 VAC, 50–60 Hz, 13.5 VA;
    OR
  - **DC:** -48 VDC (-40 to -72 VDC), 9.5W
- **Environment**
  Temperature: 0–50°C/32–122°F
  Humidity: Up to 90%, non-condensing

Table 1. Fiber Optic Interface Characteristics

Wavelength (nm)	Fiber Type (µm)	Transmitter Type	Typical Power Coupled into Fiber (dBm)	Receiver Sensitivity (dBm)	Typical Maximum Range (km)	(miles)
850	62.5/125 multimode	VCSEL	-15	-34	4.5	2.8
1310	62.5/125 multimode	LED	-18	-32	7	4.3
1310	9/125 single mode	Laser	-12	-34	47	29.2
1310	9/125 single mode	Laser (long haul)	-2	-34	72	44.7
1310	9/125 single mode	Single fiber Laser (SF3)	-12	-27	20	12.4
1310/1550	9/125 single mode	WDM Laser (SF1, SF2)	-12	-34	47	29.2
1550	9/125 single mode	Laser	-12	-34	76	47.2
1550	9/125 single mode	Laser (long haul)	-1	-34	120	74.5

Note: The ranges specified above were calculated according to the following typical attenuation rates (with a 3 dB margin):
3.5 dB/km for 850 nm multimode
1.5 dB/km for 1310 nm multimode
0.4 dB/km for 1310 nm single mode
0.25 dB/km for 1550 nm single mode

Optimux-4E1L

Four E1 Channel Multiplexer

ORDERING

OP-4E1L/^/*/$/#+
Four E1 Channel Multiplexer

^ Specify E1 connector:
B for balanced
U for unbalanced

* Specify power supply
24 for -24 VDC

Note: The default power supply is a wide-range AC/DC power supply. The unit can be connected to either an AC power source (100 to 240 VAC), or to a DC power source (48 VDC).

$ Specify **S** for optional service channel

Specify link interface connector type:
CX for electrical interface with coaxial connectors
ST for ST type connector (not available with SF1, SF2 or SF3 options)
FC for FC/PC type connector (not available with SF1, SF2 or SF3 options)
SC for SC type connector

+ Specify link interface optical wavelength:
85 for 850 nm multimode LED
13 for 1310 nm multimode LED
13L for 1310 nm single mode laser diode
13LH for 1310 nm single mode, long haul laser diode
15L for 1550 nm, single mode, laser diode
15LH for 1550 nm single mode, long haul laser diode
SF1 for transmit 1310 nm (WDM laser), receive 1550 nm
SF2 for transmit 1550 nm (WDM laser), receive 1310 nm
SF3 for transmit and receive at 1310 nm laser diode

Note: For single fiber connection (WDM) when one of the units is ordered with SF1, the other should be ordered with SF2.

RM-28
Special hardware for mounting one or two Optimux-4E1L units in a 19-inch rack.

RAD
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154-100-10/04