

Optimux-XLT1

Fiber Optic Multiplexer



FEATURES

- Integrates multiple T1, Ethernet, Fast Ethernet and high-speed data channels
- Transmission over fiber optic cable
- Supports multimode fiber, single mode fiber and single mode over single fiber
- Laser diode option
- Range of up to 110 km (68 miles)
- Conforms to ITU G.703, G.742, G.751, G.823, G.956 and ANSI T1.102
- Optional redundant power supply
- Optional second fiber optic link provides automatic backup
- Management using ASCII terminal, Telnet or SNMP management station
- Compact 1U high enclosure

DESCRIPTION

- Optimux-XLT1 provides a simple, flexible and cost-effective solution for transporting multiple T1, Ethernet, Fast Ethernet and high-speed data channels over a fiber optic link to distances of up to 110 km (68 miles). The link is available with multimode fiber, single mode fiber or single mode over single fiber.
- Supports a single fixed 10BaseT Ethernet port, in addition to three hot-swappable channel modules. This provides a scalable solution that is flexible enough to meet the specific requirements of a broad range of applications.
- All critical components can be automatically backed up. This ensures that there is no single point of failure. An optional second link provides backup, using automatic switchover upon link failure. An optional second power supply provides power redundancy for fail-safe operation.

- Available hot-swappable channel modules:
 - Dual T1 channels
 - Quad T1 channels
 - 10BaseT Ethernet
 - 10/100BaseT Fast Ethernet (with VLAN support)
 - Quad V.35/X.21/RS-530 channels (1.544 Mbps each)
 - Single HSSI channel (6.369 Mbps).
- Various optical interfaces are available for the main link:
 - 850 nm for multimode fiber
 - 1310 nm for single mode or multimode fiber
 - 1310 and 1500 nm laser diode or long haul laser for extended range over single mode fiber
 - Single Fiber (SF1, SF2) using WDM technology (the transmit signal is at a different wavelength than the receive signal)
 - Single Fiber (SF3) using SC/APC technology, with a 1310 nm laser diode for single wavelength operation.

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- Ethernet data is transmitted using a built-in bridging function. The bridge operates at 6.369 Mbps and supports up to 10,000 addresses.
- A Fast Ethernet data module provides a single LAN interface, either 10BaseT (UTP) or 100BaseT (UTP). This module can operate in half or full duplex mode, provides auto-negotiation and supports VLAN. True net throughput is 6.369 Mbps.
- Optimux-XLT1 transmits each T1 channel independently, such that the clock of each T1 channel is independent.
- The high-speed data module enables communication between DTE units using V.35, X.21 or RS-530 interfaces at data rates of 1.544 Mbps.
- The HSSI data module enables communication between DTE units, using HSSI interfaces at data rates of 6.369 Mbps.
- To facilitate system diagnostics, Optimux-XLT1 features LED status indicators, AIS alarm generation, recognition and dry contact closure upon link failure.
- The Optimux-XLT1 setup, control and diagnostics can be performed via any of the following:
 - An ASCII terminal using the supervisory port
 - Telnet using the supervisory port
 - An SNMP management station via the Ethernet ports
 - A separate dedicated Ethernet management port
 - RADview-PC for the Windows environment
 - RADview-HPOV for Unix platforms.
- Optimux-XLT1 is available as a compact 1U high standalone unit that can also be mounted in a 19-inch rack.

APPLICATION

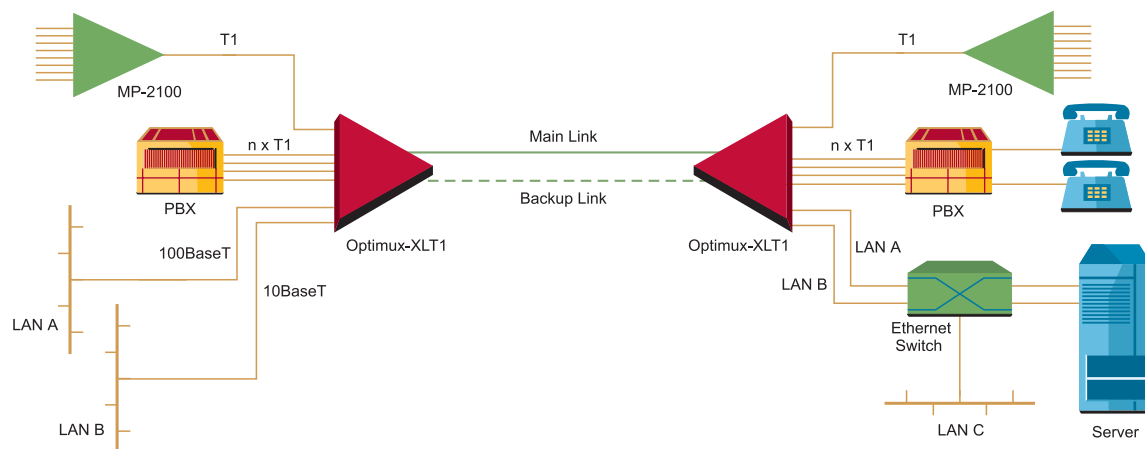


Figure 1. Point-to-Point Application

SPECIFICATIONS

CHANNEL MODULES

- **Number of Supported Modules**
Up to three
- **Module Types**
See Table 1

LINKS

- **Number of Links**
One link standard, second link optional
- **Specifications**
See Table 2

Note: It is possible to add a redundant link to an existing unit or to replace the original link modules by ordering an optional AMC module.

GENERAL

- **Alarms**
Dry contact relays for major and minor alarms through a DB-9 connector
- **Control Ports**
 - **CONTROL/MNG**
An RS-232 control port with a DB-25 connector for management via supervisory terminal
 - **MNG-ETH**
A separate 10BaseT Ethernet port with an RJ-45 connector for management

- **Power**
 - **AC Power**
100–240 VAC; 50/60 Hz; 70 VA
 - **DC Power**
24 VDC (18 to 36 VDC), 40W
-48 VDC (-36 to -75 VDC); 40W
- **Physical**
 - Height: 4.45 cm / 1.75 in
 - Width: 43.2 cm / 17.0 in
 - Depth: 26.8 cm / 10.5 in
 - Weight: 2.0 kg / 4.4 lb
- **Environment**
 - Temperature: 0° to 45°C
32° to 113°F
 - Humidity: Up to 90%, non-condensing

Table 1. Module and Connector Types

Link Options	Type of Connector	Data Rate
2 × T1	RJ-45, 100 Ω balanced	2 × 1.544 Mbps
4 × T1	RJ-45, 100 Ω balanced	4 × 1.544 Mbps
4 × V.35/X.21/RS-530	SCSI 26-pin *	4 × 1.544 Mbps
1 × HSSI	SCSI 50-pin	1 × 6.369 Mbps
Ethernet 10BaseT	RJ-45	1 × 6.369 Mbps
Fast Ethernet 100BaseT	RJ-45	1 × 6.369 Mbps

* Interface adapter cable is supplied

Table 2. Fiber Optic Interface Options

Wavelength	Fiber Type	Transmitter Type	Power	Receiver Sensitivity	Typical Max. Range		Connector Types
[nm]	[μm]		[dBm]	[dBm]	[km]	[miles]	
850	62.5/125 multimode	VCSEL	-18	-26	2.5	1.55	ST, SC, FC/PC
1310	62.5/125 multimode	LED	-18	-31	5.5	3.4	ST, SC, FC/PC
1310	9/125 single mode	LED	-15	-31	32	20	ST, SC, FC/PC
1310	9/125 single mode	Laser	-12	-31	38	23.6	ST, SC, FC/PC
1310	9/125 single mode	Laser (long haul)	-2	-34	70	43.4	ST, SC, FC/PC
1550	9/125 single mode	Laser	-12	-31	68	42.2	ST, SC, FC/PC
1550	9/125 single mode	Laser (long haul)	-1	-34	110	68.3	ST, SC, FC/PC
1310/1550	9/125 single mode	Laser WDM (SF1, SF2)	-12	-30	40	24.8	ST, SC, FC/PC
1310	9/125 single mode	Laser (SF3)	-12	-27	20	12.4	SC/APC

Note: The ranges given above were calculated according to the following typical attenuation rates:
 3.5 dB/km for 850 nm multimode
 0.4 dB/km for 1310 nm single mode
 0.25 dB/km for 1550 nm single mode

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ORDERING

OP-XLT1/*/**R**/**#**+/D

Multiplexer with built-in Ethernet port

Note: Up to three channel modules should be ordered separately (see below)

- * Specify power supply
AC for 100–240 VAC
48 for 36–75 VDC
24 for 18–36 VDC
AD for an AC power supply with a DC backup power supply (option **R** is not available when ordering this option)
- R** Specify **R** for second (redundant) power supply
- #** Specify the link connector type:
ST for ST type FO connector
SC for SC type FO connector
FC for FC/PC type FO connector
SC/APC for SC/APC type FO connector (for SF3 only)

Note: ST and FC options are not available with the SF3 module.

- + Specify wavelength/transmitter type for the optical link:
85 for 850 nm, multimode
13 for 1310 nm, single mode or multimode
13L for 1310 nm, single mode, laser diode
15L for 1550 nm, single mode, laser diode
13LH for 1310 nm, single mode, long haul laser diode
15LH for 1550 nm, single mode, long haul laser diode
SF1 for transmit 1310 nm, receive 1550 nm
SF2 for transmit 1550 nm, receive 1310 nm
SF3 for 1310 nm single wavelength laser

Note: For single fiber applications, a device with the SF1 interface should always be used opposite a device with the SF2 interface, and vice versa. The SF3 interface works opposite another SF3.

- D** Specify **D** for a second (redundant) link

Channel Modules

- OP-XL-M/2T1** for 2 × T1
- OP-XL-M/4T1** for 4 × T1
- OP-XL-M/ETH** for 10BaseT
- OP-XL-M/FETH** for 10/100BaseT
- OP-XL-M/HSSI** for HSSI
- OP-XL-M/4/1.5M/V35** for 4 × 1.544 Mbps V.35
- OP-XL-M/4/1.5M/X21** for 4 × 1.544 Mbps X.21
- OP-XL-M/4/1.5M/530** for 4 × 1.544 Mbps RS-530

Link Modules

It is possible to add a redundant link to an existing unit or to replace the original link modules by ordering one of the following AMC modules:

- AMC-M/SM/#/+/T** for single mode modules
- AMC-M/MM/#/+/T** for multimode modules



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