BLACK BOX®
NETWORK SERVICES

FibreLinX Media Conversion System

Highly secure network traffic manager for fibre infrastructures.

Key Features

▶ *Use low-cost copper-based switches in fibre applications.*

▶ *Preserve complete end-to-end fibre connection integrity.*

▶ *Conveniently monitor fibre traffic on switches and routers.*

▶ *Isolate SNMP traffic from the network through a separate management port.*

Your information is only as safe as its most vulnerable point. Keeping it safe can be an especially tough task if, for instance, your job is to manage switches in two different buildings and keep an eye on all the cabling or hardware between them. Why let the weakest link undermine the integrity of your entire network?

You need a comprehensive network-management strategy that addresses the entire network. FibreLinX from Black Box is your means to monitor and manage every component effectively and affordably.

It gives you the ability to deploy low-cost, copper-based, unmanaged switch products into fiber-based infrastructures while simultaneously providing complete end-to-end connection integrity. Manage entire long-haul fiber runs to remote locations or client sites.

Best of all, FibreLinX enables you to control the fibre traffic between switches and routers while remaining isolated from the remote (or customer's) network. Management and control traffic remains on the fibre between central and remote locations, but remote LAN users can't manage or monitor the FibreLinX. In turn, you're equipped to offer highly secure data services.

For added security, you can use a separate hub at your central site to further separate any remote-site management data from the central site. Just think of the advantages to ISPs and telcos: They can easily isolate and diagnose many types of fibre connection problems without a trip to the customer's site.

FibreLinX combines traditional copper-to-fibre media conversion technology with sophisticated switching technology and SNMP management—all without having to use expensive fibre switch hardware.

Each port on the FibreLinX includes its own MAC address, and data moves from one port to another through packet routing. FibreLinX checks the destination address of each packet entering the module to determine if it's a management or downstream data packet and routes it appropriately. Packets not addressed for management ports are sent through to the network, and management packets are routed internally to the management engine and are not forwarded.

Expect no degradation of performance even at peak management traffic—even though management and data traffic exist on the fibre between central and remote sites.

Each FibreLinX module includes both 10BASE-T and 10BASE-FL ports for data. You also get a 10BASE-T management port that's specifically designed for SNMP functions.

The hot-swappable modules install in the FibreLinX Power Chassis (LE1024A), a compact one-slot, table-top unit with an internal autosensing power supply.
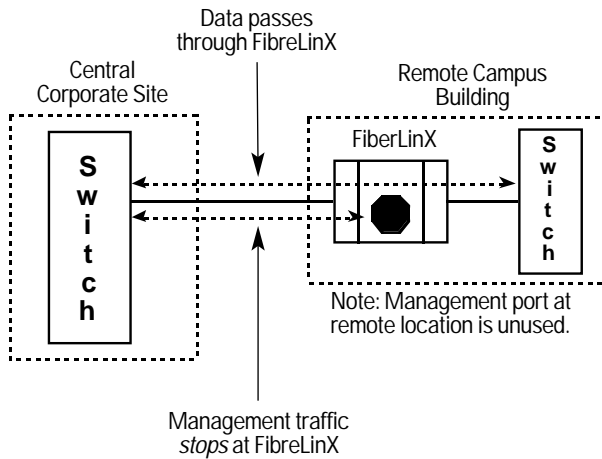

Typical applications:

Application #1: Direct fibre switch connection from central site to remote site

This configuration provides remote monitoring and management by directly connecting a FibreLinX module to a fiber-based switch. All management and data traffic travels straight into the switch at the central site. SNMP management traffic is embedded within the corporate network, but no management data passes to the remote site.

Application #1

Data passes through FibreLinX

Central Corporate Site

Remote Campus Building

FiberLinX

S w i t c h

S w i t c h

Note: Management port at remote location is unused.
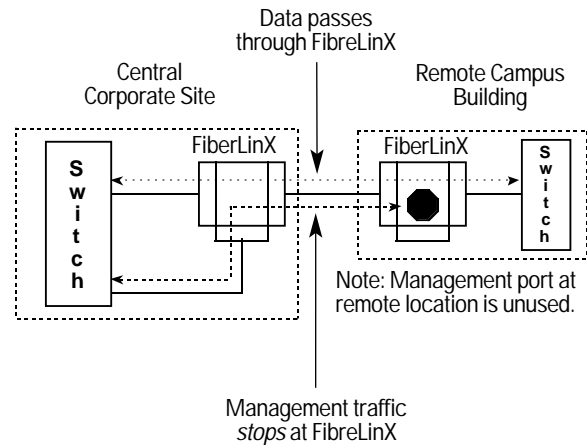
Management traffic *stops* at FibreLinX

Application #2: Fibre conversion and remote management between two copper-based switches

This configuration provides a higher security level than application #1 because the management information is routed to a separate switch port. The management information can be routed off the LAN to a dedicated management segment.

This configuration also incorporates 10BASE-T to 10BASE-FL conversion with inexpensive copper switches.

Application #2

Data passes through FibreLinX

Central Corporate Site

Remote Campus Building

FiberLinX

FiberLinX

S w i t c h

s w i t c h

Note: Management port at remote location is unused.

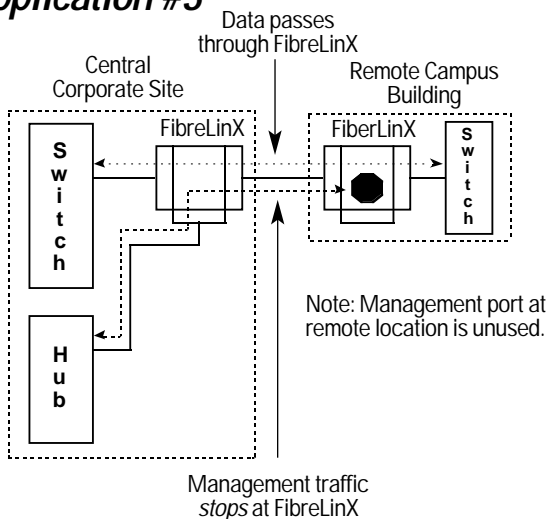Management traffic *stops* at FibreLinX

Application #3: Fibre conversion and highly secure remote management between two copper-based switches

This configuration provides the highest level of management by routing management traffic completely away from the switch. A separate hub is used to maintain LAN separation. This configuration can be used with low-cost switches while providing highly secure remote management.

Application #3

Data passes through FibreLinX

Central Corporate Site

Remote Campus Building

FibreLinX

FiberLinX

Switch

s w i t c h

Hub

Note: Management port at remote location is unused.

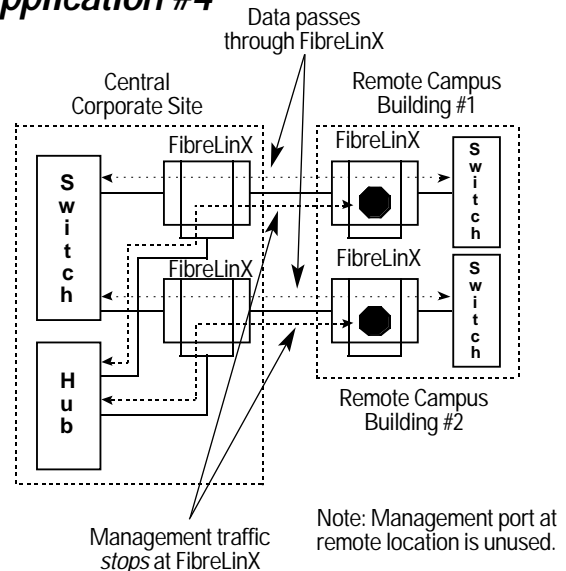Management traffic *stops* at FibreLinX

Application #4: Multiple fibre conversions and highly secure management among copper-based switches

Using the FibreLinX Power Chassis, up to 12 FibreLinX modules can be attached to 12 different campuses or remote sites. A separate hub is used to route all campus management information to a separate LAN. Again, low-cost switches can be used while providing secure remote management.

Application #4

Data passes through FibreLinX

Central Corporate Site

Remote Campus Building #1

FibreLinX

FibreLinX

FibreLinX

Switch

switch

switch

Hub

Remote Campus Building #2

Management traffic *stops* at FibreLinX

Note: Management port at remote location is unused.

iView Software and extensive management capabilities.

Use FibreLinX to remotely control your network equipment from a central location and cut administrative and control costs. SNMP traps alert you to potential network failures, reduce administrative overhead, and preserve network uptime.

FibreLinX comes with iView Management Software, which can be used by itself or along with standard SNMP software. It provides management for the FibreLinX Media Conversion System in an easy-to-use graphic interface.

Easier to use than traditional SNMP software, iView provides detailed information about the uplink port and downlink ports. You can even display statistics as charts. Use it together with SNMP for easy management plus complete SNMP network statistics.

You can view reports on:
• LAN packets received at or transmitted from the twisted-pair or fibre port.
• Cyclic Redundancy Check (CRC) errors at the twisted-pair or fibre port.
• Twisted-pair and fibre link status.

What's more, each FibreLinX includes a jack that you can connect to an array of external environmental devices, such as temperature or water-level sensors. SNMP traps alert you to switch closures.

You can also control the FibreLinX remotely via SNMP services to perform cold boots and clear counters. Or program FibreLinX with its own administrator-assigned address and bypass the SNMP console software altogether. This way, you can PING a network device to see if it's online and working.

FibreAlert and LinkLoss features notify you via SNMP traps and front-panel LEDs of hard-to-diagnose "silent" fibre faults, such as disconnected or broken fibre or twisted-pair cable.

Front-panel features.
Ports and controls are conveniently located on the front panel of each module:
• **Manual reset switch** to reboot the module.
• **Crossover switch** means that you can use straight-through cable for any application.

• **To Remote Port**, a single-mode or multimode 10BASE-FL port used to link a remote device.
• **To Local Port**, a 10BASE-T (RJ-45) port used to connect to a local switch or hub.
• **Management Port**, which you can use to route SNMP traffic on and off the fibre connection (to ensure LAN security by isolating SNMP traffic from other LAN traffic).

For at-a-glance network diagnosis, the FibreLinX module includes indicators on the fibre-pair port:

FDX shows full-duplex transmission when lit and half-duplex when dark.

ACT shows transmit or receive data activity.

When link pulses are present on the port, the **LNK** LED lights up.

When **FA** glows, you know the FibreAlert function is enabled.

You're also given point-to-point system status indicators:

FAR CPU UP indicates that the FibreLinX is connected to and in communication with a remote FibreLinX module.

When remote management is enabled, **FAR TP LINK** signals the status of the remote twisted-pair port.

SNMP indicates SNMP activity transmitted or received on the management port.

Similarly, the **TP ACT LED** indicates activity transmitted or received on the data port.

Specifications

Included Software — Product-specific MIB for SNMP management

Approvals — CE (LE1024A only)

Connectors — 10BASE-T: RJ-45; 10BASE-FL: (1) pair of ST or SC

LED Indicators — System: FAR CPU UP, FAR TP LINK, SNMP, TP ACT; Fiber pair port: FDX, ACT, LNK, FA

Power — 115/230 VAC, autosensing

Size — 4.3 x 19.1 x 19.3 cm

Weight — 1.6 kg

Ordering Information

ITEM	CODE
First, order the power chassis…	
FibreLinX Power Chassis (1-Slot, Table-Top, Internal Power Supply)	LE1024A
Next, choose the modules for your application…	
FibreLinX Modules	
10BASE-T to 10BASE-FL-SC	LE330C
10BASE-T to 10BASE-FL-ST	LE331C
10BASE-T to 10BASE-FL 1330-SC	LE332C
10BASE-T to 10BASE-FL 1330-ST	LE333C
10BASE-T to 10BASE-FL Single-Mode ST	LE334C
10BASE-T to 10BASE-FL Single-Mode Plus ST	LE335C
10BASE-T to 10BASE-FL Single-Mode SC	LE336C
10BASE-T to 10BASE-FL Single-Mode Plus SC	LE337C
You may also need…	
Duplex Fibre Optic Cable, PVC, ST-ST, Custom Lengths	EFN062-CC
Duplex Fibre Optic Cable, PVC, SC-SC, Custom Lengths	EFN4025
Category 5 Solid-Conductor Cable, 4-Pair, Straight-Pinned, PVC, 10-ft. (3-m)	EYN737MS-0010