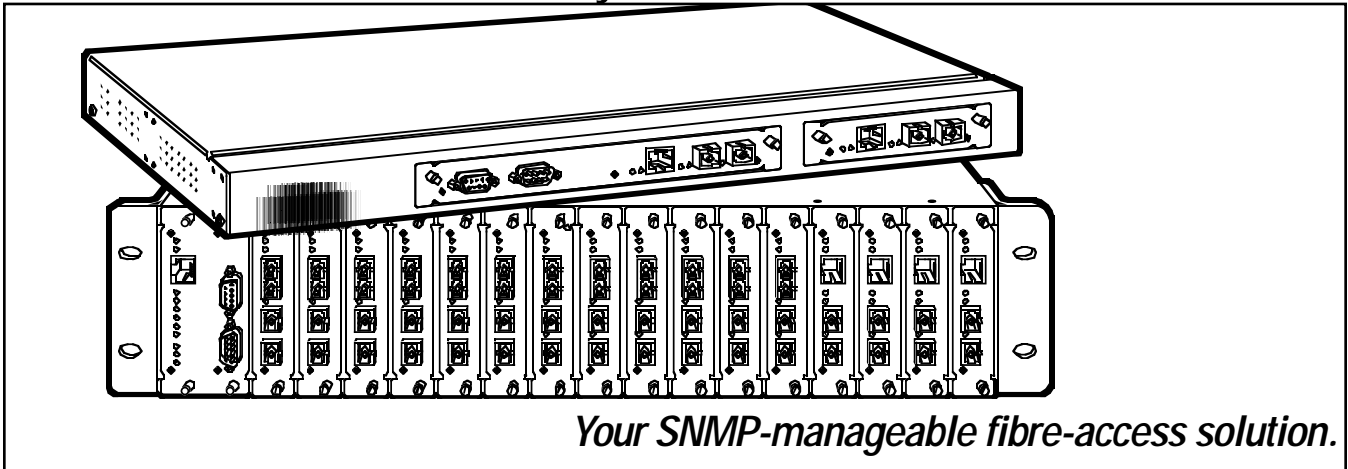


BLACK BOX[®]

NETWORK SERVICES

CityLIGHT[™]



Your SNMP-manageable fibre-access solution.

Key Features

- ▶ **SNMP management of 32 extension modules over 16 links.**
- ▶ **Compatible with 10/100-Mbps Ethernet and ATM.**
- ▶ **Centralize your extender modules in one chassis.**
- ▶ **Modules available with Wavelength Division Multiplexing (WDM) capabilities to maximize fibre strand.**
- ▶ **Simple to install and troubleshoot.**
- ▶ **Chassis can be rackmounted.**
- ▶ **Hot-swappable modules make upgrades easy.**

So you want to connect the remote workgroups in your LAN over fibre optic cable yet control the remote sites in the process? Then your sure bet is CityLIGHT[™] from Black Box.

It offers the simplicity and affordability of a transceiver with the power and control of SNMP for managing remote devices. The CityLIGHT system is ideal for companies wanting to centralize their control of critical resources. It's specifically designed for use between a central office or a local point of presence (POP) and end-user premises—or in any location where fibre runs fan out to remote sites.

With this modular, chassis-based fibre-access system, you can SNMP manage both local and remote transceivers. It's economical because you can effectively manage up to 32 fibre extender modules (16 links) from just one centralized device. And all multiple links can be managed using a single IP address.

Your chassis choices.

The 16-Slot Chassis (LCL210A) includes 16 transceiver card slots and an SNMP card slot, so you can manage 16 links from a single SNMP module. It's ideal for applications with multiple links and point-to-multipoint fanouts.

Please note that the LCL210A doesn't come with a power supply; you'll have to order that separately, either for 110/220-VAC (PS210) or 48-VDC (PS211) applications.

Or you can order the 1- or 2-Slot Chassis, which includes the power supply of your choice.

The 1-Slot (1U) Chassis with SNMP Slot (LCL231A–LCL234A) is ideal for any point-to-point network architecture, while the 2-Slot (1U) Chassis with SNMP Slot (LCL331A–LCL334A) particularly suits dual redundant links and three-site architectures in point-to-point applications.

You can also order the 2-Slot (1U) Chassis without an SNMP slot (LCL431A–LCL434A) if you only want to use CityLIGHT Fibre Extender Modules at the remote end. These chassis are also

available with various power-supply options.

All chassis feature a cooling fan for temperature management. With the aid of a CityLIGHT SNMP Card (which can only be used in a CityLIGHT chassis equipped with an SNMP slot), you can monitor the fan's speed at both local and remote ends. An alarm notifies you if the fan malfunctions or its speed falls below a specified level.

Other SNMP capabilities.

The CityLIGHT SNMP Cards (LCL111A–LCL113A) provide in-band and out-of-band SNMP management to a connected SNMP network management station.

The network management station links to the chassis using a unique Sideband[™] route—inside the fibre but isolated from the main data path—to determine whether a fibre extender module is functioning correctly. The card does this by polling each transceiver card in the CityLIGHT chassis (both local and remote) to determine the exact fault.

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(Continued from page 1)

By using this out-of-band route to troubleshoot, you can avoid problems unique to the LAN. In addition, you won't take up space on or jeopardize the security of the main path to the remote user.

With SNMP, you can also manage link and local-port status, power-supply status, fan status, chassis temperature, receive power, laser-bias current, and local and serial number information.

You perform actual management functions via a menu-driven interface that's included with the card's software. This interface can be accessed by using a VT100/220 terminal or a PC running VT100/220 emulation software through the serial interface or by establishing a TELNET™ session. Establish a TELNET session and the VT100/220 emulation looks just like a directly attached terminal.

The CityLIGHT SNMP console features eight main menu functions, which enable you to:

- Configure all interface-related parameters and enable or disable BootP server requests.
- Display link and system status.
- Set a new password and assign community strings.
- Download new software or display the firmware version in operation.
- Enable and disable trap alarms and set a trap recipient list.
- Configure modem settings and set the operating speed of PPP and console ports.
- Reset your system parameters to a default setting or auto reboot the system.

The CityLIGHT SNMP Card has an RJ-45 connector on its front panel, providing full support for 10- and 100-Mbps Carrier Sense Multiple Access/Collision Detect (CSMA/CD) Ethernet applications. It's fully compliant with the ISO/IEC 802.3 Ethernet standard.

The card also provides full support for data terminating equipment (DTE) and switching hub, repeater, and router connections. Order a crossover cable to connect the card to DTE-type devices. To connect to data communicating equipment (DCE), order a patch cable. The card supports in-band SNMP management traffic at distances up to 100 meters over Category 5 UTP cable.

Your transceiver card options.

Black Box currently offers four CityLIGHT Fibre Extender Modules that you can use in both local and remote CityLIGHT chassis—in any combination.

The 10/100-Mbps Ethernet Single-Mode Fibre Optic SC Card (**LCL531A**) is designed to provide both 10BASE-T and 100BASE-TX LAN interfaces.

It retransmits data between your connected devices, enabling you to connect LAN interfaces over extended distances. Each copper port has a maximum drive distance of 100 meters over UTP cable. The module supports distances of up to 36 km using standard optics or 50 km over high-power optics.

The card also reduces received jitter, which ensures error-free operation when connected to any IEEE 802.3 device. You connect the card to a DCE device using a standard straight-through cable or to a DTE device using the included

crossover cable.

And it not only works transparently with either full- or half-duplex ports attached, but you can even set the card to interoperate with switch ports that autonegotiate only, allowing you to achieve 100-Mbps full-duplex operation.

The module also transparently supports all frame sizes, including long frames used for VLAN tagging.

Diagnostic LEDs indicate the operating data rate, the integrity of the copper link, receive activity present on the copper port, faults on the transmit fibre path between cards, and receive power on the fibre ports. Use the CityLIGHT SNMP Card to manage the Ethernet module.

We also offer a Wavelength Division Multiplexing (WDM) version of the card (**LCL532A**) that uses two-way communication on a single fibre to give you double the bandwidth. In turn, you can reduce your number of fibre cables. (NOTE: All CityLIGHT WDM modules must be used in matching pairs.)

If you want a transceiver module for connecting ATM 155 (OC3) devices, then order either the **LCL631A** or the **LCL632A** (with WDM capabilities). Both support data-rate transmissions of 155 Mbps in ATM, so you can keep up with the heaviest of network traffic.

The ATM modules enable you to connect LAN interfaces over greater distances, converting multimode fibre signals for transmittal over single-mode fibre between connected devices. Get distances of up to 34 km over single-mode fibre and 50 km over high-power optics. On the multimode interface, you can achieve distances of up to 2 km.

LEDs alert you to loss of module power, faults in the transmit fibre path between local and remote cards, loss of carrier signal on the multimode fibre link, and loss of carrier signal on the single-mode fibre port. Manage the ATM module with the CityLIGHT SNMP Module.

Ease of setup.

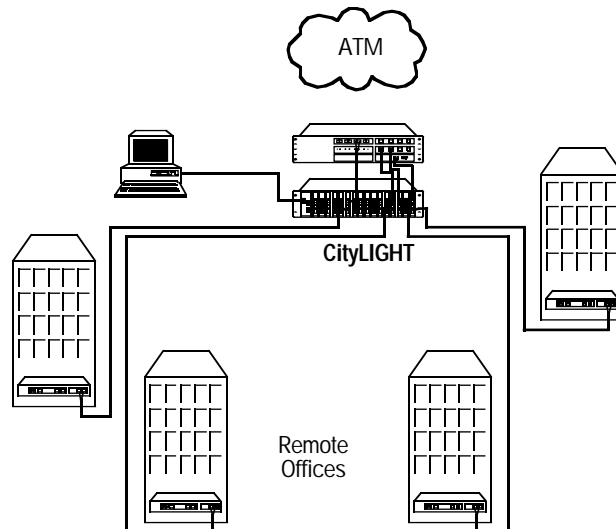
With CityLIGHT, there's only minimal DIP-switch configuration with the extender modules, making installation easy. Both local and remote transceiver cards intelligently configure themselves for SNMP management.

What's more, the CityLIGHT system is hot-swappable. To upgrade, simply swap in a new module. Because the SNMP agent automatically recognizes the transceiver card, there's no need to reconfigure the SNMP card.

You can even pass management information across the fibre link with or without the presence of user data. This way, you can test the fibre connection.

The CityLIGHT Fibre Extender Module in an ATM backbone.

This diagram shows one central office or exchange with links to four remote offices. Within the central office, the CityLIGHT chassis is used to provide connection to each remote site. One SNMP agent manages both ends of each link from the chassis up to and including every remote unit via the Sideband™ channel. Each office can run separate LAN protocols without affecting the management interface.



Specifications

Approvals — CE; UL* and cUL listed

Standards — *SNMP V.1*: UDP/IP
PPP/SLIP serial interface
ASN.1 CityLIGHT specific
MIB TELNET*;
Ethernet: IEEE 802.3, IEEE802.3u;
ATM: 155-Mbps OC3

Distance —

Ethernet: Twisted-pair: 100 m;
Single-mode fibre: 56 km;
Multimode fibre: 36 km;
ATM: Single-mode fibre,
standard power: 34 km;
Single-mode fibre,
high power: 50 km;
Multimode fibre: 2 km

Rackmountable — Yes (ears included)

Indicators — *SNMP Module*: LEDs:
Power, SNMP, Agent, Test;
Extender Modules: Power, RX
Alarm, Data Rate, Link,
Remote Fault, LAN-specific
diagnostics

Connectors — *SNMP Module*:
(1) DB9 F, (1) DB9 M, (1) RJ-45;
Ethernet: (1) SC pair, (1) RJ-45;
ATM: (2) SC pairs

Power — 1- and 2-Slot Chassis:
110/220 VAC, 50/60 Hz
or 48 VDC;
16-Slot Chassis (power supply
not included): 110/220 VAC,
50/60 Hz or 48 VDC

Temperature —
Operating: 0 to 40°C (32 to 104°F);
Storage: -10 to +70°C
(14 to 158°F)

Humidity — Up to 95%
noncondensing

Size — 16-Slot Chassis:
13.4H x 43.9W x 13.2D cm
(5.26" (3U) H x 17.3"W x 5.2"D);
2-Slot Chassis with SNMP Slot:
4.4H x 43.9W x 37D cm
(1.75" (1U) H x 17.3"W x 14.6"D);
1-Slot Chassis with SNMP Slot &
2-Slot Chassis without SNMP
Slot: 4.4H x 43.9W x 22.1D cm
(1.75" (1U) H x 17.3"W x 8.7"D)

Why Buy From Black Box? Exceptional Value. Exceptional Tech Support.

Recognise any of these situations?

- You wait more than 30 minutes to get through to a vendor's tech support.
- The so-called "tech" can't help you or gives you the wrong answer.
- You don't have a purchase order number and the tech refuses to help you.

According to a recent survey by Data Communications magazine, 90% of network managers surveyed say that getting the technical support they need is extremely important when choosing a vendor. But even though network managers pay anywhere from 10 to 20% of

their overall purchase price for a basic service and support contract, the technical support and service they receive falls far short of their expectations—and certainly isn't worth what they paid.

At Black Box, we guarantee the best value and the best support. You can even consult our Technical Support Experts before you buy if you need help selecting just the right component for your application.

Don't waste time and money—call Black Box today.

Ordering Information

ITEM	CODE
<i>First, select a 16-Slot Chassis and a power supply (listed separately)...</i>	
CityLIGHT Chassis, 16-Slot (3U) with SNMP Slot.....	LCL210A
<i>Or choose a 1- or 2-Slot Chassis that already includes a power supply...</i>	
2-Slot (1U) with SNMP Slot with 110/220-VAC Power Supply	
Single	LCL331A
Dual	LCL332A
with 48-VDC Power Supply	
Single	LCL333A
Dual	LCL334A
1-Slot (1U) with SNMP Slot with 110/220-VAC Power Supply	
Single	LCL231A
Dual	LCL232A
with 48-VDC Power Supply	
Single	LCL233A
Dual	LCL234A
2-Slot (1U) without SNMP Slot with 110/220-VAC Power Supply	
Single	LCL431A
Dual	LCL432A
with 48-VDC Power Supply	
Single	LCL433A
Dual	LCL434A
<i>If you've chosen the 16-Slot Chassis, then select a power supply...</i>	
110/220 VAC	PS210
48 VDC	PS211
<i>For SNMP management capabilities, order...</i>	
CityLIGHT SNMP Modules	
for 16-Slot Chassis.....	LCL113A
for 2-Slot Chassis.....	LCL112A
for 1-Slot Chassis.....	LCL111A
<i>Then, select modules that match your LAN type and fibre cable type...</i>	
CityLIGHT Fibre Extender Modules	
10/100-Mbps Ethernet	
Single-Mode Fibre Optic SC	LCL531A
Single-Mode Fibre Optic SC with WDM	LCL532A
ATM Multimode Fibre to Single-Mode Fibre with SC Connectors	
ATM 155-OC3	LCL631A
ATM 155-OC3 with WDM.....	LCL632A
<i>For optimum performance, order...</i>	
Category 5 Patch Cable, 100-MHz, 4-Pair, Straight-Pinned, PVC, Beige, 10-ft. (3-m).....	
	EVMSL05-0010
Duplex Fibre Optic Cable, PVC, Custom Lengths	
ST®-ST	EFN062-CC
SC-SC.....	EFN4025