

Vertical-Mount Managed Fiber Switch

More than 20 modular port options enable almost unlimited configuration flexibility.



FEATURES

- » Outfit the switch with copper-only, fiber-only, or mixed-media modules.
- » Supports up to a total of 16 ports.
- » RJ-45 ports feature Auto MDI/MDI-X.
- » Fiber modules have ranges from 2 to 70 kilometers (1.2 to 43.5 mi.)!
- » GBIC Transceiver Modules uplink to Gigabit Ethernet.
- » Ideal for use in industrial settings.
- » Robust management.

OVERVIEW

You're not the type for cookie-cutter solutions. When given choices of only A, B, or C, you want D through Z just to explore all your networking options.

At Black Box, we know how you feel—and we've done something about it. Our [Vertical-Mount Managed Fiber Switch](#) is the switch you've always wanted, with more than 20 modular port options that enable almost unlimited configuration flexibility.

Plus, the switch withstands an extraordinary temperature range and is engineered to mount vertically against the wall, making it ideal for industrial environments.

The [Vertical-Mount Managed Fiber Switch](#) is great for transportation and traffic control systems, utilities, and factory environments, as well as video surveillance systems with segments requiring Gigabit backbone connections.

Unleash your inner engineer.

The [Vertical-Mount Managed Fiber Switch](#) is available in an autosensing AC version and three DC-powered versions. Each chassis features an A slot and a B slot that can be outfitted with Multiport Media Modules, Gigabit Modules, or User-Selectable

GBIC Transceiver Modules—all this enables you to customize the switch to your network's specifications.

Multiport Media Modules come in three varieties: Copper Only, Fiber Only, and Mixed Media.

You can connect Copper Only and Mixed Media modules with RJ-45 ports to Ethernet or Fast Ethernet. All RJ-45 ports feature Auto MDI/MDI-X autonegotiation and autocrossover. Auto MDI/MDI-X enables the use of straight-through or crossover CAT5 or CAT5e cables, even when straight-through would normally be required.

Fiber Only modules feature two, four, six, or eight 100BASE-FX or 10BASE-FL fiber ports—and some even handle both fiber standards! Fiber Only modules are available for multimode or single-mode and feature a variety of connectors. Most modules support communications up to 2 kilometers (1.2 mi.), but the LEV2548C has a maximum distance of 15 kilometers (9.3 mi.)!

Mixed Media modules combine four or six RJ-45 ports with two or four fiber ports. The fiber ports on most modules have a 2-kilometer (1.2-mi.) range, and some modules even support fiber optic communications up to 15, 20, or 40 kilo-meters (9.3, 12.4, or 24.8 mi.)!

You can also populate the switch's A or B slot with Gigabit Modules. Start with a Slot Module that provides a slot for your GBIC Transceiver Module to uplink to Gigabit Ethernet. If you're only uplinking to Gigabit Ethernet, choose the LEV2533C or LEV2562C Slot Modules, which each house one or two User-Selectable GBIC Transceiver Modules.

The LEV2560C Slot Module also includes four RJ-45 ports for Ethernet or Fast Ethernet connections and the LEV2561C Slot Module also comes with a pair of 100BASE-FX ports for multimode fiber communications.

User-Selectable GBIC Transceiver Modules come in one-port models only and are available for a twisted-pair, 1000BASE-LX/LH, or 1000BASE-ZX connection. All fiber communications are single-mode with ranges of 10, 25, 40, and even 70 kilo-meters (6.2, 15.5, 24.8, or 43.4 mi.)!

Although the [Vertical-Mount Managed Fiber Switch](#) has a near-infinite amount of configuration options, the total number of ports added to the A and B slots cannot exceed 16.

Give this switch a hard hat!

The Vertical-Mount Managed Fiber Switch operates at environmental extremes, has an optional redundant DC power supply, and provides security—plus it features a sleek, heavy-duty metal enclosure.

You can order three DC-powered versions with the optional dual-input DC power supply (LE2458C). It provides continuity of operation when either one of the DC input sources is interrupted. The LE2458C is available for 24, -48, or 125 VDC.

What's more, you can mount the switch vertically using the vertical mounting brackets that come with the unit or by using a pair of DIN Rail Mounting Brackets (LEV2556DR).

It performs and helps you take charge.

The [Vertical-Mount Managed Fiber Switch](#) is loaded with software that enables management via SNMP, tag- and port-based VLANs, and IGMP Snooping and Port Security.

For LANs using ring topologies, Spanning Tree protocol, Link-Loss-Learn™, and S-Ring™ are also available.

Alarm relay contacts on the switch monitor power and user-defined software events through traps.

High-performance features include nonblocking speed on all ports and 802.1p Quality of Service (QoS) traffic prioritization.

The Managed Fiber Switch is ready for use as a backbone switch where a mix of bursty data traffic and priority streaming traffic for Voice over IP (VoIP) and audio/video applications is present.

Technically Speaking

Fiber Connectors

- The ST® connector, which uses a bayonet locking system, is the most common connector.
- The SC connector features a molded body and a push-pull locking system.
- The FDDI connector comes with a 2.5-mm free-floating ferrule and a fixed shroud to minimize light loss.
- The MT-RJ connector, a small-form RJ-style connector, features a molded body and uses cleave-and-leave splicing.
- The LC connector, a small-form factor connector, features a ceramic ferrule and looks like a mini SC connector.
- The VF-45™ connector is another small-form factor connector. It uses a unique “V-groove” design.
- The FC connector is a threaded body connector. Secure it by screwing the connector body to the mating threads. Used in high-vibration environments.
- The MTO/MTP connector is a fiber connector that uses high-fiber-count ribbon cable. It’s used in high-density fiber applications.
- The MU connector resembles the larger SC connector. It uses a simple push-pull latching connection and is well suited for high-density applications.

Multimode vs. Single-Mode Fiber

Multimode fiber cable has a large-diameter core and therefore has multiple modes of propagation. In other words, several wavelengths of light are used in the fiber core. It’s primarily used for voice and data applications. Phone companies use it because a single multimode fiber accommodates hundreds of simultaneous conversations.

In contrast, single-mode fiber cable has a small core and only one mode of propagation. With only a single wavelength of light passing through its core, single-mode prevents wavelengths of light from overlapping and distorting data, which can happen with multimode fiber.

What does this get you? Distance—up to 50 times more distance with single-mode versus multimode. Consequently, single-mode is typically used in 10-/100-Mbps network connections spread out over extended areas, including cable television and campus backbone applications.

You also get higher bandwidth. You can use a pair of single-mode fiber strands full-duplex for up to twice the throughput of multi-mode fiber cable.

The actual distance you achieve with single-mode fiber will vary according to the manufacturer of the LAN devices used with the cable. This is because although there’s an established standard for multimode fiber cable, there is, as of yet, none established for single-mode fiber optic cable.

The Ethernet Code

10BASE2. 10BASE5. 100BASE-TX. 1000BASE-T. What do these terms mean? Here’s how to break down the code:

- 10, 100, or 1000 at the beginning means a network operates at 10, 100, or 1000 Mbps.
- BASE means the type of signaling used is baseband.
- 2 or 5 at the end indicates the maximum cable length in meters.
- T at the end stands for twisted-pair cable.
- TX at the end specifies 100-Mbps speeds over CAT5 twisted-pair cable.
- F at the end stands for fiber optic cable.
- FX at the end specifies 100-Mbps speeds over fiber.



LEV2528C

Item	Code
First, choose the chassis that matches your power input...	
Vertical-Mount Managed Fiber Switch Chassis	
110-240 VAC	LEV2525A
24 VDC	LEV2525A-24VDC
-48 VDC	LEV2525A-48VDC
125 VDC	LEV2525A-125VDC
Next, populate your chassis' A slot and/or B slot with a Multiport Media Module...	
Copper-Only Multiport Media Module	
(8) 10/100BASE-T RJ-45	LEV2528C
Fiber-Only Multiport Media Modules	
(4) 100BASE-FX Multimode SC, 2 km	LEV2526C
(4) 100BASE-FX Multimode ST@, 2 km	LEV2527C
(4) 10BASE-FL Multimode ST, 2 km	LEV2545C
(2) 10BASE-FL Multimode ST + (2) 100BASE-FX Multimode ST, 2 km	LEV2546C
(2) 10BASE-FL Multimode ST + (4) 100BASE-FX Multimode MT-RJ, 2 km	LEV2547C
(8) 100BASE-FX Multimode MT-RJ, 2 km	LEV2536C
(8) 100BASE-FX Multimode SC, 2 km	LEV2537C
(8) 100BASE-FX Single-Mode LC, 15 km	LEV2548C
Mixed-Media Multiport Media Modules	
(4) 10/100BASE-T RJ-45 + (2) 10BASE-FL Multimode ST, 2 km	LEV2540C
(4) 10/100BASE-T RJ-45 + (2) 100BASE-FX Multimode ST, 2 km	LEV2529C
(4) 10/100BASE-T RJ-45 + (2) 100BASE-FX Multimode SC, 2 km	LEV2530C
(4) 10/100BASE-T RJ-45 + (2) 100BASE-FX Single-Mode SC, 20 km	LEV2531C
(4) 10/100BASE-T RJ-45 + (2) 100BASE-FX Single-Mode SC, 40 km	LEV2541C
(4) 10/100BASE-T RJ-45 + (4) 100BASE-FX Multimode MT-RJ, 2 km	LEV2542C
(4) 10/100BASE-T RJ-45 + (4) 100BASE-FX Multimode LC, 2 km	LEV2543C
(4) 10/100BASE-T RJ-45 + (4) 100BASE-FX Single-Mode LC, 15 km	LEV2544C
(6) 10/100BASE-T RJ-45 + (2) 100BASE-FX Multimode MT-RJ, 2 km	LEV2538C
(6) 10/100BASE-T RJ-45 + (2) 100BASE-FX Single-Mode LC, 15 km	LEV2539C

Item	Code
You may also want to populate your chassis' A slot and/or B slot with a Gigabit Module. First, order a Slot Module...	
Gigabit Slot Modules	
for (1) User-Selectable GBIC Transceiver Module, Gigabit Only	LEV2533C
for (2) User-Selectable GBIC Transceiver Modules, Gigabit Only	LEV2562C
for (1) User-Selectable GBIC Transceiver Module Gigabit + (4) 10/100BASE-T RJ-45	LEV2560C
Gigabit + (2) 100BASE-FX Multimode SC, 2 km	LEV2561C
...then add a User-Selectable GBIC Transceiver Module.	
User-Selectable GBIC Transceiver Modules	
(1) 1000BASE-TX, RJ-45	LE2451C
(1) 1000BASE-SX Multimode SC, 1310 nm, 2 km	LE2434C
(1) 1000BASE-LX/LH Single-Mode SC, 1310 nm, 10 km	LE2449C
(1) 1000BASE-LX/LH Single-Mode SC, 1310 nm, 25 km	LE2450C
(1) 1000BASE-ZX Single-Mode SC, 1550 nm, 40 km	LE2452C
(1) 1000BASE-ZX Single-Mode SC, 1550 nm, 70 km	LE2453C
To connect your PC to your Managed Fiber Switch, order...	
Console Attachment Cable	
with (2) DB9 Male	LE2454C
with (1) DB9 Male and (1) USB Type A Male	LE2455C
You may also need...	
(2) DIN Rail Mounting Brackets	LEV2556DR
DC Power Supply with (2) Inputs	LE2458C
Blank Cover	LE2435C