

L2 Managed Gigabit Ethernet Switches with (2) Dual-Media SFP Ports • Web Smart Gigabit Switches



**Manage these Gigabit switches
via SNMP, Web browser, or CLI.**

FEATURES

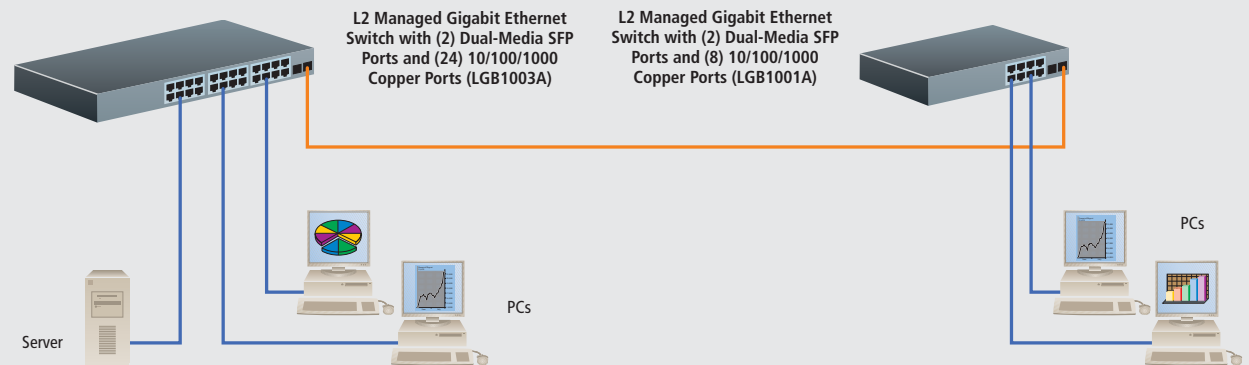
L2 Managed Gigabit Ethernet Switches:

- Support all IEEE 802.3/u/x/z Ethernet, Fast Ethernet, and Gigabit Ethernet specifications. Great for mixed-speed environments!
- Also use in workgroups, office LANs, and larger metropolitan networks that carry higher-priority traffic for powerful applications.
- Bundle multiple ports to create a single high-bandwidth port using 802.3ad Link Aggregate Control Protocol (LACP) aggregation.
- Programmable higher layer classification and prioritization for reliable Quality of Service (QoS).
- Ideal for use in VoIP real-time applications where info moves from Layer 2 to Layer 4.
- Robust security with VLAN capabilities, as well as port security and IGMP snooping.
- Easy to manage and configure. Support SNMP and Web-based management.
- Spanning Tree (802.1w) algorithms prevent network switching loops.
- RoHS compliant.

Web Smart Gigabit Switches:

- Features 8 or 48 autosensing 10-/100-/1000-Mbps ports plus two slots for SFPs.
- Use any standard Web browser to monitor and control the switches.

Migrate to copper and fiber Gigabit Ethernet with these managed switches.



OVERVIEW

L2 Managed Gigabit Ethernet Switches with (2) Dual-Media SFP Ports and Web Smart Gigabit Switches provide a path for migrating your network to Gigabit Ethernet. Manage both types of switches through a Web interface or via SNMP. You can also manage the L2 managed switches via a command-line interface (CLI).

L2 Managed Gigabit Ethernet Switches with (2) Dual-Media SFP Ports

Give important traffic priority and bandwidth when switching Gigabit copper—and fiber!

Include 8, 16, 24, or 48 10-/100-/1000-Mbps copper ports and two Small Form-Factor Pluggable (SFP) slots for adding the fiber SFP modules of your choice.

For flexible and manageable port switching and bandwidth aggregation, order a BLACK BOX® L2 Managed Gigabit Ethernet Switch with (2) Dual-Media SFP Ports.

Available with 8, 16, 24, or 48 10-/100-/1000-Mbps copper ports, these Layer 2 manageable switches offer particular advantages in mixed-speed and legacy-integration environments. You can connect twisted-pair Ethernet, Fast Ethernet, and Gigabit Ethernet segments to devices on other ports or to a fiber optic backbone plugged into the switches' dual SFP slots.

The 8-port version is an excellent choice for connecting branch office machines to a larger MAN or WAN. What's more, because the 8-port version has a noise-free, fanless design, it's tailor-made for cramped SOHOs where you don't want a noisy network switch as a distraction. The larger models are ideal for use in workgroups or WANs.

For the SFP slots, just order the fiber SFP modules that best suit your application. We offer the 850-nm Multimode Gigabit SFP Module (LGB200C-MLC) and 1310-nm Single-mode

Gigabit SFP Module (LGB200C-SLC10). (NOTE: For information on SFP module compatibility, including other modules from Black Box, contact our FREE Tech Support.)

You can also provide more bandwidth to a specific application or segment with the switches. That's because they feature 802.3ad Link Aggregate Control Protocol (LACP) bandwidth aggregation, which enables you to combine Gigabit ports to create a multilink trunk for load sharing. It's especially beneficial in switch-to-switch cascading applications where you require higher full-duplex speeds.

The size of the multilink load-sharing trunk depends on the switch you order. The 8-port model supports up to four Gigabit ports per a trunk for a bandwidth up to 8 Gbps. The 16-port model can be set up with up to eight Gigabit ports per a trunk for a bandwidth of up to 16 Gbps. For more LACP bandwidth, order the 24- or 48-port models, which each support up to 12 Gigabit ports per trunk.

LACP not only increases link capacity, it also creates higher availability. And because the switches aggregate all traffic based on MAC addresses, they balance traffic loads efficiently.

Along with Layer 2 802.1p Priority Queue control, the switches offer a much higher level of Quality of Service (QoS) support, so you can program a higher layer classification and ensure that traffic in real-time applications, such as Voice over IP (VoIP), receives higher priority.

Broadcast/multicast storm suppression enables you to restrict excess traffic on your network. You can also control the rate limit for each switch port and set threshold values for the size of discarded packets. Jumbo frame support helps to ensure reliable data transmission, too. With this, you can set the switches to forward packets up to 9K in size before discarding them.



Front: LGB1002A



Back: LGB1002A



LGB1003A

The L2 Managed Gigabit Ethernet Switch with (2) Dual-Media SFP Ports also contain a number of security capabilities, including a Q-in-Q VLAN feature that's used to isolate traffic between different users, and 802.1x user authentication, which prevents unauthorized access via a network.

In addition, with VLAN support for advanced 802.1Q (in the .1Q VLAN protocol), the switch enables you to limit broadcast traffic to within the same VLAN broadcast domain. And because the switches support Generic Attribute Registration Protocol (GARP) and Generic VLAN Registration Protocol (GVRP), they allow for a more efficient exchange VLAN configuration data with other users and devices.

You can also limit the number of MAC addresses assigned to each port, which, in turn, enables you to control the number of access stations for each port. This way, you not only establish an access mechanism by user and machine, you also control the number of access stations on your network.

Monitor, configure, and control ports with ease. The switches support SNMP, Web-based management, and CLI management interfaces. You can also physically stack up to 16 of the switches and, using Virtual Stacking Management (VSM), manage them all via one IP address. In this configuration, the switches are seen as part of a logically segmented VLAN—an expanded network that doesn't require the expense or configuration of additional hardware to implement.

The L2 Managed Gigabit Ethernet Switch with (2) Dual-Media SFP Ports also feature extensive error-tracking capabilities. Port mirroring, for instance, helps you track errors or abnormal packet transmission—all without interrupting data flow in your networked switched environment.

For mission-critical applications, use multiple switches and configure each with a redundant backup bridge path. Then, if a failure occurs on one switch, you'll still be able to guarantee the transmission and reception of packets via a secondary link on your network. For proper load balancing in VLAN applications,

L2 Managed Gigabit Ethernet Switch with (2) Dual-Media SFP Ports use an 802.1w Rapid Spanning Tree (RST) algorithm for creating a loop-free Layer 2 topology.

Web Smart Gigabit Switches

Web Smart Switches make migrating to Gigabit Ethernet easy and affordable.

Setup is easy. Just use any Web browser to log onto the built-in CLI interface to configure or monitor the switch.

All 10-/100-/1000-Mbps copper ports are autosensing for speed and auto-negotiating for duplex. The switches also feature Auto MDI/MDI-X, which means you never need a crossover cable. Plus, you can populate the SFP slot with a wide range of Gigabit and WDM uplink modules.

Tagged and port-based VLAN provides precise control over network traffic segmentation and broadcast domains with up to four trunk groups. You also get support for IEEE 802.x flow control for full-duplex mode and collision-based backpressure for half-duplex mode, plus Quality of Service (QoS) with a two-level priority queue.

SNMP trap management alerts you instantly when something goes wrong. Port mirroring helps to track network errors or abnormal packet transmission.



Front: LGB1048A



Back: LGB1048A



LGB2008A

TECH SPECS

L2 Managed Gigabit Ethernet Switches with (2) Dual-Media SFP Ports:

Access Control — 802.1x; Management Access Policy Control; SNMP v1, v2c network management

Bandwidth Control — Supports ingress and egress bandwidth rating management with a resolution of 1 Mbps

Frame Buffer — LGB1001A: 144 KB on-chip;
LGB1002A: 272 KB on-chip;
LGB1003A: 400 KB on-chip
LGB1048A: 768 KB on-chip

MAC Addresses — 8K

MIB Files — Interface MIB, Address Translation MIB, IP MIB, ICMP MIB, TCP MIB, UDP MIB, SNMP MIB, RFC 1213 MIB (MIB-II), RFC 1757 RMON MIB, Statistics Group 1, History Group 2, Alarm Group 3, Event Group 9, RFC 1493 Bridge MIB, RFC 1643 Ethernet MIB, Enterprise MIB

Protocols — LACP: LGB1001A: Port trunking with 4 trunking groups, up to 8 ports for each group;

LGB1002A: Port trunking with 8 trunking groups, up to 12 ports for each group;

LGB1003A, LGB1048A: Port trunking with 8 trunking groups, up to 12 ports for each group;

GVRP/GARP: All: 802.1q;

Multicasting: IGMP snooping including active and passive mode;

STP/RSTP: 802.1d/1w

QoS Supported — Layer 4 TCP/UDP port and ToS classification; 802.1p QoS with two-level priority queue; priority in a Q-in-Q tag

Switching Capacity — Non-blocking, wire-speed performance; jumbo frame support up to 9K; broadcast/multicast storm suppression; port mirroring

VLAN Capabilities — Port-based VLANs; IEEE 802.1q tag-based VLANs, up to 256 active VLANs; Q-in-Q for enabling subscriber aggregation

CE Approval — Yes

Connectors — Twisted-pair ports: (8), (16), (24), or 48 RJ-45;

SFP fiber slots: (2) SFP for plugging in optional SFP modules (for details on SFP compatibility, contact our FREE Tech Support)

Indicators — LEDs: System: (1) Power;

Each twisted-pair port: (1) LINK/ACT, (1) 10/100/1000 Mbps;

SFP fiber slots: (1) LINK/ACT

Power — Input: 100–240 VAC, 50–60 Hz, autosensing;

Consumption: 30 W

Size — LGB1001A: 1.7"H x 8.5"W x 5.2"D (4.3 x 22 x 13.2 cm);

LGB1002A–LGB1003A: 1.7"H x 17.4"W x 8.2"D (4.3 x 44.2 x 20.8 cm);

LGB1048A: 1.7"H x 17.4"W x 9.8"D (4.3 x 44.2 x 24.9 cm);

Weight — With unpopulated SFP fiber slots: LGB1001A: 2.2 lb. (1 kg);

LGB1002A–LGB1003A: 6.4 lb. (2.9 kg);

LGB1048A: 7.5 lb. (3.4 kg)

Web Smart Gigabit Switches:

Buffer — LGB2008A: 144 KB;

LGB2048A: 768 KB

MAC Addresses — 8K

Operating Environment —

Temperature: LGB2008A: 41 to 104° F (5 to 40° C),

LGB2048A: 32 to 104° F (0 to 40°C);

Humidity: 10 to 90% noncondensing

Standards — IEEE 802.3, 802.3u, 802.1ab, 802.3z, 802.3x, ANSI/IEEE 802.3 autonegotiation, IEEE 802.1q VLAN

System Configuration — Web

CE Approval — Yes

Connectors — LGB2008A: (8) RJ-45, (2) SFPs (Shared)

LGB2048A: (48) RJ-45, (2) SFPs (Shared);

Power — 100–240 VAC, 50–60 Hz, autosensing

Size — LGB2008A: 1.75"H (1U) x 5.2"W x 8.5"D (4.4 x 13.2 x 21.7 cm);

LGB2048A: 1.75"H (1U) x 17.4"W x 9.8"D (4.4 x 44.2 x 24.9 cm)

Item	Code
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To choose an L2 managed switch...

L2 Managed Gigabit Ethernet Switches with (2) Dual-Media SFP Ports

(8) 10/100/1000 Copper Ports

LGB1001A

(16) 10/100/1000 Copper Ports

LGB1002A

(24) 10/100/1000 Copper Ports

LGB1003A

(48) 10/100/1000 Copper Ports

LGB1048A

You might also want to order SFP modules for the L2 switch...

SFPs, 155-Mbps

850-nm Multimode, LC, 2 km

LFP104

1300-nm Multimode, LC, 2 km

LFP105

1310-nm Single-Mode, LC, 20 km

LFP106

with Extended Diagnostics

850-nm Multimode, LC, 2 km

LFP100

1300-nm Single-Mode, LC, 2 km

LFP101

1310-nm Single-Mode, LC, 20 km

LFP102

1310-nm Single-Mode, LC, 20 km

SFPs, 1250-Mbps

850-nm Multimode, LC, 500 m

LFP204

1310-nm Single-Mode, LC, 15 km

LFP205

1310-nm Single-Mode, LC, 40 km

LFP206

Fiber with Extended Diagnostics

850-nm Multimode, LC, 500 m

LFP200

1310-nm Single-Mode, LC, 15 km

LFP201

1310-nm Single-Mode, LC, 40 km

LFP202

Copper

10BASE-T/100BASE-TX/1000BASE-T

LFP300

1000BASE-T

LFP301

...or to choose a Web Smart Switch...

Web Smart Gigabit Switches

8-Port

LGB2008A

48-Port

LGB2048A