Gigabit Managed Ethernet Switch

OVERVIEW
The Gigabit Managed Ethernet Switches offer L2 features plus advanced L3 features such as Static Route for Enterprise networks via fiber or copper connections.

- LGB1110A has (8) RJ-45 (10/100/1000 Mbps) ports, (2) dual-media ports, each consisting of (1) RJ-45 (100/1000 Mbps) and (1) SFP; and (1) RJ-45 (serial console connection) port.
- LGB1126A-R2 has (24) RJ-45 (10/100/1000 Mbps) ports, (2) dual-media ports, each consisting of (1) RJ-45 (100/1000 Mbps) and (1) SFP; and (1) RJ-45 (serial console connection) port.
- LGB1152A has (48) RJ-45 (10/100/1000 Mbps) ports, (4) SFP (100/1000 Mbps) ports; and (1) RJ-45 (serial console connection) port.

FEATURES
- L2+ features make the switch easy to manage, provide robust security, and QoS.
- Offers a built-in device management system (DMS).
- Includes a DHCP server.
- Uses IPv4/IPv6 management.
- Complies with IEEE 802.3az EEE Energy Efficient Ethernet standard for green Ethernet.
# Gigabit Managed Ethernet Switch Data Sheet

## SPECIFICATIONS

<table>
<thead>
<tr>
<th>SWITCH PART NUMBER</th>
<th>LGB1110A</th>
<th>LGB1126A-R2</th>
<th>LGB1152A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CONNECTORS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Ports</td>
<td>10</td>
<td>26</td>
<td>52</td>
</tr>
<tr>
<td>RJ-45 (10M/100M/1G)</td>
<td>8</td>
<td>24</td>
<td>48</td>
</tr>
<tr>
<td>Uplinks (100M/1G)</td>
<td>(2) RJ-45/SFP combo</td>
<td>(2) RJ-45/SFP combo</td>
<td>(4) SFP</td>
</tr>
<tr>
<td>Console</td>
<td>(1) RJ-45</td>
<td>(1) RJ-45</td>
<td>(1) RJ-45</td>
</tr>
<tr>
<td><strong>HARDWARE PERFORMANCE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forwarding Capacity</td>
<td>14.88 Mpps</td>
<td>38.68 Mpps</td>
<td>77.38 Mpps</td>
</tr>
<tr>
<td>Switching Capacity</td>
<td>20 Gbps</td>
<td>52 Gbps</td>
<td>104 Gbps</td>
</tr>
<tr>
<td>Mac Table</td>
<td>8K</td>
<td>8K</td>
<td>32K</td>
</tr>
<tr>
<td>Jumbo Frames</td>
<td>9216 Bytes</td>
<td>9216 Bytes</td>
<td>14000 Bytes</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>32 to 104° F (0 to 40 °C)</td>
<td>32 to 104° F (0 to 40 °C)</td>
<td>32 to 104° F (0 to 40 °C)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-4 to +158 °F (-20 to +70 °C)</td>
<td>-4 to +158 °F (-20 to +70 °C)</td>
<td>-4 to +158 °F (-20 to +70 °C)</td>
</tr>
<tr>
<td>Altitude</td>
<td>&lt;1000 ft. (&lt;3000 m)</td>
<td>&lt;1000 ft. (&lt;3000 m)</td>
<td>&lt;1000 ft. (&lt;3000 m)</td>
</tr>
<tr>
<td>Operating Humidity</td>
<td>10 to 90%, noncondensing</td>
<td>10 to 90%, noncondensing</td>
<td>10 to 90%, noncondensing</td>
</tr>
<tr>
<td><strong>MECHANICAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>1.5&quot;H x 8.7&quot;W x 5.28&quot;D (3.81 x 22.1 x 13.4 cm)</td>
<td>1.73&quot;H x 17.4&quot;W x 8.3&quot;D (4.4 x 44.2 x 21.1 cm)</td>
<td>1.73&quot;H x 17.4&quot;W x 11.8&quot;D (4.4 x 44.2 x 30 cm)</td>
</tr>
<tr>
<td>Weight</td>
<td>3.1 lb. (1.4 kg)</td>
<td>5.5 lb. (2.5 kg)</td>
<td>9.0 lb. (4.1 kg)</td>
</tr>
<tr>
<td><strong>Power</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>100–240 VAC</td>
<td>100–240 VAC</td>
<td>100–240 VAC</td>
</tr>
<tr>
<td>Frequency</td>
<td>50–60 Hz</td>
<td>50–60 Hz</td>
<td>50–60 Hz</td>
</tr>
<tr>
<td><strong>APPROVALS</strong></td>
<td></td>
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</tbody>
</table>
SOFTWARE FEATURES

**LAYER 2 SWITCHING**

Spanning Tree Protocol (STP)
- Standard Spanning Tree 802.1d
- Rapid Spanning Tree (RSTP) 802.1w
- Multiple Spanning Tree (MSTP) 802.1s

Trunking
Link Aggregation Control Protocol (LACP) IEEE 802.3ad
- Up to 5 groups (LGB1110A), 13 groups (LGB116A-R2), or 26 groups (LGB1152A)
- Up to 2 ports (LGB1110A), 4 ports (LGB1126A-R2), or 8 ports (LGB1152A) per group

VLAN
Supports up to 4K VLANs simultaneously (out of 4096 VLAN IDs)
- Port-based VLANs
- 802.1Q tag-based VLAN
- MAC-based VLAN
- Management VLAN
- Private VLAN Edge (PVE)
- Q-in-Q (double tag) VLAN
- Voice VLAN
- GARP VLAN Registration Protocol (GVRP)

DHCP Relay
- Relay of DHCP traffic to DHCP server in different VLAN.
- Works with DHCP Option 82

IGMP v1/v2/v3 Snooping
IGMP limits bandwidth-intensive multicast traffic to only the requesters. Supports 1024 multicast groups

IGMP Querier
IGMP querier is used to support a Layer 2 multicast domain of snooping switches in the absence of a multicast router

IGMP Proxy
IGMP snooping with proxy reporting or report suppression actively filters IGMP packets in order to reduce load on the multicast router

MLD v1/v2 Snooping
Delivers IPv6 multicast packets only to the required receivers

**DEVICE MANAGEMENT SYSTEM (DMS)**

Graphical Monitoring
- Topology view: Support intuitive way to configure and manage switches and devices with visual relations
- Floor view: It's easy to drag and drop PoE devices and help you to build smart workforces
- Map view: Enhance efficiency to drag and drop devices and monitor surroundings on google map

Find my Switch
Search your real switches quickly and manage directly.

Traffic Monitoring
Display visual chart of network traffic of all devices and monitor every port at any time from switches

Troubleshooting
- Network diagnostic between master switch and devices
- Support protection mechanism, such as rate-limiting to protect your devices from brute-force downloading

**LAYER 3 SWITCHING**

IPv4 Static Routing
IPv4 Unicast: Static routing

IPv6 Static Routing
IPv6 Unicast: Static routing

**SECURITY**

Secure Shell (SSH)
SSH secures Telnet traffic in or out of the switch, SSH v1 and v2 are supported

Secure Sockets Layer (SSL)
SSL encrypts the http traffic, allowing advanced secure access to the browser-based management GUI in the switch

IEEE 802.1X
- IEEE 802.1X: RADIUS authentication, authorization and accounting, MD5 hash, guest VLAN, single/multiple host mode and single/multiple sessions
- Supports IGMP-RADIUS based 802.1X
- Dynamic VLAN assignment

Layer 2 Isolation Private VLAN Edge
PVE (also known as protected ports) provides L2 isolation between clients in the same VLAN. Supports multiple uplinks

Port Security
Locks MAC addresses to ports, and limits the number of learned MAC address

IP Source Guard
Prevents illegal IP address from accessing to specific port in the switch

RADIUS/TACACS+
Supports RADIUS and TACACS+ authentication. Switch as a client

Storm Control
Prevents traffic on a LAN from being disrupted by a broadcast, multicast, or unicast storm on a port

DHCP Snooping
A feature acts as a firewall between untrusted hosts and trusted DHCP servers

ACLs
Supports up to 256 entries. Drop or rate limitation based on
- Source and destination MAC, VLAN ID or IP address, protocol, port,
- Differentiated services code point (DSCP) / IP precedence
- TCP/UDP source and destination ports
- 802.1p priority
- Ethernet type
- Internet Control Message Protocol (ICMP) packets
- TCP flag
### SOFTWARE FEATURES (CONTINUED)

#### QUALITY OF SERVICE

<table>
<thead>
<tr>
<th>Hardware Queue</th>
<th>Supports 8 hardware queues</th>
</tr>
</thead>
</table>
| Scheduling     | • Strict priority and weighted round-robin (WRR)  
                 • Queue assignment based on DSCP and class of service |
| Classification  | • Port based  
                 • 802.1p VLAN priority based  
                 • IPv4/IPv6 precedence / DSCP based  
                 • Differentiated Services (DiffServ)  
                 • Classification and re-marking ACLs |
| Rate Limiting  | • Ingress policer  
                 • Egress shaping and rate control  
                 • Per port |

#### MANAGEMENT

<table>
<thead>
<tr>
<th>DHCP Server</th>
<th>Support DHCP server to assign IP to DHCP clients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero Touch Upgrade</td>
<td>Upgrade single switch automatically when you get notification</td>
</tr>
<tr>
<td>Remote Monitoring (RMON)</td>
<td>Embedded RMON agent supports RMON groups 1,2,3,9 (history, statistics, alarms, and events) for enhanced traffic management, monitoring and analysis</td>
</tr>
<tr>
<td>Port Mirroring</td>
<td>Traffic on a port can be mirrored to another port for analysis with a network analyzer or RMON probe. Up to N-1 (N is Switch's Ports) ports can be mirrored to single destination port. A single session is supported.</td>
</tr>
<tr>
<td>UPnP</td>
<td>The Universal Plug and Play Forum, an industry group of companies working to enable device-to-device interoperability by promoting Universal Plug and Play</td>
</tr>
</tbody>
</table>
| IEEE 802.1ab (LLDP) | • Used by network devices for advertising their identities, capabilities, and neighbors on an IEEE 802ab local area network  
                             • Support LLDP-MED extensions |
| Web GUI Interface | Built-in switch configuration utility for browser-based device configuration |
| CLI            | For users to configure/manage switches in command line modes |
| Dual Image     | Independent primary and secondary images for backup while upgrading |
| SNMP           | SNMP version1, 2c and 3 with support for traps, and SNMP version 3 user-based security model (USM) |
| Firmware Upgrade | • Web browser upgrade (HTTP/HTTPS) and TFTP  
                          • Upgrade through console port as well |
| NTP            | Network Time Protocol (NTP) is a networking protocol for clock synchronization between computer systems over packet-switched networks |
| Other Management | • HTTP/HTTPS/SSH  
                        • DHCP/Client/ DHCPv6 Client  
                        • Cable Diagnostics  
                        • Ping  
                        • Syslog  
                        • Telnet Client  
                        • IPv6 Management |
# Ordering Information

<table>
<thead>
<tr>
<th>Item</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gigabit Managed Ethernet Switch</td>
<td>LGB1110A</td>
</tr>
<tr>
<td>10-Ports</td>
<td>LGB1126A-R2</td>
</tr>
<tr>
<td>26-Ports</td>
<td>LGB1152A</td>
</tr>
<tr>
<td>52-Ports</td>
<td></td>
</tr>
</tbody>
</table>

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## About Black Box

Black Box is a world leading technology solutions provider specializing in complete high-performance KVM, professional A/V signal distribution and extension and switching solutions for mission-critical applications. Black Box is dedicated to delivering superior project engineering, technical support, and 24/7 customer service you can rely on for your most critical operations. Every day, our customers trust us to design, integrate, and maintain reliable control room solutions for broadcasting, post-production, stadiums & arenas, medical, air traffic control, oil & gas, government & military, and utility industries. Leave the tech to us and our comprehensive technology solutions will deliver secure connections, fast-response times, real-time collaboration and more.