

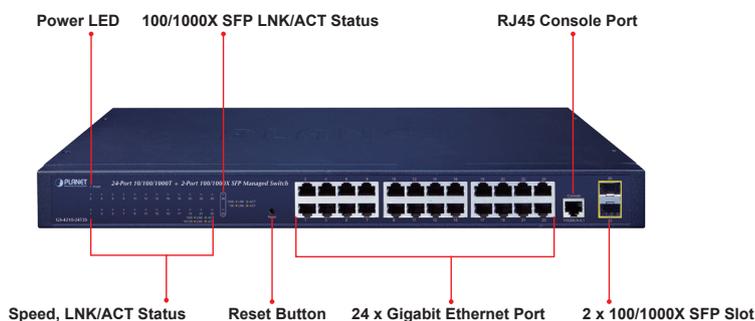
## 24-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch



### Cost-optimized Managed Switch with Advanced L2/L4 Switching and Security

PLANET GS-4210-24T2S is an ideal Gigabit Switch which provides cost-effective advantage to local area network and is widely accepted in the SMB office network. It offers **intelligent Layer 2 data packet switching and management functions**, **friendly web user interface** and **stable operation**. Besides the popular IPv6/IPv4 management and abundant L2/L4 switching functions, the GS-4210-24T2S comes with fanless feature and green technology to provide a quiet, energy-saving, high-speed and reliable office network environment.

The GS-4210-24T2S is equipped with **24 10/100/1000BASE-T** Gigabit Ethernet ports and 2 additional **100/1000BASE-X** SFP interfaces with inner power system. It offers a rack-mountable, affordable, safe and reliable Gigabit network switch solution for SMBs deploying networks, or requiring enhanced data security and network traffic management.



### Cybersecurity Network Solution to Minimize Security Risks

The GS-4210-24T2S supports SSHv2 and TLS protocols to provide strong protection against advanced threats. It includes a range of cybersecurity features such as **DHCP Snooping**, **IP Source Guard**, **dynamic ARP Inspection** Protection, **802.1x port-based** network access control, **RADIUS** and **TACACS+** user accounts management, **SNMPv3** authentication, and so on to complement it as an all-security solution.

### Physical Port

- **24-port 10/100/1000BASE-T** Gigabit RJ45 copper
- **2 100/1000BASE-X** mini-GBIC/SFP slots
- RJ45 console interface for switch basic management and setup
- Reset button for system factory default

### Switching

- Hardware-based 10/100Mbps, half/full duplex and 1000Mbps full duplex mode, flow control and auto-negotiation, and auto MDI/MDI-X
- Features Store-and-Forward mode with wire-speed filtering and forwarding rates
- IEEE 802.3x flow control for full duplex operation and back pressure for half duplex operation
- 9K jumbo frame
- Automatic address learning and address aging
- Supports CSMA/CD protocol

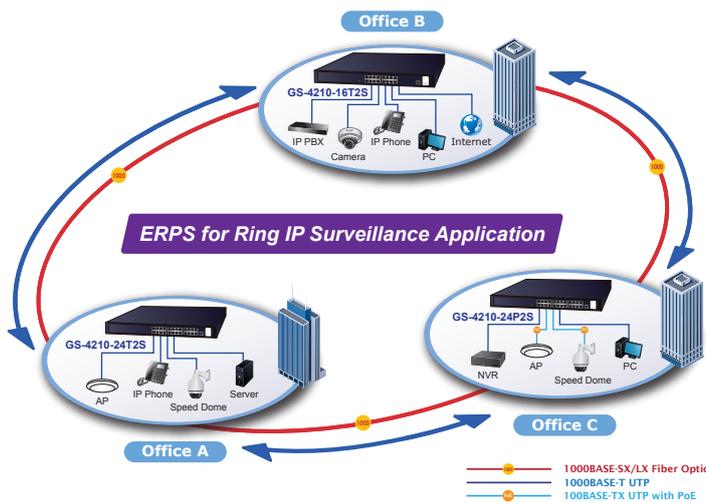
### Layer 2 Features

- Supports **VLAN**
  - IEEE 802.1Q tagged VLAN
  - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - Protocol VLAN
  - Voice VLAN
  - Private VLAN (Protected port)
  - Management VLAN
  - GVRP
- Supports **Spanning Tree Protocol**
  - STP (Spanning Tree Protocol)
  - RSTP (Rapid Spanning Tree Protocol)
  - MSTP (Multiple Spanning Tree Protocol)
  - STP BPDU Guard, BPDU Filtering and BPDU Forwarding
- Supports **Link Aggregation**
  - IEEE 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
  - Maximum 8 trunk groups, up to 8 ports per trunk group
- Provides port mirror (many-to-1)
- Loop protection to avoid broadcast loops
- Supports ERPS (Ethernet Ring Protection Switching)



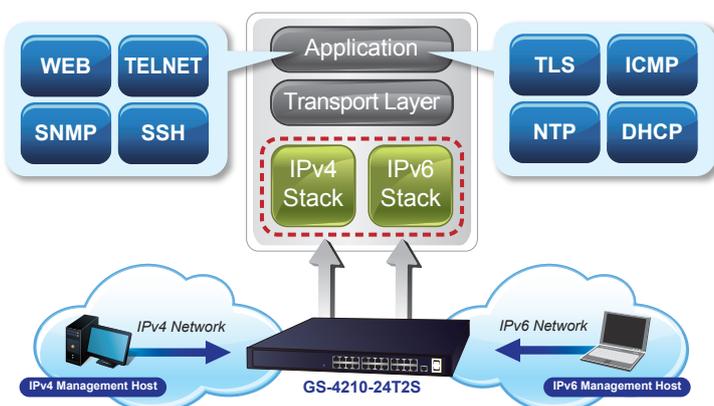
### Redundant Ring, Fast Recovery for Critical Network Applications

The GS-4210-24T2S supports redundant ring technology and features strong, rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates advanced **ITU-T G.8032 ERPS (Ethernet Ring Protection Switching)** technology, Spanning Tree Protocol (802.1s MSTP) into customer's network to enhance system reliability and uptime in various environments.



### IPv6/IPv4 Dual Stack Management

Supporting both IPv6 and IPv4 protocols, the GS-4210-24T2S helps the SMBs to step in the IPv6 era with the lowest investment as its network facilities need not be replaced or overhauled if the IPv6 FTTx edge network is set up.



### Quality of Service

- Ingress/Egress Rate Limit per port bandwidth control
- Storm Control support
  - Broadcast/unknown unicast/unknown multicast
- Traffic classification
  - IEEE 802.1p CoS
  - TOS/DSCP/IP precedence of IPv4/IPv6 packets
- Strict priority and Weighted Round Robin (WRR) CoS policies

### Multicast

- Supports IPv4 IGMP snooping v2 and v3
- Supports IPv6 MLD snooping v1, v2
- IGMP querier mode support
- IGMP snooping port filtering
- MLD snooping port filtering

### Security

- Authentication
  - IEEE 802.1X port-based network access authentication
  - Built-in RADIUS client to cooperate with the RADIUS servers
  - DHCP Option 82
  - RADIUS/TACACS+ login user access authentication
- Access Control List
  - IPv4/IPv6 IP-based ACL
  - IPv4/IPv6 IP-based ACE
  - MAC-based ACL
  - MAC-based ACE
- MAC Security
  - Static MAC
  - MAC filtering
- Port security for source MAC address entries filtering
- DHCP snooping to filter distrusted DHCP messages
- Dynamic ARP Inspection discards ARP packets with invalid MAC address to IP address binding
- IP source guard prevents IP spoofing attacks
- DoS attack prevention

### Management

- IPv4 and IPv6 dual stack management
- Switch management interface
  - Web switch management
  - Console/Telnet Command Line Interface
  - SNMP v1 and v2c switch management
  - SSHv2, TLSv1.2 and SNMP v3 secure access
- User privilege levels control

### Robust Layer 2 Features

The GS-4210-24T2S can be programmed for advanced switch management functions such as dynamic port link aggregation, 802.1Q VLAN and **Q-in-Q VLAN**, **Multiple Spanning Tree Protocol (MSTP)**, loop and **BPDU guard**, **IGMP snooping**, and MLD snooping. Via the link aggregation, the GS-4210-24T2S allows the operation of a high-speed trunk to combine with multiple ports such as a 16Gbps fat pipe, and supports fail-over as well. Also, the **Link Layer Discovery Protocol (LLDP)** is the Layer 2 protocol included to help discover basic information about neighboring devices on the local broadcast domain.

### Efficient Traffic Control

The GS-4210-24T2S is loaded with robust QoS features and powerful traffic management to enhance services to business-class data, voice, and video solutions. The functionality includes broadcast/multicast/unicast **storm control**, per port **bandwidth control**, 802.1p/CoS/IP DSCP QoS priority and remarking. It guarantees the best performance at VoIP and video stream transmission, and empowers the enterprises to take full advantage of the limited network resources.

- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- System maintenance
  - Firmware upload/download via HTTP/TFTP
  - Configuration upload/download through web interface
  - Dual images
  - Hardware reset button for system reboot or reset to factory default
- SNTP Network Time Protocol
- Cable diagnostics
- Link Layer Discovery Protocol (LLDP) and LLDP-MED
- SNMP trap for interface link up and link down notification
- Event message logging to remote Syslog server
- Four RMON groups (history, statistics, alarms and events)
- PLANET Smart Discovery Utility for deployment management
- PLANET NMS system and NMSViewerPro/CloudViewerPro for deployment management

### Powerful Security

PLANET GS-4210-24T2S offers comprehensive **IPv4/IPv6** Layer 2 to Layer 4 **Access Control List (ACL)** for enforcing security to the edge. It can be used to restrict network access by denying packets based on source and destination IP address, TCP/UDP ports or defined typical network applications. Its protection mechanism also comprises **802.1X port-based** authentication, which can be deployed with RADIUS to ensure the port level security and block illegal users. With the **protected port** function, communication between edge ports can be prevented to guarantee user privacy. Furthermore, **port security** function allows limiting the number of network devices on a given port. The network administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

### Friendly and Secure Management

For efficient management, the GS-4210-24T2S is equipped with Command line, Web and SNMP management interfaces.

- With the built-in **Web-based** management interface, the GS-4210-24T2S offers an easy-to-use, platform-independent management and configuration facility.
- For **text-based** management, it can be accessed via Telnet and the console port.
- By supporting the standard SNMP protocol, the switch can be managed via any SNMP-based management software.

Moreover, the GS-4210-24T2S offers secure remote management by supporting **SSHv2**, **TLSv1.2** and **SNMP v3** connections which encrypt the packet content at each session.

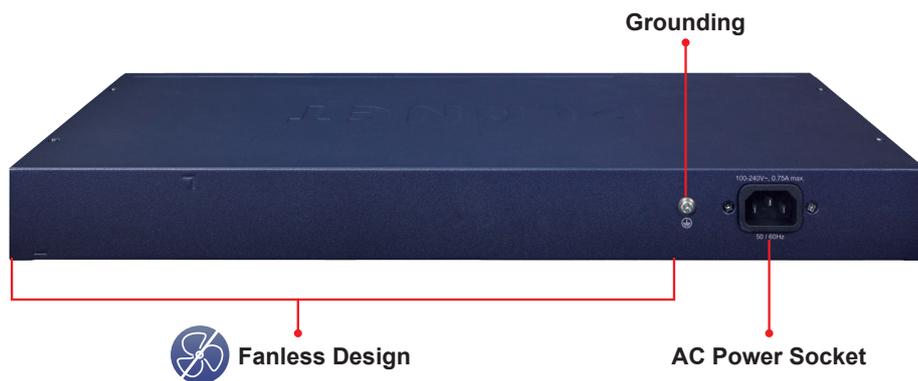


### Flexible Extension Solution

The two mini-GBIC slots built in the GS-4210-24T2S are compatible with the **100BASE-FX/1000BASE-SX/LX** SFP (Small Form-factor Pluggable) fiber transceiver to uplink to backbone switch and monitor center in long distance. The distance can be extended from 550 meters to 2 kilometers (multi-mode fiber) and to 10/20/40/60/80/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

### Fanless Design

Adopting the latest chip process and green technology, the GS-4210-24T2S successfully reduces substantial power consumption with the fanless and noiseless design collocating with the effective cooler. Therefore, the GS-4210-24T2S is able to operate stably and quietly in any environment without affecting its performance.



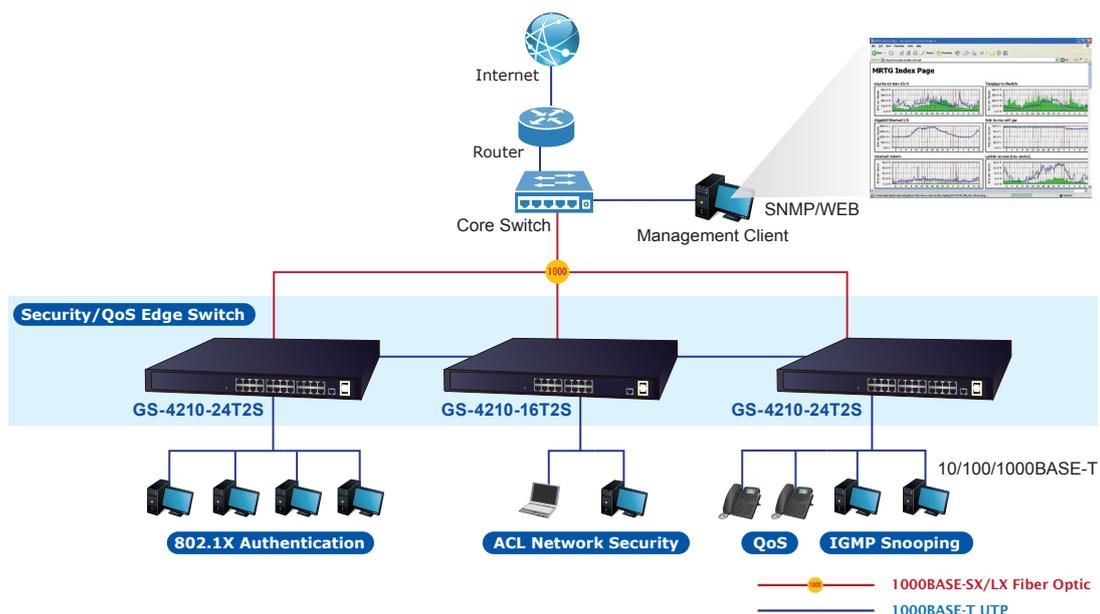
## Applications

### Department/Edge Security and QoS Switch

The GS-4210-24T2S connects up to 24 high-speed workstations in the Ethernet environment, in which its two SFP mini-GBIC interfaces provide an uplink to a department backbone. Moreover, the Switch provides 52Gbps switch fabric and high bandwidth for backbone connection. The GS-4210-24T2S improves the network efficiency and safeguards the network clients with its powerful features:

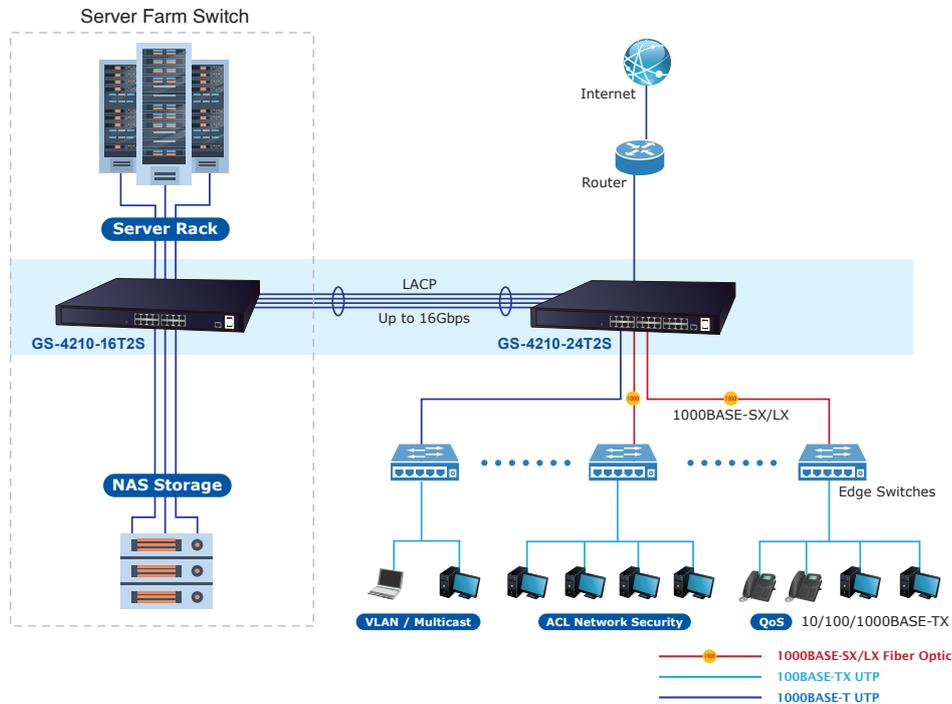
- IPv6/IPv4 management
- Layer 2 to Layer 4 security
- QoS
- 802.1x port-based and MAC-based network access authentication security
- Multicast IGMP snooping

The advanced functionality of the GS-4210-24T2S eliminates traditional issues associated with the use of Ethernet. Users can be separated with advanced VLAN functionality to enhance security. It makes the GS-4210-24T2S one of the best and most cost-effective switch solutions for SMBs.



**High-performance Backbone/Server Farm Switch**

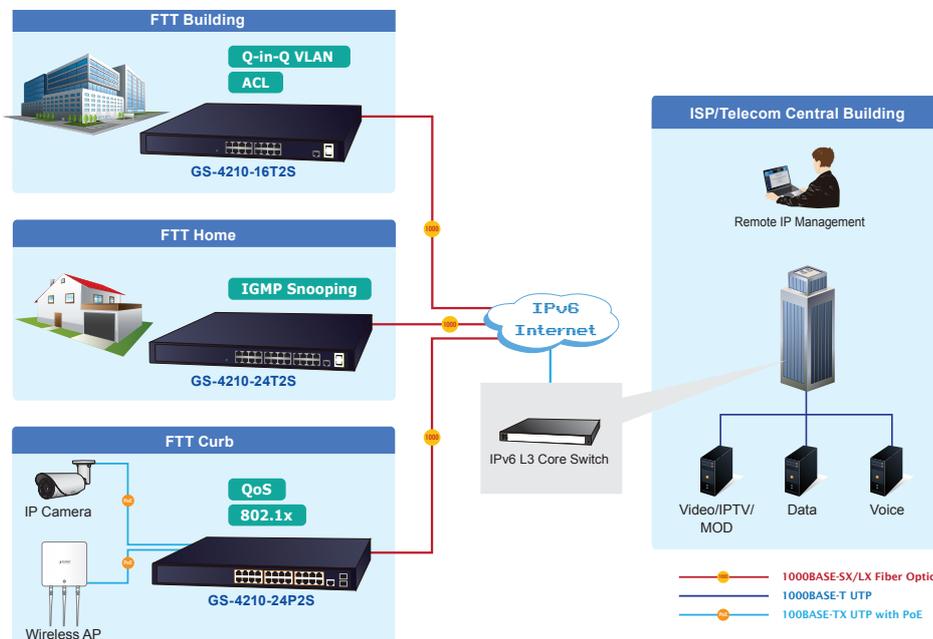
Gigabit Ethernet supported equipment has become the fundamental unit of enterprises and network servers. With up to 52Gbps non-blocking switch fabric, the GS-4210-24T2S can easily provide a local high bandwidth Gigabit Ethernet network for backbone of enterprises or telecoms. With its port trunking function, a 16 GB fat pipe is provided to connect to the backbone if required. It is ideal to be used as a server farm switch connecting to servers. The GS-4210-24T2S can offer the uplink to the edge network through Gigabit Ethernet LX/SX SFP modules with the two SFP ports.



**FTTx/MAN Application**

The GS-4210-24T2S applies the **double tag VLAN (Q-in-Q)** technology to providing low cost and easy operation for service providers carrying traffic for multiple customers across their networks. It features SNMP v3 and RMON Groups. The SNMPv3 security structure consists of security models, with each model having its own security levels. With two dual-speed SFP slots built in, the deployment distance of the GS-4210-24T2S can be extended up to 120 kilometers (single-mode fiber), which provides a high-performance edge service for FTTx solutions.

To build a network solution of FTTH (Fiber to the Home) or FTTC (Fiber to the Curb) for ISPs, and FTTB (Fiber to the Building) for enterprises, the various distances of SFP and Bidi (WDM) transceivers are optional for customers' choices. For security and various applications, the 24 Gigabit ports of the GS-4210-24T2S can be configured with VLAN settings and connected to different units, offices, floors, houses and departments.



## Specifications

|                                |  |
|--------------------------------|--|
| Product                        | GS-4210-24T2S  |
| <b>Hardware Specifications</b> |  |
| Hardware Version               | 2  |
| Copper Ports                   | 24 x 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports   |
| SFP/mini-GBIC Slots            | 2 100/1000BASE-X SFP interfaces, supporting 100/1000Mbps dual mode   |
| Console                        | 1 x RS232-to-RJ45 serial port (115200, 8, N, 1)  |
| Reset Button                   | < 5 sec: System reboot<br>> 5 sec: Factory default   |
| Dimensions (W x D x H)         | 445 x 207 x 45 mm (1U height)  |
| Weight                         | 2.1kg  |
| ESD Protection                 | Yes  |
| Enclosure                      | Metal  |
| Power Requirements             | 100~240V AC, 50/60Hz, 0.8A (max.)  |
| Power Consumption/Dissipation  | Max. 14 watts/47 BTU   |
| LED                            | <b>System:</b><br>Power (Green)<br><b>10/100/1000T RJ45 Interfaces</b> (Port 1 to Port 24):<br>1000 LNK/ACT (Green), 10/100 LNK/ACT (Orange)<br><b>100/1000Mbps SFP Interfaces</b> (Port 25 to Port 26):<br>1000 LNK/ACT (Green), 100 LNK/ACT (Orange) |
| <b>Switching</b>               |  |
| Switch Architecture            | Store-and-Forward  |
| Switch Fabric                  | 52Gbps/non-blocking  |
| Switch Throughput@64 bytes     | 38.6Mpps @64 bytes   |
| MAC Address Table              | 8K entries   |
| Shared Data Buffer             | 4.1 megabits   |
| Flow Control                   | IEEE 802.3x pause frame for full duplex<br>Back pressure for half duplex   |
| Jumbo Frame                    | 9216 bytes   |
| <b>Layer 2 Functions</b>       |  |
| Port Mirroring                 | TX/RX/both<br>Many-to-1 monitor  |
| VLAN                           | 802.1Q tagged-based VLAN<br>Up to 256 VLAN groups, out of 4094 VLAN IDs<br>802.1ad Q-in-Q tunneling (VLAN stacking)<br>Voice VLAN<br>Protocol VLAN<br>Private VLAN (Protected port)<br>GVRP<br>Management VLAN   |
| Link Aggregation               | IEEE 802.3ad LACP and static trunk<br>Supports 8 groups of 8-port trunk  |
| Spanning Tree Protocol         | IEEE 802.1D Spanning Tree Protocol (STP)<br>IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)<br>IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)<br>STP BPDU Guard, BPDU Filtering and BPDU Forwarding  |
| IGMP Snooping                  | IPv4 IGMP (v2/v3) snooping<br>IGMP querier<br>Up to 256 multicast groups   |
| MLD Snooping                   | IPv6 MLD (v1/v2) snooping, up to 256 multicast groups  |
| Access Control List            | IPv4/IPv6 IP-based ACL/MAC-based ACL<br>IPv4/IPv6 IP-based ACE/MAC-based ACE   |
| QoS                            | 8 mapping IDs to 8 level priority queues<br>- Port number<br>- 802.1p priority<br>- DSCP/IP precedence of IPv4/IPv6 packets<br>Traffic classification based, strict priority and WRR<br>Ingress/Egress Rate Limit per port bandwidth control           |
| Ring                           | Supports ERPS, and complies with ITU-T G.8032  |
| <b>Security Functions</b>      |  |
| Access Control List            | IPv4/IPv6 IP-based ACL/MAC-based ACL   |

|                              |   |  |
|------------------------------|---|--|
| Port Security                | IEEE 802.1X – Port-based authentication<br>Built-in RADIUS client to co-operate with RADIUS server<br>RADIUS/TACACS+ user access authentication   |  |
| MAC Security                 | IP-MAC port binding<br>MAC filter<br>Static MAC address   |  |
| Enhanced Security            | DHCP Snooping and DHCP Option82<br>STP BPDU guard, BPDU filtering and BPDU forwarding<br>DoS attack prevention<br>ARP inspection<br>IP source guard   |  |
| <b>Management Functions</b>  |   |  |
| Basic Management Interfaces  | RS232 to RJ45 Console<br>Web browser<br>Telnet<br>SNMP v1, v2c  |  |
| Secure Management Interfaces | SSHv2, TLS v1.2, SNMP v3  |  |
| System Management            | Firmware upgrade by HTTP/TFTP protocol through Ethernet network<br>LLDP protocol<br>SNTP<br>PLANET Smart Discovery Utility<br>PLANET NMS system<br>PLANET NMSViewerPro/CloudViewerPro   |  |
| Event Management             | Remote/Local Syslog<br>System log   |  |
| SNMP MIBs                    | RFC 1213 MIB-II<br>RFC 1215 Generic Traps<br>RFC 1493 Bridge MIB<br>RFC 2674 Bridge MIB Extensions<br>RFC 2737 Entity MIB (Version 2)<br>RFC 2819 RMON (1, 2, 3, 9)<br>RFC 2863 Interface Group MIB<br>RFC 3635 Ethernet-like MIB   |  |
| <b>Standards Conformance</b> |   |  |
| Regulatory Compliance        | FCC Part 15 Class A, CE   |  |
| Standards Compliance         | IEEE 802.3 10BASE-T<br>IEEE 802.3u 100BASE-TX/100BASE-FX<br>IEEE 802.3z Gigabit SX/LX<br>IEEE 802.3ab Gigabit 1000BASE-T<br>IEEE 802.3x flow control and back pressure<br>IEEE 802.3ad port trunk with LACP<br>IEEE 802.1D Spanning Tree Protocol<br>IEEE 802.1w Rapid Spanning Tree protocol<br>IEEE 802.1s Multiple Spanning Tree protocol<br>IEEE 802.1p Class of Service<br>IEEE 802.1Q VLAN Tagging<br>IEEE 802.1x Port Authentication Network Control | IEEE 802.1ab LLDP<br>RFC 768 UDP<br>RFC 793 TFTP<br>RFC 791 IP<br>RFC 792 ICMP<br>RFC 2068 HTTP<br>RFC 1112 IGMP version 1<br>RFC 2236 IGMP version 2<br>RFC 3376 IGMP version 3<br>RFC 2710 MLD version 1<br>RFC 3810 MLD version 2<br>ITU G.8032 ERPS Ring |
| <b>Environment</b>           |   |  |
| Operating                    | Temperature: 0 ~ 50 degrees C<br>Relative Humidity: 5 ~ 95% (non-condensing)  |  |
| Storage                      | Temperature: -10 ~ 70 degrees C<br>Relative Humidity: 5 ~ 95% (non-condensing)  |  |

## Ordering Information

|               |  |
|---------------|--|
| GS-4210-24T2S | 24-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch |
|---------------|--|

## Related Products

GS-4210-16T2S 16-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch

## Available 1000Mbps Modules

Gigabit Ethernet Transceiver (1000BASE-X SFP)

| Model        | DDM | Speed (Mbps) | Connector Interface | Fiber Mode  | Distance | Wavelength (nm) | Operating Temp.  |
|--------------|-----|--------------|---------------------|-------------|----------|-----------------|------------------|
| MGB-GT       | --  | 1000         | Copper              | --          | 100m     | --              | 0 ~ 60 degrees C |
| MGB-SX(V2)   | YES | 1000         | LC                  | Multi Mode  | 550m     | 850nm           | 0 ~ 60 degrees C |
| MGB-SX2(V2)  | YES | 1000         | LC                  | Multi Mode  | 2km      | 1310nm          | 0 ~ 60 degrees C |
| MGB-LX(V2)   | YES | 1000         | LC                  | Single Mode | 20km     | 1310nm          | 0 ~ 60 degrees C |
| MGB-L40      | YES | 1000         | LC                  | Single Mode | 40km     | 1310nm          | 0 ~ 60 degrees C |
| MGB-L80      | YES | 1000         | LC                  | Single Mode | 80km     | 1550nm          | 0 ~ 60 degrees C |
| MGB-L120(V2) | YES | 1000         | LC                  | Single Mode | 120km    | 1550nm          | 0 ~ 60 degrees C |

Gigabit Ethernet Transceiver (1000BASE-BX, Single Fiber Bi-directional SFP)

| Model        | DDM | Speed (Mbps) | Connector Interface | Fiber Mode  | Distance | Wavelength (TX) | Wavelength (RX) | Operating Temp.  |
|--------------|-----|--------------|---------------------|-------------|----------|-----------------|-----------------|------------------|
| MGB-LA10(V2) | YES | 1000         | WDM(LC)             | Single Mode | 10km     | 1310nm          | 1550nm          | 0 ~ 60 degrees C |
| MGB-LB10(V2) |     | 1000         | WDM(LC)             | Single Mode | 10km     | 1550nm          | 1310nm          | 0 ~ 60 degrees C |
| MGB-LA20(V2) | YES | 1000         | WDM(LC)             | Single Mode | 20km     | 1310nm          | 1550nm          | 0 ~ 60 degrees C |
| MGB-LB20(V2) |     | 1000         | WDM(LC)             | Single Mode | 20km     | 1550nm          | 1310nm          | 0 ~ 60 degrees C |
| MGB-LA40(V2) | YES | 1000         | WDM(LC)             | Single Mode | 40km     | 1310nm          | 1550nm          | 0 ~ 60 degrees C |
| MGB-LB40(V2) |     | 1000         | WDM(LC)             | Single Mode | 40km     | 1550nm          | 1310nm          | 0 ~ 60 degrees C |
| MGB-LA80     | YES | 1000         | WDM(LC)             | Single Mode | 80km     | 1490nm          | 1550nm          | 0 ~ 60 degrees C |
| MGB-LB80     |     | 1000         | WDM(LC)             | Single Mode | 80km     | 1550nm          | 1490nm          | 0 ~ 60 degrees C |

## Available 100Mbps Modules

Fast Ethernet Transceiver (100BASE-X SFP)

| Model    | Speed (Mbps) | Connector Interface | Fiber Mode  | Distance | Wavelength (nm) | Operating Temp.  |
|----------|--------------|---------------------|-------------|----------|-----------------|------------------|
| MFB-FX   | 100          | LC                  | Multi Mode  | 2km      | 1310nm          | 0 ~ 60 degrees C |
| MFB-F20  | 100          | LC                  | Single Mode | 20km     | 1310nm          | 0 ~ 60 degrees C |
| MFB-F40  | 100          | LC                  | Single Mode | 40km     | 1310nm          | 0 ~ 60 degrees C |
| MFB-F60  | 100          | LC                  | Single Mode | 60km     | 1310nm          | 0 ~ 60 degrees C |
| MFB-F120 | 100          | LC                  | Single Mode | 120km    | 1310nm          | 0 ~ 60 degrees C |

Fast Ethernet Transceiver (100BASE-BX, Single Fiber Bi-directional SFP)

| Model    | Speed (Mbps) | Connector Interface | Fiber Mode  | Distance | Wavelength (TX) | Wavelength (RX) | Operating Temp.  |
|----------|--------------|---------------------|-------------|----------|-----------------|-----------------|------------------|
| MFB-FA20 | 100          | WDM(LC)             | Single Mode | 20km     | 1310nm          | 1550nm          | 0 ~ 60 degrees C |
| MFB-FB20 | 100          | WDM(LC)             | Single Mode | 20km     | 1550nm          | 1310nm          | 0 ~ 60 degrees C |