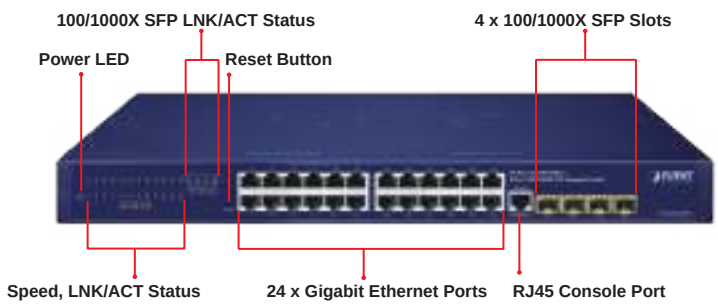
24-Port 10/100/1000T + 4-Port 100/1000X SFP Managed Gigabit Switch

Perfect Managed Switches with Advanced L2/L4 Switching and Security

PLANET GS-4210-24T4S and GS-4210-24T4SR are the ideal Gigabit Switches which provide cost-effective advantage to local area networks and are widely accepted in the SMB office network. They offer **intelligent L2/L4 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-4210-24T4S and GS-4210-24T4SR come with fanless feature and green technology to provide a quiet, energy-saving, high-speed and reliable office network environment.

The GS-4210-24T4S and GS-4210-24T4SR are equipped with **24 10/100/1000BASE-T** Gigabit Ethernet ports and **4 additional 100/1000BASE-X** SFP interfaces with built-in AC or AC+DC redundant power system. They offer a rack-mountable, affordable, safe and reliable Gigabit network switch solution for SMBs deploying networks, or requiring enhanced data security and network traffic management.

GS-4210-24T4S



Physical Port

- **24-Port 10/100/1000BASE-T** Gigabit RJ45 copper
- **4 100/1000BASE-X mini-GBIC/SFP** slots
- RJ45 console interface for switch basic management and setup
- Reset button for system factory default

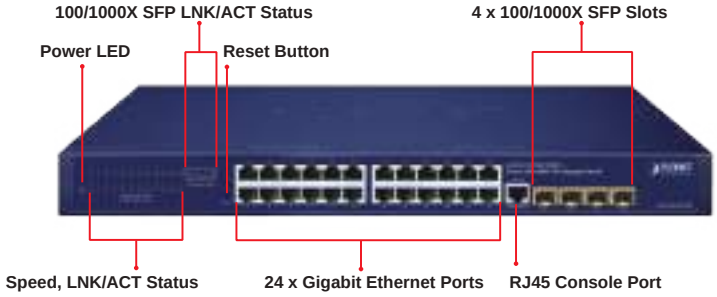
Switching

- 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
- 10K jumbo frame
- Automatic address learning and address aging
- Supports CSMA/CD protocol

Layer 2 Features

- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)
- High performance Store and Forward architecture, broadcast storm control, runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Supports **VLAN**
  - IEEE 802.1Q tagged VLAN
  - Provider Bridging (VLAN Q-in-Q) support (IEEE 802.1ad)
  - Protocol VLAN
  - Voice VLAN
  - Private VLAN
  - 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)

GS-4210-24T4SR



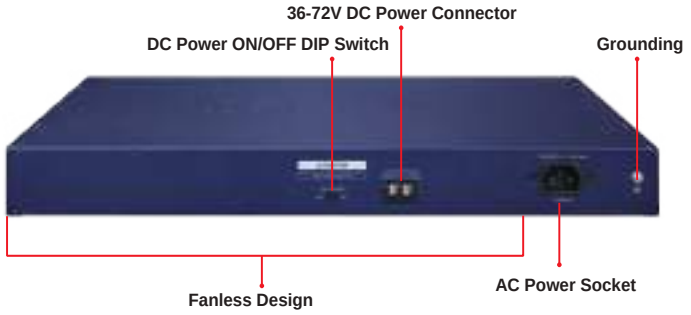
Cybersecurity Network Solution to Minimize Security Risks

The cybersecurity feature that virtually needs no effort and cost to have includes the protection of the switch management and the enhanced security of the mission-critical network. Both SSH and TLS protocols are utilized to provide strong protection against advanced threats.

Redundant AC/DC Power Supply to Ensure Continuous Operation

The GS-4210-24T4SR is particularly equipped with one 100~240V AC power supply unit and one 36~72V DC power supply unit to provide an enhanced reliable and scalable redundant power supply, the continuous power system is specifically designed to fulfill the demands of high-tech facilities requiring the highest power integrity. With the 36~72V DC power supply, the GS-4210-24T4SR is able to act as a telecom-level device that can be located in the electronic room.

GS-4210-24T4SR



IPv6/IPv4 Dual Stack Management

Supporting both IPv6 and IPv4 protocols, the GS-4210-24T4S and GS-4210-24T4SR help the SMBs to step in the IPv6 era with the lowest investment as their network facilities need not be replaced or overhauled if the IPv6 FTTx edge network is set up.

Robust Layer 2 Features

The GS-4210-24T4S and GS-4210-24T4SR 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-4210-24T4S and GS-4210-24T4SR allow the operation of a high-speed trunk

  - Maximum 8 trunk groups, up to 8 ports per trunk group
- Provides port mirror (many-to-1)
- Loop protection to avoid broadcast loops

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

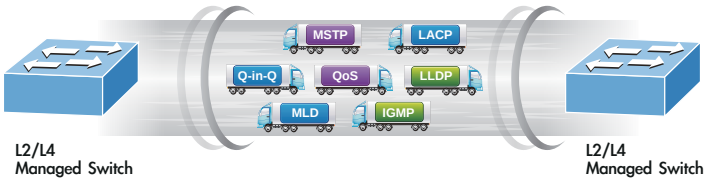
Multicast

- 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 co-operate 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
- SSH/SSL

to combine with multiple ports, 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-4210-24T4S and GS-4210-24T4SR are 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 storm control, per port bandwidth control, IP DSCP QoS priority and remarking. They guarantee the best performance for VoIP and video stream transmission, and empowers the enterprises to take full advantage of the limited network resources.

Powerful Security

PLANET GS-4210-24T4S and GS-4210-24T4SR offer comprehensive **IPv4/IPv6** Layer 2 to Layer 4 **Access Control List (ACL)** for enforcing security to the edge. They 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. Their protection mechanism also comprises **802.1X port-based** user and device authentication, which can be deployed with RADIUS and TACACS+ 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 to limit the number of network devices on a given port.

Advanced Network Security

The GS-4210-24T4S and GS-4210-24T4SR also provide **DHCP snooping**, **IP source guard** and **dynamic ARP inspection** functions to prevent IP snooping from attack and discard ARP packets with invalid MAC address. 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-4210-24T4S and GS-4210-24T4SR are equipped with **web**, **Telnet** and **SNMP** management interfaces.

- With the built-in **Web-based** management interface, the GS-4210-24T4S and GS-4210-24T4SR offer an easy-to-use, platform-independent management and configuration facility.
- For **text-based** management, the switches can be accessed via Telnet and the console port.
- By supporting the standard SNMP, the switches can be managed via any standard management software

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
- SNMP Management
  - Four RMON groups (history, statistics, alarms, and events)
  - SNMP trap for interface Link Up and Link Down notification
- User Privilege Levels Control
- 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
- Network Diagnostic
  - ICMPv6/ICMPv4 Remote Ping
  - Cable Diagnostics
- Link Layer Discovery Protocol (LLDP) Protocol and LLDP-MED
- Event message logging to remote Syslog server
- PLANET NMS System and Smart Discovery Utility for deployment management

Redundant Power System (GS-4210-24T4SR)

- Redundant 100~240V AC/36-72V DC dual power
- Active-active redundant power failure protection
- Backup of catastrophic power failure on one supply
- Fault tolerance and resilience

Moreover, the GS-4210-24T4S and GS-4210-24T4SR offers secure remote management by supporting **SSH**, **TLS** and **SNMP v3** connections which encrypt the packet content at each session.

Flexibility and Long-distance Extension Solution

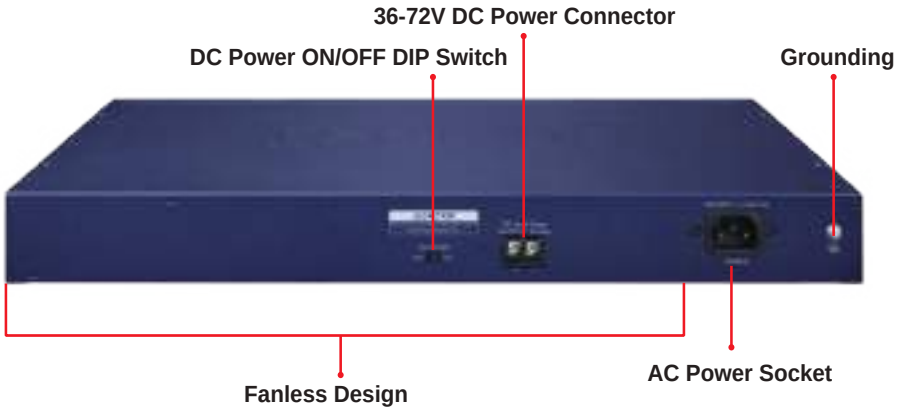
The GS-4210-24T4S and GS-4210-24T4SR provide 4 extra Gigabit SFP interfaces supporting **100BASE-FX/1000BASE-SX/LX SFP** (small form-factor pluggable) fiber transceiver to uplink to backbone switch and monitoring center in long distance. The distance can be extended from 550 meters to 2 kilometers (multi-mode fiber) and up to above 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-4210-24T4S and GS-4210-24T4SR successfully reduce substantial power consumption with the fanless and noiseless design collocating with the effective cooler. Therefore, the GS-4210-24T4S and GS-4210-24T4SR are able to operate stably and quietly in any environment without affecting their performance.

GS-4210-24T4S

GS-4210-24T4SR



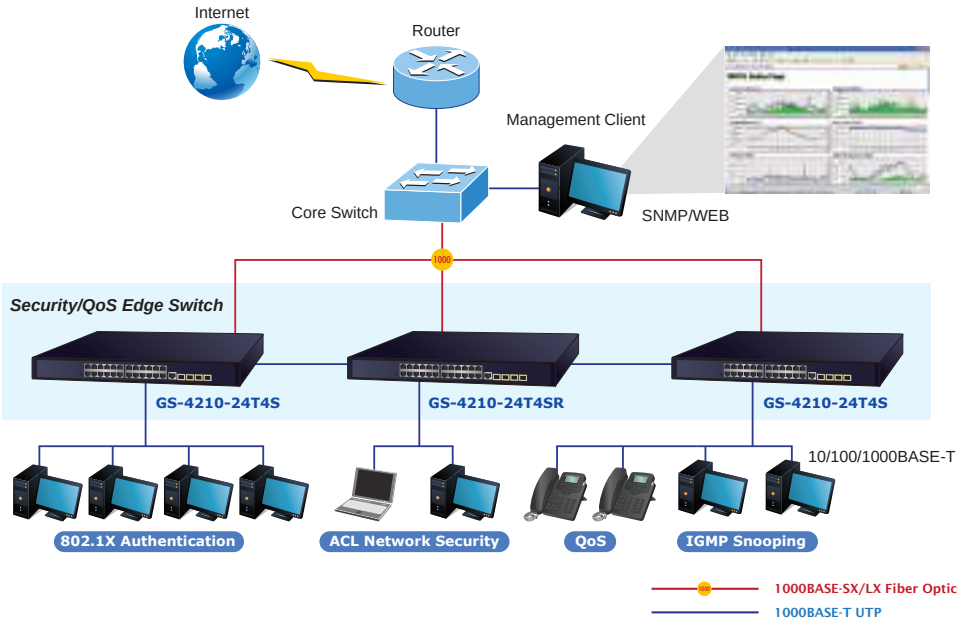
Applications

Department/Edge Security and QoS Switch

The GS-4210-24T4S and GS-4210-24T4SR connect up to 24 high-speed workstations in the Ethernet environment, in which their four SFP mini-GBIC interfaces provide an uplink to a department backbone. Moreover, the Switches provide 56Gbps switch fabric and high bandwidth for backbone connection. The GS-4210-24T4S and GS-4210-24T4SR improve the network efficiency and safeguard the network clients with their powerful features:

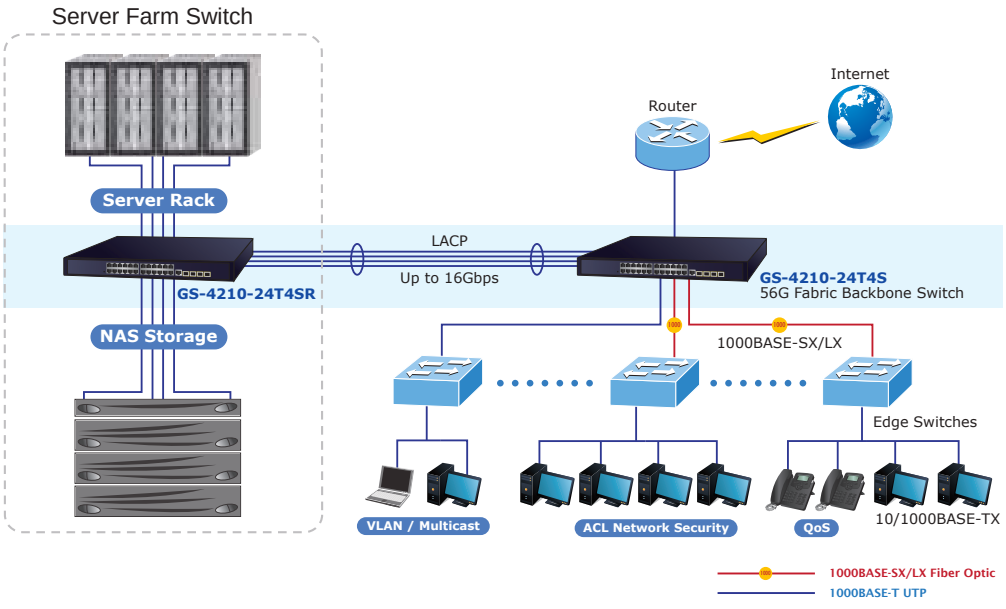
- IPv6/IPv4 management
- Layer 2 to Layer 4 security
- QoS
- 802.1x port-based and MAC-based network access authentication security
- Multicast IGMP snooping

The advanced functionality of the GS-4210-24T4S and GS-4210-24T4SR eliminates traditional issues associated with the use of Ethernet. Users can be separated with advanced VLAN functionality to enhance security. It makes the GS-4210-24T4S and GS-4210-24T4SR one of the best and most cost-effective switch solutions for SMBs.



High-performance Backbone/Server Farm Switch

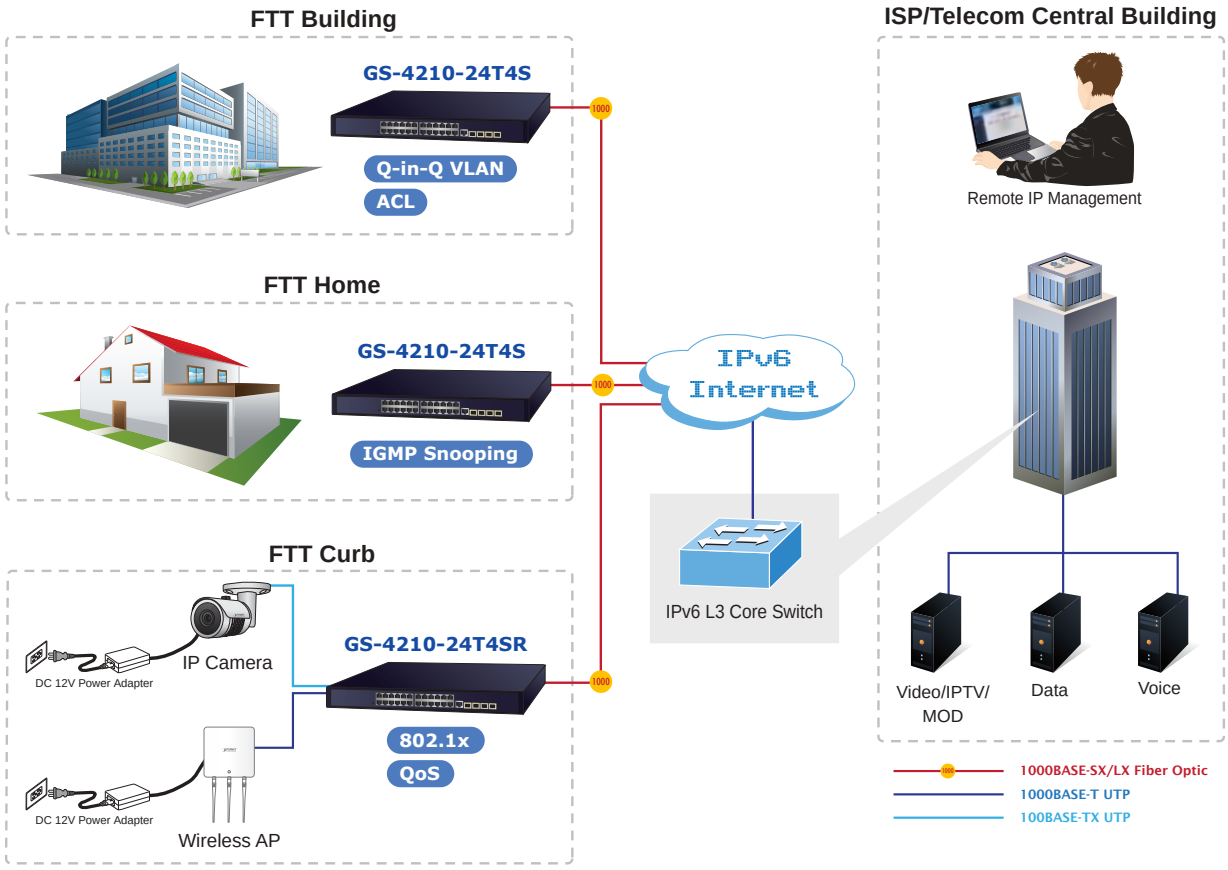
Gigabit Ethernet supported equipment has become the fundamental unit of enterprises and network servers. With up to 56Gbps non-blocking switch fabric, the GS-4210-24T4S and GS-4210-24T4SR can easily provide a local high bandwidth Gigabit Ethernet network for backbone of enterprises or telecoms. With 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-4210-24T4S and GS-4210-24T4SR 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-4210-24T4S and GS-4210-24T4SR apply 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-4210-24T4S and GS-4210-24T4SR 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-4210-24T4S and GS-4210-24T4SR can be configured with VLAN settings and connected to different units, offices, floors, houses and departments.



Specifications

Product	GS-4210-24T4S	GS-4210-24T4SR
Hardware Specifications		
Copper Ports	24 x 10/100/1000BASE-T RJ45 Auto-MDI/MDI-X ports	
SFP/mini-GBIC Slots	4 x 100/1000BASE-X SFP interfaces with Port-25 to Port-28. Supports 100/1000Mbps dual mode and DDM	
Console	1 x RS-232-to-RJ45 serial port (115200, 8, N, 1)	
Reset Button	< 5 sec: System reboot > 5 sec: Factory default	
LED	**System:** Power (**Green**) **10/100/1000T RJ45 Interfaces** (Port 1 to Port 24): 1000 LNK/ACT (**Green**), 10/100 LNK/ACT (**Orange**) **100/1000Mbps SFP Interfaces** (Port 25 to Port 28): 1000 LNK/ACT (**Green**), 100 LNK/ACT (**Orange**)	
Dimensions (W x D x H)	441 x 207 x 44 mm, 19-inch, 1U height	
Weight	2.1 kg	2.1 kg
ESD Protection	Contact Discharge 4KV DC Air Discharge 8KV DC	
Enclosure	Metal	
Power Requirements	AC 100~240V, 50/60Hz, auto-sensing	AC 100~240V, 50/60Hz, auto-sensing DC 36-72V
Power Consumption / Dissipation	19.3 watts (max.)/65BTU	AC: 19.3 watts (max.)/65BTU DC: 19.2 watts (max.)/65BTU
Switching		
Switch Architecture	Store-and-Forward	
Switch Fabric	56Gbps/non-blocking	
Switch Throughput@64Bytes	41.67Mpps	
Address Table	8K entries	
Shared Data Buffer	4.1 megabits	
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex	
Jumbo Frame	10K bytes	
Layer 2 Functions		
Port Mirroring	TX/RX/both Many-to-1 monitor Up to 4 sessions	
VLAN	802.1Q tagged-based VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs 802.1ad Q-in-Q tunneling Voice VLAN Protocol VLAN Private VLAN (Protected port) GVRP	
Link Aggregation	IEEE 802.3ad LACP/Static Trunk Supports 8 trunk groups with 8 ports per trunk	
Spanning Tree Protocol	STP, IEEE 802.1D Spanning Tree Protocol RSTP, IEEE 802.1w Rapid Spanning Tree Protocol MSTP, IEEE 802.1s Multiple Spanning Tree Protocol STP BPDU Guard, BPDU Filtering and BPDU Forwarding	
IGMP Snooping	IGMP (v2/v3) Snooping IGMP Querier Up to 256 multicast groups	
MLD Snooping	MLD (v1/v2) Snooping, up to 256 multicast groups	
QoS	8 mapping ID to 8 level priority queues - Port number - 802.1p priority - 802.1Q VLAN tag - DSCP field in IP packet Traffic classification based, strict priority and WRR	
Security Functions		
Access Control List	IPv4/IPv6 IP-based ACL/MAC-based ACL	

Port Security	IEEE 802.1X – Port-based authentication Built-in RADIUS client to co-operate with RADIUS server RADIUS/TACACS+ user access authentication	
MAC Security	IP-MAC port binding MAC filter Static MAC address	
Enhanced Security	DHCP Snooping and DHCP Option82 STP BPDU guard, BPDU filtering and BPDU forwarding DoS attack prevention ARP inspection IP source guard	
Management Functions		
Basic Management Interfaces	Web browser/Telnet/SNMP v1, v2c	
Secure Management Interfaces	SSHv2, TLS v1.2, SNMP v3	
System Management	Firmware upgrade by HTTP/TFTP protocol through Ethernet network Remote/Local Syslog System log LLDP protocol SNTP PLANET Smart Discovery Utility PLANET UNI-NMS central management software	
SNMP MIBs	RFC 1213 MIB-II RFC 1215 Generic Traps RFC 1493 Bridge MIB RFC 2674 Bridge MIB Extensions RFC 2737 Entity MIB (Version 2) RFC 2819 RMON (1, 2, 3, 9) RFC 2863 Interface Group MIB RFC 3635 Ethernet-like MIB RFC 3621 Power Ethernet MIB	
Standards Conformance		
Regulatory Compliance	FCC Part 15 Class A, CE	
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX/100BASE-FX IEEE 802.3z Gigabit SX/LX IEEE 802.3ab Gigabit 1000T IEEE 802.3x flow control and back pressure IEEE 802.3ad port trunk with LACP IEEE 802.1D Spanning Tree protocol IEEE 802.1w Rapid Spanning Tree protocol IEEE 802.1s Multiple Spanning Tree protocol IEEE 802.1p Class of Service IEEE 802.1Q VLAN tagging IEEE 802.1x Port Authentication Network Control	IEEE 802.1ab LLDP IEEE 802.3az Energy Efficient Ethernet (EEE) RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP version 1 RFC 2236 IGMP version 2 RFC 3376 IGMP version 3 RFC 2710 MLD version 1 RFC 3810 MLD version 2
Environment		
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	
Storage	Temperature: -20 ~ 70 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	

Ordering Information

GS-4210-24T4S	24-Port 10/100/1000T + 4-Port 100/1000X SFP Managed Gigabit Switch
GS-4210-24T4SR	24-Port 10/100/1000T + 4-Port 100/1000X SFP Managed Gigabit Switch with 36-72V DC Redundant Power

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) MGB-LB10(V2)	YES	1000	WDM(LC)	Single Mode	10km	1310nm	1550nm	0 ~ 60 degrees C
		1000	WDM(LC)	Single Mode	10km	1550nm	1310nm	0 ~ 60 degrees C
MGB-LA20(V2) MGB-LB20(V2)	YES	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	0 ~ 60 degrees C
		1000	WDM(LC)	Single Mode	20km	1550nm	1310nm	0 ~ 60 degrees C
MGB-LA40(V2) MGB-LB40(V2)	YES	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	0 ~ 60 degrees C
		1000	WDM(LC)	Single Mode	40km	1550nm	1310nm	0 ~ 60 degrees C
MGB-LA80 MGB-LB80	YES	1000	WDM(LC)	Single Mode	80km	1490nm	1550nm	0 ~ 60 degrees C
		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

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