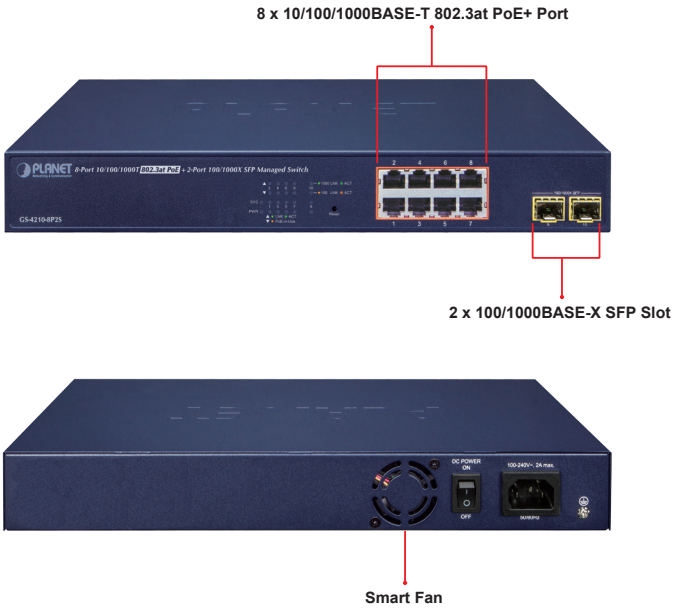
8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Managed Switch

A Perfect Managed PoE+ Switch with Advanced L2/L4 Switching and Security

PLANET GS-4210-8P2S is a cost-optimized, desktop-size Managed Gigabit PoE+ Switch featuring PLANET **intelligent PoE** functions to improve the availability of critical business applications. It provides IPv6/IPv4 dual stack management and built-in L2/L4 Gigabit switching engine along with **8 10/100/1000BASE-T** ports featuring **36-watt 802.3at PoE+** and **2 additional Gigabit SFP** slots. With a total power budget of up to **120 watts** for different kinds of PoE applications, it provides a quick, safe and cost-effective Power over Ethernet network solution for small businesses and enterprises.



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.

Physical Port

- **8 10/100/1000BASE-T** Gigabit RJ45 copper ports with 8-port IEEE **802.3at/af PoE** injector function
- **2 100/1000BASE-X mini-GBIC/SFP** slots

Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus, end-span PSE
- Backward compatible with IEEE 802.3af Power over Ethernet
- Up to 8 ports of IEEE 802.3af / 802.3at devices powered
- Supports PoE power up to 36 watts for each PoE port
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100 meters in standard mode and 250m in extend mode
- PoE management
  - Total PoE power budget control
  - Per port PoE function enable/disable
  - PoE port power feeding priority
  - Per PoE port power limitation
  - PD classification detection
  - PD alive check
  - PoE schedule

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

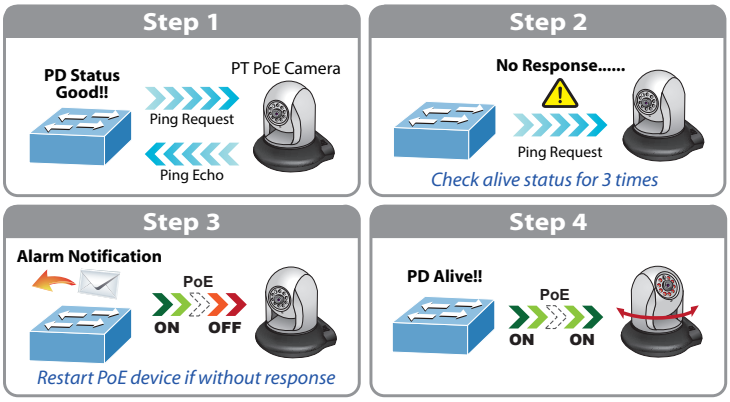
Built-in Unique PoE Functions for Powered Devices Management

As it is the managed PoE switch for surveillance, wireless and VoIP networks, the GS-4210-8P2S features the following special PoE management functions:

- PD Alive Check
- Scheduled Power Recycling
- PoE Schedule
- PoE Usage Monitoring
- PoE Extension

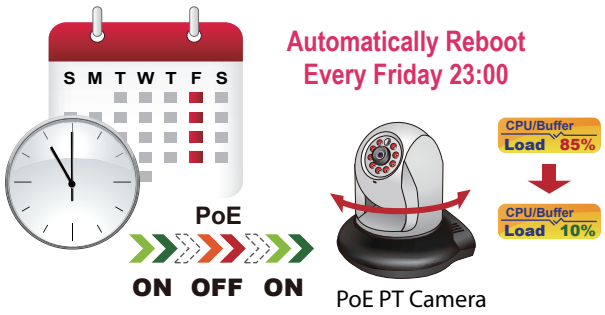
Intelligent Powered Device Alive-Check

The GS-4210-8P2S can be configured to monitor connected PD (powered device) status in real time via ping action. Once the PD stops working and responding, the GS-4210-8P2S will resume the PoE port power and bring the PD back to work. It will greatly enhance the network reliability through the PoE port resetting the PD's power source, thus reducing the administrator's management burden.



Scheduled Power Recycling

The GS-4210-8P2S allows each of the connected PoE IP cameras or PoE wireless access points to reboot at a specified time each week. Therefore, it will reduce the chance of IP camera or AP crash resulting from buffer overflow.



PoE Schedule for Energy Savings

Under the trend of energy savings worldwide and contributing to environmental protection, the GS-4210-8P2S can effectively control the power supply besides its capability of giving high watts power. The **"PoE schedule"** function helps you to enable or disable PoE power feeding for each PoE port during specified time intervals and it is a powerful function to help SMBs or enterprises save power and money. It also increases security by powering off PDs that should not be in use during non-business hours.

- 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)
- Provides port mirror (many-to-1)
- Loop protection to avoid broadcast loops

Quality of Service

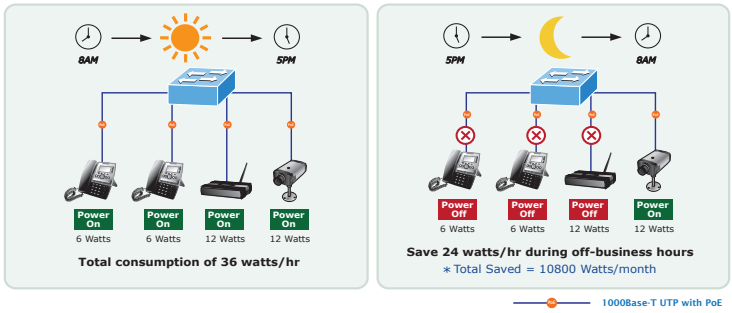
- Ingress and egress rate limit per port bandwidth control
- Storm control support
  - Broadcast / Unknown unicast / Unknown multicast
- Traffic classification
  - IEEE 802.1p CoS
  - TOS / DSCP / IP precedence of IPv4/IPv6 packets
- Strict priority and Weighted Round Robin (WRR) CoS policies

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
  - RADIUS / TACACS+ login user access authentication
- Access control list
  - IPv4 / IPv6 IP-based ACL
  - MAC-based ACL
- 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

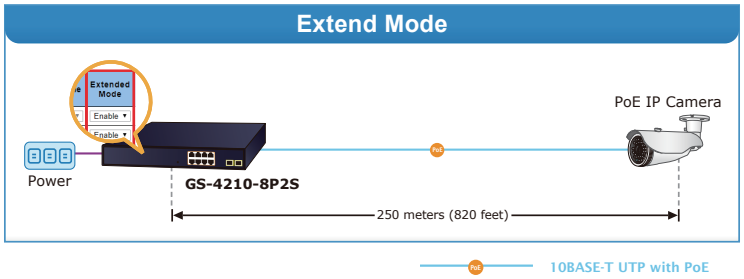


PoE Usage Monitoring

Via the power usage chart in the web management interface, the GS-4210-8P2S enables the administrator to monitor the status of the power usage of the connected PDs in real time. Thus, it greatly enhances the management efficiency of the facilities.

802.3at PoE+ Power and Ethernet Data Transmission Distance Extension

In the “Extend” operation mode, the GS-4210-8P2S operates on a per-port basis at 10Mbps duplex operation but can support 36-watt PoE power output over a distance of up to 250 meters overcoming the 100m limit on Ethernet UTP cable. With this brand-new feature, the GS-4210-8P2S provides an additional solution for 802.3at/af PoE distance extension, thus saving the cost of Ethernet cable installation.



Environmentally-friendly, Smart Fan Design for Silent Operation

The GS-4210-8P2S features a desktop-sized metal housing, a low noise design and an effective ventilation system. It supports the smart fan technology that automatically controls the speed of the built-in fan to reduce noise and maintain the temperature of the PoE switch for optimal power output capability. The GS-4210-8P2S is able to operate reliably, stably and quietly in any environment without affecting its performance.

IPv6/IPv4 Dual Stack Management

Supporting both IPv6 and IPv4 protocols, the GS-4210-8P2S 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.

Robust Layer 2 Features

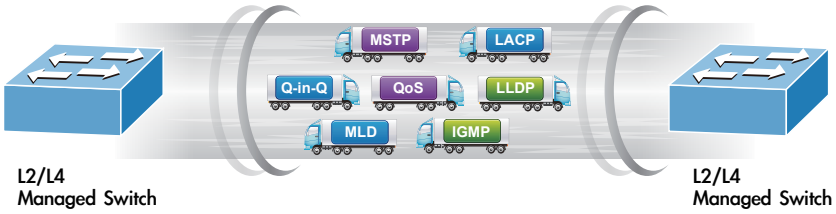
The GS-4210-8P2S can be programmed for advanced switch management functions such as dynamic port link aggregation, **802.1Q VLAN** and **Q-in-Q VLAN**, **Multiple Spanning Tree protocol (MSTP)**, loop and **BPDU guard**, **IGMP**

- DoS attack prevention
- SSH/SSL

Management

- IPv4 and IPv6 dual stack management
- Switch management interface
  - Web switch management
  - Telnet command line interface
  - SNMP v1 and v2c switch management
  - SSH/TLS and SNMP v3 secure access
- 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
- 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
- Smart fan with speed control

snooping, and **MLD snooping**. Via the link aggregation, the GS-4210-8P2S allows the operation of a high-speed trunk 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-4210-8P2S 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 **storm control**, per port **bandwidth control**, IP DSCP QoS priority and remarking. It guarantees 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-4210-8P2S 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** 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

It also provides **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-4210-8P2S is equipped with **web**, **Telnet** and **SNMP** management interfaces. With the built-in web-based management interface, the GS-4210-8P2S offers an easy-to-use, platform-independent management and configuration facility. By supporting the standard SNMP, the switch can be managed via any standard management software. For text-based management, the switch can be accessed via Telnet. Moreover, the GS-4210-8P2S 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 two mini-GBIC slots built in the GS-4210-8P2S support SFP auto-detection and dual speed as it features **100BASE-FX** and **1000BASE-SX/LX SFP** (Small Form-factor Pluggable) fiber transceivers 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 to 10/20/40/60/70/80/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

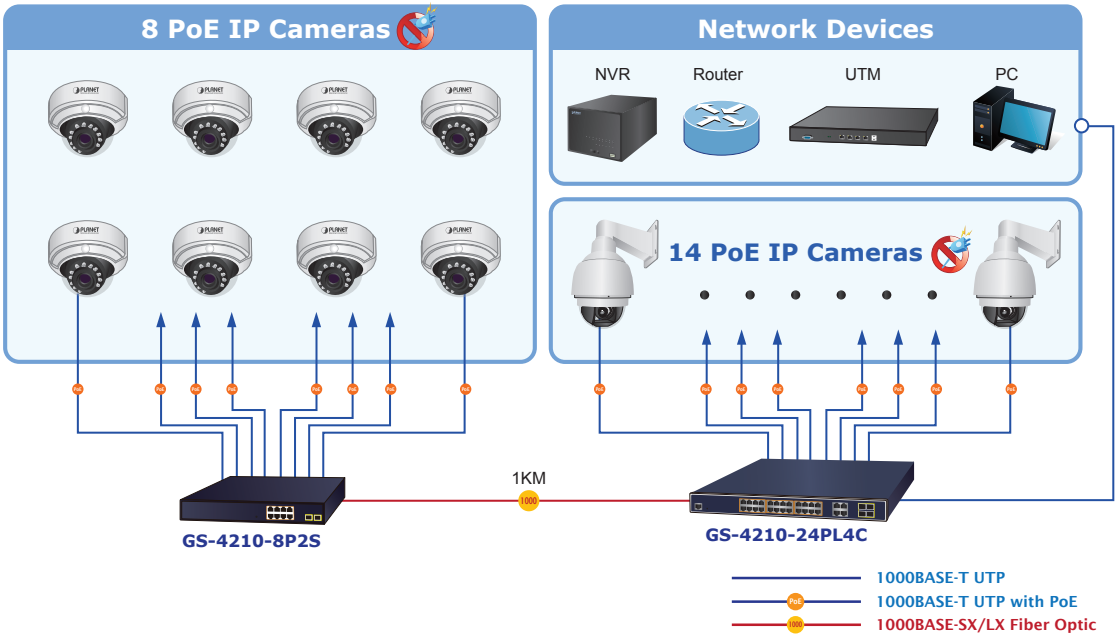
Intelligent SFP Diagnosis Mechanism

The GS-4210-8P2S supports **SFP-DDM (Digital Diagnostic Monitor)** function that can easily monitor real-time parameters of the SFP for network administrator, such as optical output power, optical input power, temperature, laser bias current and transceiver supply voltage.

Applications

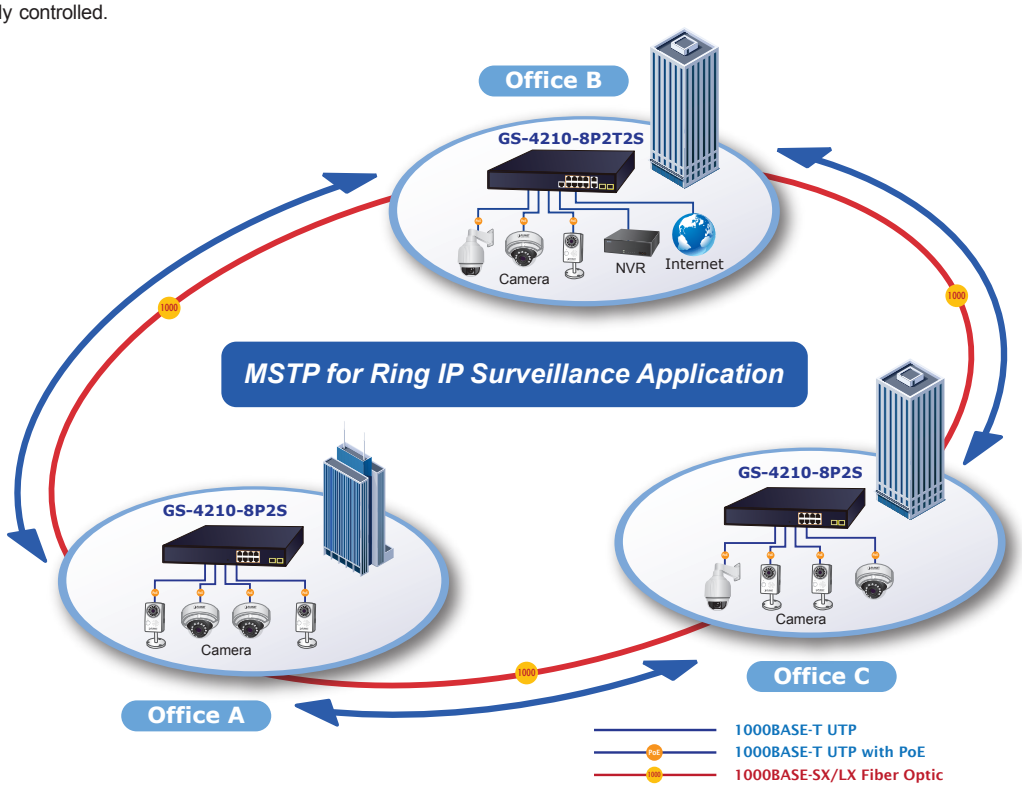
High Scalability for Today's 8-channel IP Surveillance Solution

The GS-4210-8P2S comes with non-blocking design and SFP fiber-optic modules, bringing network infrastructure higher flexibility but lower in cost. Providing eight 10/100/1000BASE-T PoE ports and two Gigabit SFP slots, the GS-4210-8P2S can easily build a video surveillance on the NVR system for the SOHO/ SMBs. For instance, it can work with eight PoE IP cameras and extend the network infrastructure easily for today's businesses.



Multiple Spanning Tree Protocol with PoE IP Office Solution for SMBs / Workgroups

The GS-4210-8P2S features strong rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates **Multiple Spanning Tree Protocol (802.1s MSTP)** into customer's automation network to enhance system reliability and uptime. Applying the IEEE 802.3at Power over Ethernet standard, the GS-4210-8P2S can directly connect with any IEEE 802.3at end-nodes like PTZ (pan, tilt, zoom) network cameras and speed dome cameras. The GS-4210-8P2S can easily help enterprises with the available network infrastructure to build a network of wireless AP, IP camera and VoIP systems where power can be centrally controlled.



Specifications

Product	GS-4210-8P2S
Hardware Specifications	
Copper Ports	8 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	2 100/1000BASE-X SFP interfaces Supports 100/1000Mbps dual mode and DDM
PoE Injector Port	8 ports with 802.3at / af PoE injector function with port-1 to port-8
Switch Architecture	Store-and-Forward
Switch Fabric	20Gbps / non-blocking
Switch Throughput@64Bytes	14.88Mpps
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
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
LED	**System:** PWR x1(Green) SYS x1 (Green) **Per PoE Port (Port 1 to Port 8):** LNK/ACT x1 (Green) PoE-in-use x1 (Orange) **Per Gigabit SFP Port (Port 9 to Port 10):** 1000 LNK/ACT x1 (Green) 100 LNK/ACT x1 (Orange)
Power Requirements	100~240V AC, 50/60Hz, auto-sensing
Dimensions (W x D x H)	330 x 155 x 43.5 mm, 1U height
ESD Protection	Contact Discharge 4KV DC Air Discharge 8KV DC
Enclosure	Metal
Weight	1687g
Power Consumption / Dissipation	165 watts (max.) / 563 BTU
Fan	1 smart fan
Power over Ethernet	
PoE Standard	IEEE 802.3af / 802.3at PoE+ PSE
PoE Power Supply Type	End-span
PoE Power Output	Per port 52V DC, 36 watts (max.)
Power Pin Assignment	1/2(+), 3/6(-)
PoE Power Budget	120 watts (max.) @ 25 degrees C 100 watts (max.) @ 50 degrees C
PoE Ability PD @ 9 watts	8 units
PoE Ability PD @ 15 watts	8 units
PoE Ability PD @ 30 watts	4 units
PoE Management	PD Alive Check Scheduled Power Recycling PoE Schedule PoE Usage Monitoring PoE Extension
Layer 2 Functions	
Port Mirroring	TX/RX/both Many-to-1 monitor
VLAN	802.1Q tagged 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 and static trunk Supports 8 trunk groups with 8 ports per trunk group
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

IGMP Snooping	IGMP (v2/v3) snooping IGMP querier Up to 256 multicast groups
MLD Snooping	MLD (v1/v2) snooping, up to 256 multicast groups
Access Control List	IPv4/IPv6 IP-based ACL / MAC-based ACL
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	IEEE 802.1X port-based authentication Built-in RADIUS client to cooperate with RADIUS server RADIUS / TACACS+ user access authentication IP-MAC port binding MAC filtering Static MAC address 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 Firmware upgrade by HTTP / TFTP protocol through Ethernet network Remote / Local Syslog System log LLDP protocol SNTP
Secure Management Interfaces	SSHv1/v2, TLS v1.2, SNMP v3
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, LVD
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 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus 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-4210-8P2S	8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Managed Switch

Related PoE Products

POE-161S	IEEE 802.3at Gigabit Power over Ethernet Plus Splitter with 5V/12VDC output (10/100/1000Mbps)
POE-162S	IEEE 802.3at Gigabit Power over Ethernet Plus Splitter with 12V/24VDC output (10/100/1000Mbps)
IPOE-162S	Industrial IEEE 802.3at Gigabit High Power over Ethernet Splitter
POE-E101	IEEE 802.3af Power over Ethernet Extender
POE-E201	IEEE 802.3at Power over Gigabit Ethernet Extender
POE-E202	1-Port 802.3at PoE+ to 2-Port 802.3af/at Gigabit PoE Extender
IPOE-E202	Industrial 1-Port 802.3at PoE+ to 2-Port 802.3af PoE Extender
LRP-101CH	1-Port 10/100TX PoE PD + 1-Port Coax Long Reach PoE Injector
LRP-101UH	1-Port 10/100TX PoE PD + 1-Port UTP Long Reach PoE Injector

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	YES	1000	LC	Multi Mode	550m	850nm	0 ~ 60 degrees C
MGB-SX2	YES	1000	LC	Multi Mode	2km	1310nm	0 ~ 60 degrees C
MGB-LX	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	YES	1000	LC	Single Mode	120km	1550nm	0 ~ 60 degrees C

10Gigabit Ethernet Transceiver (10GBASE-BX, Single Fiber Bi-directional SFP)

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

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