

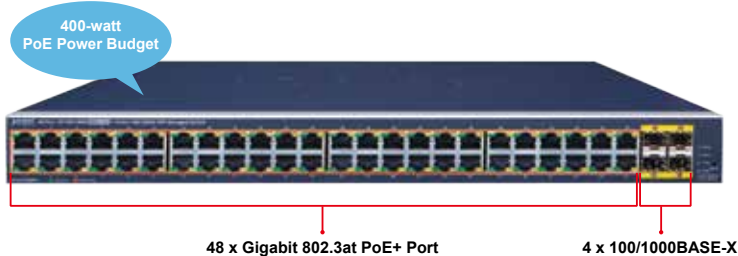
48-Port 10/100/1000T 802.3at PoE + 4-Port 100/1000BASE-X SFP Managed Switch



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

PLANET GS-4210-48P4S is a cost-optimized, high-density PoE+ Managed Gigabit Ethernet 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 **48 10/100/1000BASE-T** ports featuring **36-watt 802.3at PoE+** and **4 additional Gigabit SFP** slots. With a total power budget of up to **400 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.

GS-4210-48P4S



Premium VoIP Networks for Medium- to Large-scale Deployments

The GS-4210-48P4S has 48 IEEE 802.3at PoE+ ports, 104Gbps switch fabric and advanced QoS functionality for deploying medium- to large-scale VoIP or wireless networks at a low total cost. One GS-4210-48P4S can power up 48 PoE VoIP phones and delivers HD (high-definition) voice to VoIP network with high priority, resulting in higher quality voice and clearer communication. From now on, customers only need fewer units of the GS-4210-48P4S than before to achieve the goal of cost-effectiveness, thereby saving setup time and human resource.

Cybersecurity Network Solution to Minimize Security Risks

The GS-4210-48P4S 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**, **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

- **48 10/100/1000BASE-T** Gigabit RJ45 copper ports with 48-port **IEEE 802.3at/af PoE** injector
- **4 100/1000BASE-X** mini-GBIC/SFP slots
- Reset button for system factory default and reboot

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

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 48 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 that eliminates



Redundant Ring, Fast Recovery for Critical Network Applications

The GS-4210-48P4S 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.

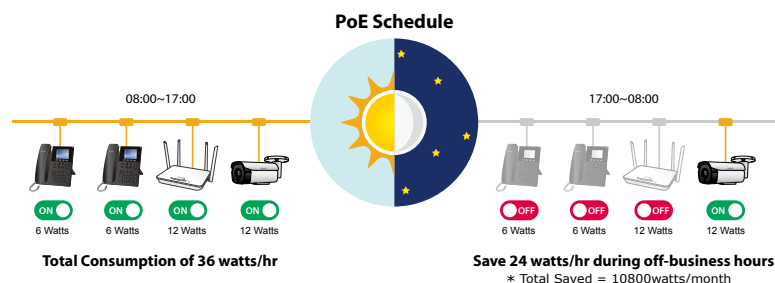
Built-in Unique PoE Functions for Powered Device Management

As it is the managed PoE switch for surveillance, wireless and VoIP networks, the GS-4210-48P4S features the following special PoE management functions:

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

PoE Schedule for Energy Saving

Under the trend of energy saving worldwide and contributing to environmental protection, the GS-4210-48P4S 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.



Intelligent Powered Device Alive-Check

The GS-4210-48P4S 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-4210-48P4S 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 and reducing administrator management burden.

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)
- Provides port mirror (many-to-1)
- Loop protection to avoid broadcast loops
- Supports ERPS (Ethernet Ring Protection Switching)

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

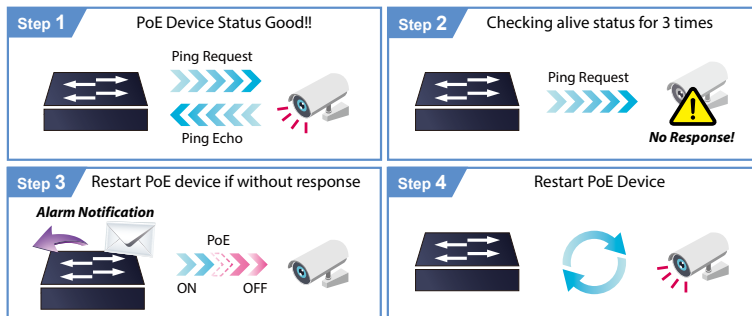
Multicast

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

Security

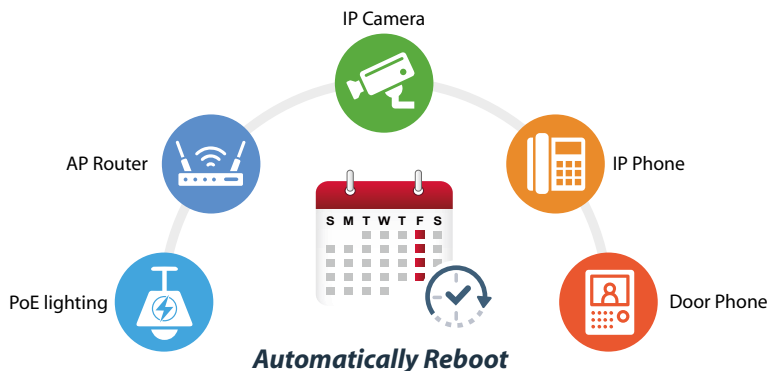
- Authentication
 - IEEE 802.1X port-based network access authentication
 - Built-in RADIUS client to cooperate with the RADIUS servers
 - RADIUS/TACACS+ login user access authentication
- Access control list
 - IPv4/IPv6 IP-based ACL
 - MAC-based ACL
- MAC security
 - Static MAC
 - MAC filtering
- Port security for source MAC address entries filtering

PD Alive Check



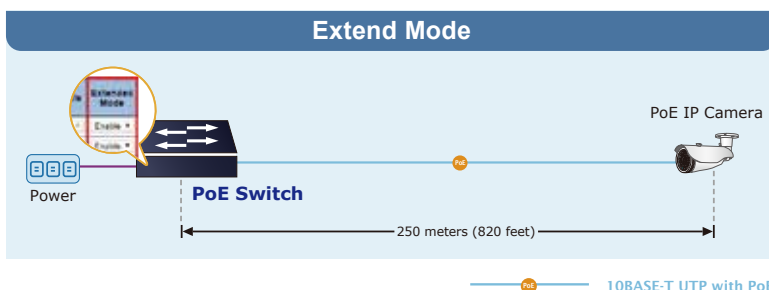
Scheduled Power Recycling

The GS-4210-48P4S allows each of the connected PoE IP cameras or PoE wireless access points to reboot at a specific time each week. Therefore, it will reduce the chance of IP camera or AP crash resulting from buffer overflow.



802.3at PoE+ Power and Ethernet Data Transmission Distance Extension

In the "Extend" operation mode, the GS-4210-48P4S 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-4210-48P4S provides an additional solution for 802.3at/af PoE distance extension, thus saving the cost of Ethernet cable installation.



Environment-friendly, Smart Fan Design for Silent Operation

The GS-4210-48P4S features 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-4210-48P4S is able to operate reliably, stably and quietly in any environment without affecting its performance.

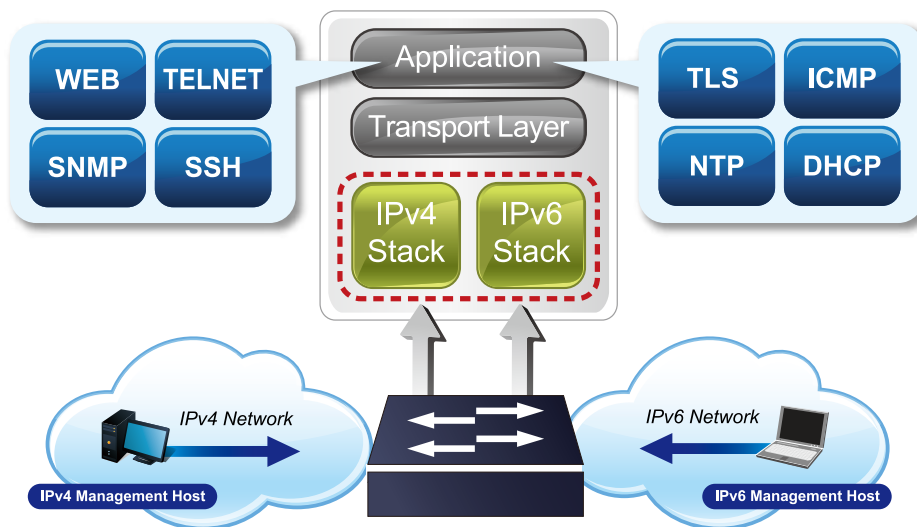
- DHCP snooping to filter untrusted DHCP messages
- Dynamic ARP Inspection discards ARP packets with invalid MAC address to IP address binding
- IP source guard prevents IP spoofing attacks
- DoS attack prevention

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
- 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) and LLDP-MED
- Event message logging to remote Syslog server
- PLANET Smart Discovery Utility for deployment management
- PLANET NMS system and CloudViewer for deployment management

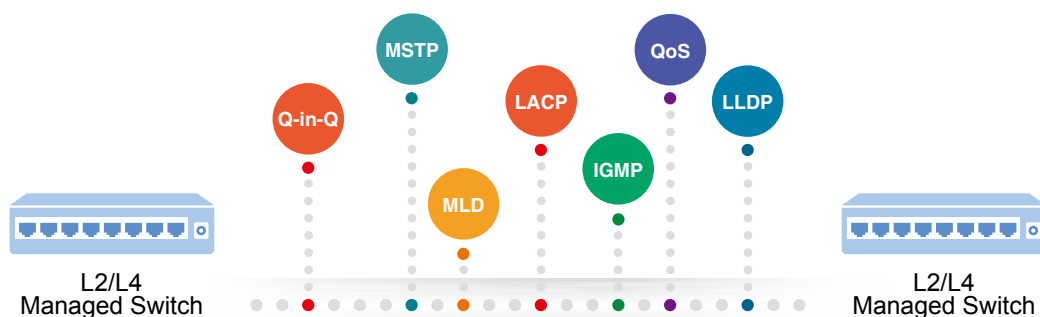
IPv6/IPv4 Dual Stack Management

Supporting both IPv6 and IPv4 protocols, the GS-4210-48P4S 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 network is set up.



Robust Layer 2 Features

The GS-4210-48P4S 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 **BPD guard**, **IGMP snooping**, and **MLD snooping**. Via the link aggregation, the GS-4210-48P4S 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-4210-48P4S 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

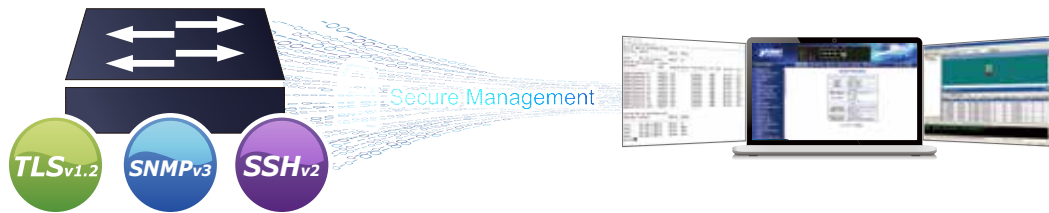
PLANET GS-4210-48P4S offers comprehensive **IPv4/IPv6** Layer 2 to Layer 4 **Access Control List (ACL)** for enforcing security to the edge. It can be used to restrict network access by denying packets based on source and destination IP address, TCP/UDP ports or defined typical network applications. 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.

Friendly and Secure Management

For efficient management, the GS-4210-48P4S is equipped with Command line, Web and SNMP management interfaces.

- With the built-in **Web-based** management interface, the GS-4210-48P4S 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-4210-48P4S offers secure remote management by supporting **SSHv2**, **TLSv1.2** and **SNMP v3** connections which encrypt the packet content at each session.

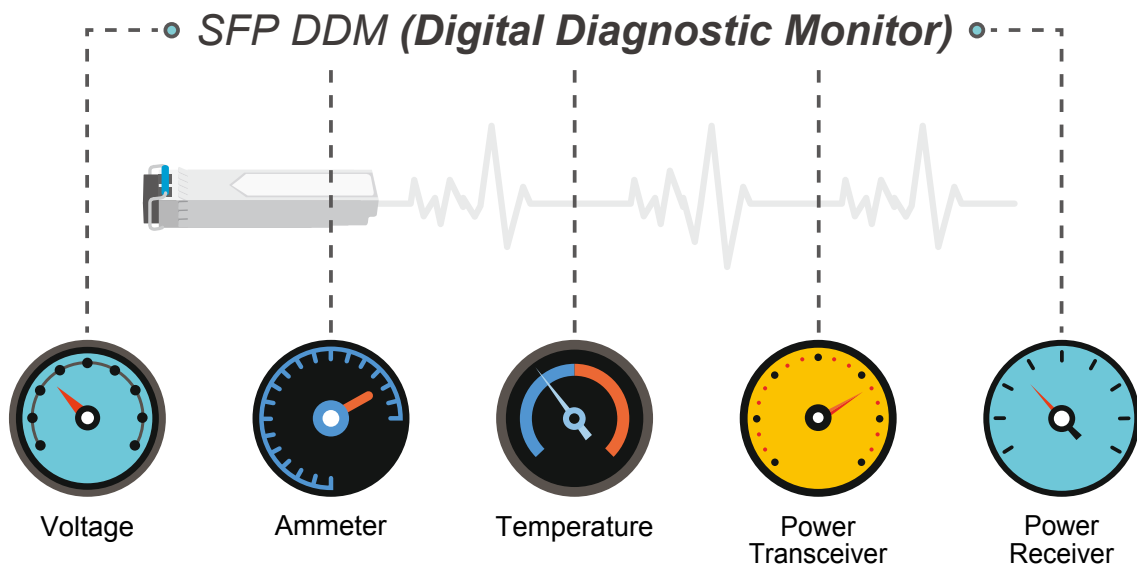


Flexibility and Long-distance Extension Solution

The four mini-GBIC slots built in the GS-4210-48P4S 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 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.

Intelligent SFP Diagnosis Mechanism

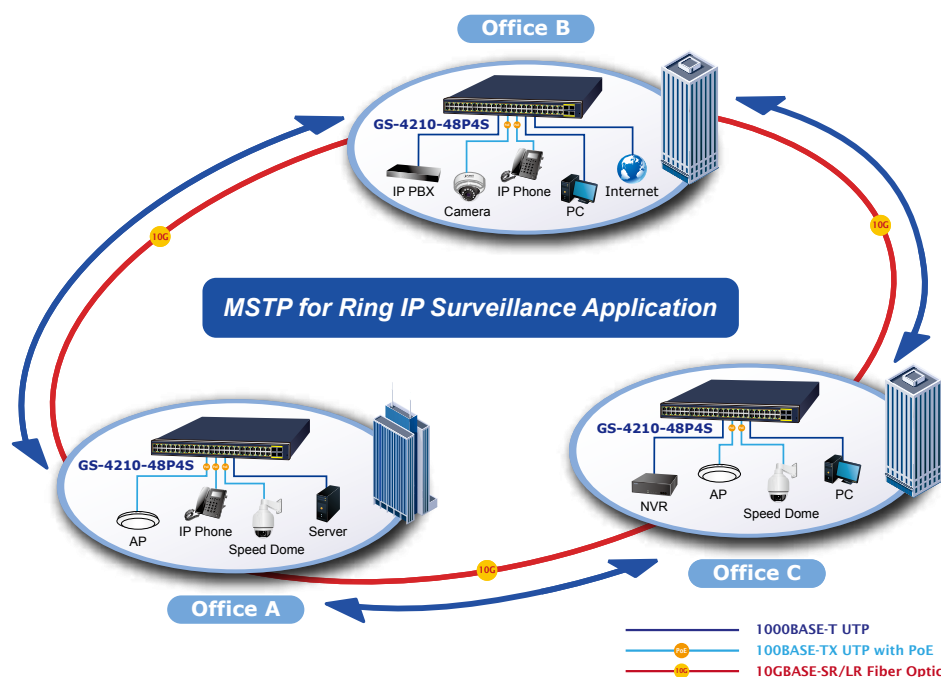
The GS-4210-48P4S supports **SFP-DDM (Digital Diagnostic Monitor)** function that can easily monitor real-time parameters of the SFP for network administrator, such as optical output power, optical input power, temperature, laser bias current and transceiver supply voltage.



Applications

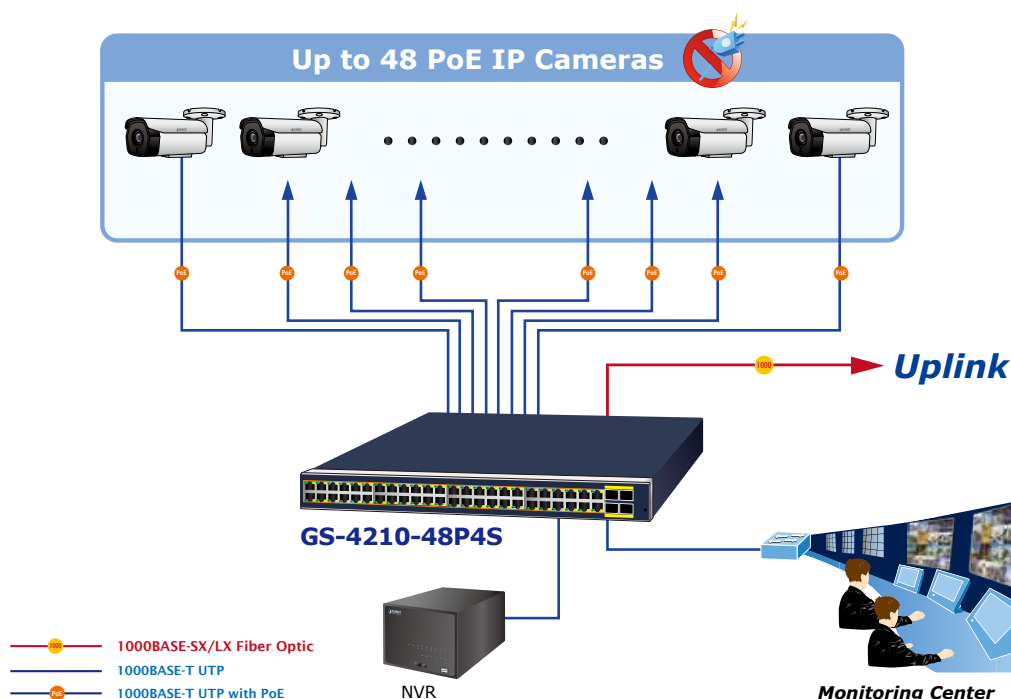
ITU-T G.8032 ERPS with PoE IP Surveillance System for SMBs/Workgroups

The GS-4210-48P4S features strong rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates **ITU-T G.8032 ERPS (Ethernet Ring Protection Switching)** technology into customer's automation network to enhance system reliability and uptime. Applying the IEEE 802.3at Power over Ethernet standard, the GS-4210-48P4S can directly connect with any IEEE 802.3at end nodes like PTZ (pan, tilt, zoom) network cameras and speed dome cameras. The GS-4210-48P4S can easily build a power that can centrally control a wireless AP, IP camera and VoIP system for SMBs and workgroups in the enterprises with high availability network infrastructure.



High Density of IP Surveillance Network

Providing up to 48 PoE+, in-line power interfaces and 4 100/1000BASE-X SFP interfaces, the GS-4210-48P4S can easily build an IP camera system where power can be centrally controlled. The GS-4210-48P4S can work with 8/16/32-channel NVR and surveillance software to perform comprehensive security monitoring. For instance, one GS-4210-48P4S can be combined with one 32-channel NVR and one 8-channel NVR, which feature real-time video and audio, live viewing, and playback. Each of its PoE ports can be linked with a PoE IP camera in order for the administrators to centrally and efficiently manage the surveillance system in one site. Moreover, its 4 100/1000BASE-X SFP interfaces also provide flexible fiber connection for uplink to public server groups.



Specifications

Product	GS-4210-48P4S
Hardware Specifications	
Hardware Version	2
Copper Ports	48 x 10/100/1000BASE-T RJ45 auto-MDI/MDI-X port
SFP/mini-GBIC Slots	4 x 100/1000BASE-X SFP interface Supports 100/1000Mbps dual mode and DDM
PoE Injector Port	48 ports with 802.3at/af PoE injector function with port-1 to port-48
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
LED	System: PWR (Power) (Green) SYS (System) (Green) FAN1 (Orange) FAN2&3 (Orange) 10/100/1000T RJ45 Interfaces (Port 1 to Port 48): 10/100/1000Mbps, LNK/ACT (Green) PoE-in-Use (Orange) 100/1000Mbps SFP Interfaces (Port 49 to Port 52): 1000Mbps, LNK/ACT (Green) 100Mbps, LNK/ACT (Orange)
Power Requirements	100~240V AC, 50/60Hz, auto-sensing
Dimensions (W x D x H)	440 x 300 x 44.5 mm, 1U height
ESD Protection	6KV DC
Enclosure	Metal
Weight	4690g
Power Consumption	449.9 watts (max.)/1534 BTU
Fan	3 x smart fan
Switch Specifications	
Switch Architecture	Store-and-Forward
Switch Fabric	104Gbps, non-blocking
Switch Throughput@64Bytes	77.38Mpps
Address Table	16K entries
Shared Data Buffer	12 megabits
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Jumbo Frame	10K bytes
Power over Ethernet	
PoE Standard	IEEE 802.3af/802.3at PoE+ PSE
PoE Power Supply Type	End-span
PoE Power Output	Per port 53V DC, 36 watts (max.)
Power Pin Assignment	1/2(+), 3/6(-)
PoE Power Budget	400 watts (max.) @ 50 degrees C
PoE Ability PD @ 9 watts	44 units
PoE Ability PD @ 15 watts	26 units
PoE Ability PD @ 30 watts	13 units
Layer 2 Functions	
Port Mirroring	TX/RX / both Many-to-1 monitor Up to 4 sessions
VLAN	802.1Q tag-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 and static 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 IDs 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	
Ring	Supports ERPS, and complies with ITU-T G.8032	
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 LLDP protocol SNTP PLANET Smart Discovery Utility PLANET NMS System/CloudViewer	
Event Management	Remote/Local Syslog System log	
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 783 TFTP RFC 793 TCP 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 ITU G.8032 ERPS Ring
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-4210-48P4S	48-Port 10/100/1000T 802.3at PoE + 4-Port 100/1000BASE-X SFP Managed Switch
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Related 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
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(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

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