

# Product Specifications

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

### GS-4210-24P2S

Version 2.0

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#### Change History:

Revision:	Date:	Author:	Change List
Version 2.0	2017/1/9	Marc Liao	Initial Release - New firmware SDK release. - Hardware lightning Prevention - Add intelligent PoE features Supports SSH
Version 1.0	2014/7/28	Marc Liao	Initial Release
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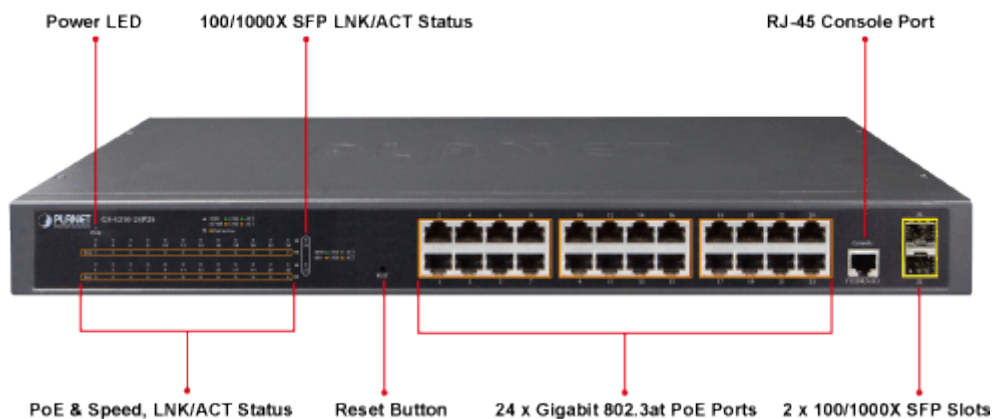
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## 1. PRODUCT DESCRIPTION



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

PLANET GS-4210-24P2S is an ideal Gigabit PoE 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**. The model complies with **IEEE 802.3at Power over Ethernet Plus (PoE+)** at an affordable price. The GS-4210-24P2S is equipped with **24 10/100/1000BASE-T** Gigabit Ethernet ports and **2 100/1000BASE-X** SFP interfaces with inner power system. Its **24** Gigabit Ethernet ports integrated with 802.3at PoE+ injector function on all ports. It offers a rack-mountable, affordable, safe and reliable power solution for SMBs deploying Power over Ethernet networks, or requiring enhanced data security and network traffic management.



### Built-in Unique PoE Functions for Powered Devices Management

As the PoE managed switch for surveillance, wireless and VoIP networks, the GS-4210-24P2S features special PoE management functions:

- PD alive check
- Scheduled power recycling
- PoE schedule
- PoE usage monitoring

### Intelligent Powered Device Alive Check

The GS-4210-24P2S 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-4210-24P2S 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.

### Scheduled Power Recycling

The GS-4210-24P2S 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.

### PoE Schedule for Energy Saving

Under the trend of energy saving worldwide and contributing to environmental protection, the GS-4210-24P2S 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.

### PoE Usage Monitoring

Via the power usage chart in the web management interface, the GS-4210-24P2S 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.

### IPv6/IPv4 Dual Stack

Supporting both IPv6 and IPv4 protocols, the GS-4210-24P2S 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-4210-24P2S 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-4210-24P2S allows the operation of a high-speed trunk to combine with multiple ports such as a 4Gbps 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-4210-24P2S 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 advantages of the limited network resources.

### Enhanced and Secure Management

For efficient management, the GS-4210-24P2S is equipped with **console**, **web**, **telnet** and **SNMP** management interfaces. With the built-in web-based management interface, the GS-4210-24P2S offers an easy-to-use, platform-independent management and configuration facility. By supporting standard Simple Network Management Protocol (SNMP), the switch can be managed via any standard management software. For text-based management, the switch can be accessed via telnet and the console port. Moreover, the GS-4210-24P2S offers secure remote management by supporting **SSH**, **HTTPS** and **SNMPv3** connections which encrypt the packet content at each session.

### Powerful Security

PLANET GS-4210-24P2S 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 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-4210-24P2S 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.

## Flexible Extension Solution

The two mini-GBIC slots built in the GS-4210-24P2S 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 2km (multi-mode fiber) and to 10/20/30/40/50/60/70/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

## 2. PRODUCT FEATURES

### ► 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 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
- 9K jumbo frame
- Automatic address learning and address aging
- Supports CSMA/CD protocol

### ► Power over Ethernet

- Complies with IEEE 802.3at High Power over Ethernet
- Complies with IEEE 802.3af Power over Ethernet
- Up to 24 ports of IEEE 802.3af/802.3at devices powered
- Supports PoE Power up to 30.8 watts for each PoE port
- 300-watt PoE budget
- Auto detects powered device (PD)
- Circuit protection prevents power interference between ports
- Remote power feeding up to 100m
- PoE Management
  - Total PoE power budget control
  - Per port PoE function enable/disable
  - PoE Port Power feeding priority
  - Per PoE port power limitation

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- PoE delay
- PD classification detection

- Intelligent PoE features

- PoE usage threshold control
- 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, 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)
- 1 LACP group, up to 2 ports per LACP group
- Cisco ether-channel (static trunk)
- 1 trunk group, up to 2 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

▶ **Management**

- IPv4 and IPv6 dual stack management
- Switch management interface
  - Web switch management
  - Telnet command line interface
  - SNMP v1, v2c and v3
  - SSH and SSL secure access
- 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

### 3. PRODUCT SPECIFICATIONS

#### 3.1 MAIN COMPONENTS

<b>Switch ASIC:</b>	Realtek RTL8382M x1
<b>Gigabit Ethernet PHY:</b>	Realtek RTL8218B x2
<b>POE Control</b>	Microsemi PD69100 x1 Microsemi PD69108 x3
<b>CPU:</b>	MIPS-4KEc 500MHz (integrated with RTL8382M)
<b>Flash:</b>	16Mbytes
<b>DDR RAM:</b>	128Mbytes
<b>Power Supply:</b>	Gospell G0591-33012520A x 1, 51V/6A+5V/5A (330 watts)

#### 3.2 FUNCTION SPECIFICATIONS

<b>Product</b>	<b>GS-4210-24P2S</b>
<b>Hardware Specifications</b>	
<b>Hardware Version</b>	2
<b>Copper Ports</b>	24 x 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
<b>PoE Injector Port</b>	24 802.3af/802.3at PoE injector ports
<b>SFP/mini-GBIC Slots</b>	2 100/1000BASE-X SFP interfaces, supporting 100/1000Mbps dual mode
<b>Console</b>	1 x RS-232-to-RJ45 serial port (115200, 8, N, 1)
<b>Switch Architecture</b>	Store-and-Forward
<b>Switch Fabric</b>	52Gbps/non-blocking
<b>Switch Throughput@64 bytes</b>	38.6Mpps @64 bytes
<b>MAC Address Table</b>	8K entries
<b>Shared Data Buffer</b>	4.1 megabits
<b>Flow Control</b>	IEEE 802.3x pause frame for full duplex Back pressure for half duplex
<b>Jumbo Frame</b>	9216 bytes
<b>Reset Button</b>	< 5 sec: System reboot > 5 sec: Factory default
<b>LED</b>	<b>System:</b> Power ( <b>Green</b> ) <b>10/100/1000T RJ45 Interfaces</b> (Port 1 to Port 24): 1000 LNK/ACT ( <b>Green</b> ), 10/100 LNK/ACT ( <b>Orange</b> ), PoE ( <b>Orange</b> )

	100/1000Mbps SFP Interfaces (Port 25 to Port 26): 1000 LNK/ACT ( <b>Green</b> ), 100 LNK/ACT ( <b>Orange</b> )
<b>Thermal Fan</b>	2
<b>Power Requirements</b>	100~240V AC, 50/60Hz, 4A (max.)
<b>Power Consumption/Dissipation</b>	Max. 330 watts/1122 BTU
<b>Enclosure</b>	Metal
<b>Power over Ethernet</b>	
<b>PoE Standard</b>	IEEE 802.3af Power over Ethernet/PSE IEEE 802.3at Power over Ethernet Plus/PSE
<b>PoE Power Output</b>	Per Port 52V DC, 300mA. Max. 15.4 watts (IEEE 802.3af) Per Port 52V DC, 600mA. Max. 30 watts (IEEE 802.3at)
<b>PoE Power Budget</b>	300 watts
<b>Number of PDs, 7 watts</b>	24
<b>Number of PDs, 15.4 watts</b>	19
<b>Number of PDs, 30 watts</b>	9
<b>Layer 2 Functions</b>	
<b>Port Mirroring</b>	TX/RX/both Many-to-1 monitor
<b>VLAN</b>	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 Management VLAN
<b>Link Aggregation</b>	IEEE 802.3ad LACP supports 1 group of 2-port trunk and static trunk supports 1 group of 2-port trunk
<b>Spanning Tree Protocol</b>	IEEE 802.1D Spanning Tree Protocol (STP) IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
<b>IGMP Snooping</b>	IGMP (v2/v3) snooping IGMP querier Up to 256 multicast groups
<b>MLD Snooping</b>	IPv6 MLD (v1/v2) snooping, up to 256 multicast groups
<b>Access Control List</b>	IPv4/IPv6 IP-based ACL/MAC-based ACL Pv4/IPv6 IP-based ACE/MAC-based ACE
<b>QoS</b>	8 mapping IDs to 8 level priority queues - Port number - 802.1p priority - DSCP/IP precedence of IPv4/IPv6 packets Traffic classification based, strict priority and WRR



	Ingress/Egress Rate Limit per port bandwidth control
<b>Security</b>	<p>IEEE 802.1X port-based authentication</p> <p>Built-in RADIUS client to cooperate with RADIUS server</p> <p>RADIUS/TACACS+ authentication</p> <p>IP-MAC port binding</p> <p>MAC filtering</p> <p>Static MAC address</p> <p>DHCP snooping and DHCP Option82</p> <p>STP BPDU guard, BPDU filtering and BPDU forwarding</p> <p>DoS attack prevention</p> <p>ARP inspection</p> <p>IP source guard</p> <p>Storm control support</p> <p>Broadcast/unknown unicast/unknown multicast</p>
<b>Management Functions</b>	
<b>Basic Management Interfaces</b>	<p>RJ45 Console; Web browser; Telnet; SNMP v1, v2c, v3</p> <p>Firmware upgrade by HTTP/TFTP Protocol through Ethernet network</p> <p>Configuration upload/download through HTTP/TFTP</p> <p>Remote/Local Syslog</p> <p>System log</p> <p>LLDP Protocol</p> <p>SNTP</p> <p>PLANET Smart Discovery Utility</p>
<b>Secure Management Interfaces</b>	HTTPs, SNMP v3
<b>SNMP MIBs</b>	<p>RFC 3635 Ethernet-like MIB</p> <p>RFC 2863 Interface Group MIB</p> <p>RFC 2819 RMON (1, 2, 3, 9)</p> <p>RFC 1493 Bridge MIB</p>
<b>Standards Conformance</b>	
<b>Standards Compliance</b>	<p>IEEE 802.3 10BASE-T</p> <p>IEEE 802.3u 100BASE-TX/100BASE-FX</p> <p>IEEE 802.3z Gigabit SX/LX</p> <p>IEEE 802.3ab Gigabit 1000T</p> <p>IEEE 802.3x flow control and back pressure</p> <p>IEEE 802.3ad port trunk with LACP</p> <p>IEEE 802.1D Spanning Tree Protocol</p> <p>IEEE 802.1w Rapid Spanning Tree Protocol</p> <p>IEEE 802.1s Multiple Spanning Tree Protocol</p> <p>IEEE 802.1p Class of Service</p> <p>IEEE 802.1Q VLAN tagging</p> <p>IEEE 802.1x Port Authentication Network Control</p> <p>IEEE 802.1ab LLDP</p> <p>IEEE 802.3af Power over Ethernet</p> <p>IEEE 802.3at Power over Ethernet Plus</p> <p>RFC 768 UDP</p> <p>RFC 793 TFTP</p> <p>RFC 791 IP</p> <p>RFC 792 ICMP</p>

	<p>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</p>
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### 3.3 PHYSICAL SPECIFICATIONS:

■ **Dimensions:**

445 x 207 x 45 mm (W x D x H, 1U height)

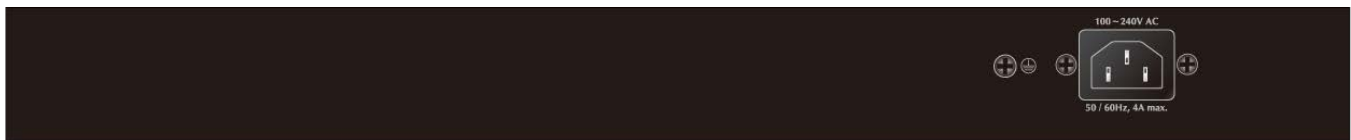
■ **Weight:**

2.8kg

■ **Front Panel:**



■ **Rear Panel:**



■ **LED Definition**

➤ **System**

LED	Color	Function
PWR	Green	Lights to indicate that the Switch has power.

➤ **10/100/1000BASE-T Interfaces**

LED	Color	Function
1000 LNK/ACT	Green	Lights: To indicate the link through that port is successfully established at 1000Mbps. Blinks: To indicate that the switch is actively sending or receiving data over that port.
10/ 100 LNK/ACT	Orange	Lights: To indicate the link through that port is successfully established at 10Mbps or 100Mbps. Blinks: To indicate that the switch is actively sending or receiving data over that port.
PoE In-Use	Orange	Lights: To indicate the port is providing 52V DC in-line power. Off: To indicate the connected device is not a PoE powered device (PD)

■ 100/1000BASE-X SFP Interfaces

LED	Color	Function
1000 LNK/ACT	Green	Lights: To indicate the link through that port is successfully established at 1000Mbps. Blinks: To indicate that the switch is actively sending or receiving data over that port.
100 LNK/ACT	Orange	Lights: To indicate the link through that port is successfully established at 100Mbps. Blinks: To indicate that the switch is actively sending or receiving data over that port.

3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: 0°C ~ 50 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

Storage:

Temperature: -10°C ~ 70 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

3.5 ELECTRICAL SPECIFICATION

Input Voltage:	100~240V AC, 50/60Hz, 4A (max.)	
Power Consumption (System on):	110V: 12 watts	40BTU
	220V: 10 watts	34BTU
Power Consumption (Ethernet Full Load):	110V: 23 watts	78BTU
	220V: 21 watts	71BTU
Power Consumption (PoE Full Load):	110V:300 watts *	1023BTU
	220V:300 watts *	1023BTU

\* With a total PoE power output limited at 300 watts

3.6 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

3.7 RELIABILITY

MTBF > 50,000 hrs @ 25 degrees C

### 3.8 BASIC PACKAGING

- The GS-4210-24P2S x 1
- Quick Installation Guide x 1
- Rubber Feet x 4
- Power Cord x 1
- RS232 to RJ45 Console Cable x 1
- SFP Dust Cap x 2
- Rack-mount Accessory Kit x 1

### 3.9 PACKING INFORMATION

<b>Box Dimensions:</b>	555 (W) × 295 (D) × 88 mm (H)
<b>Carton Dimensions:</b>	580 (W) × 395 (D) × 325 mm (H)
<b>Total Weight:</b>	4.1kg (gw)
	4pcs in one carton (16.3kg)