

Product Specifications

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

GS-4210-8P2S

Version 3.0

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Change History:

Revision:	Date:	Author:	Change List
Version 3.0	2021/5/18	Marc Liao	Initial Release - Release for new hardware designed. - Add 16M bytes flash. - PoE PSE controller chipset replacement from IC Plus IP808AR to Texas Instruments TPS23861 - Open Frame Power Supply replacement from 52V /150W to 56V /150W. - Fanless designs
Version 2.0	2020/1/10	Marc Liao	Initial Release - Release for new CIS housing printing. - PoE PSE controller chipset replacement from Microsemi PD69008 to IC Plus IP808AR.
Version 1.0	2015/2/17	Jos Li	Initial Release

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1. PRODUCT DESCRIPTION



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 **30-watt 802.3at PoE+** and **2 additional 100/1000BASE-X SFP fiber slots**. With a total power budget of up to **140 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 GS-4210-8P2S 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.

Redundant Ring, Fast Recovery for Critical Network Applications

The GS-4210-8P2S 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 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.

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 20-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, Fanless Design for Silent Operation

The GS-4210-8P2S with a desktop-sized metal housing is designed to operate quietly and effectively as it is fanless and comes with optimal power output capability. Thus, the GS-4210-8P2S can be deployed 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 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

The GS-4210-8P2S offers comprehensive 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 authentication. With the private VLAN function, communication between edge ports can be prevented to ensure user privacy. 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 Command line, Web 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.
- 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-4210-8P2S offers secure remote management by supporting **SSHv2**, **TLSv1.2** and **SNMP v3** connections which encrypt the packet content at each session.

Flexible Long-distance Extension Solution

The two mini-GBIC ports 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 10/20/40/60/80/120 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.

2. PRODUCT FEATURES

▶ **Physical Port**

- **8-Port 10/100/1000BASE-T** Gigabit RJ45 copper with 8-Port **IEEE 802.3at/af PoE** Injector (Port-1 to Port-8)
- **2 100/1000BASE-X** mini-GBIC/SFP ports
- RJ45 console interface for switch basic management and setup

▶ **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 30 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
 - Per port PoE function enable/disable
 - PoE port power feeding priority
 - Per PoE port power allocation
 - 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 (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 1 trunk group, up to 2 ports per trunk group

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

▶ **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
 - RADIUS/TACACS+ login user access authentication
- Access Control List
 - IPv4/IPv6 IP-based ACL/ACE
 - MAC-based ACL/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
- 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 via HTTP/TFTP
 - Dual Images
 - Hardware reset button for system reboot or reset to factory default
- SNTP Network Time Protocol
- Cable Diagnostics
- Link Layer Discovery Protocol (LLDP) Protocol 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 CloudViewer for deployment management

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Switch ASIC	Realtek RTL8380M	x 1
DDR RAM	128M bytes	x 1
Flash	16M bytes	x 1
PoE Chip	Texas Instruments TPS23861	x 2
Open Frame Power Supply	Power Supply Output: 56V/150W	x 1

3.2 FUNCTION SPECIFICATIONS

Product	GS-4210-8P2S
Hardware Specifications	
Copper Ports	8 x 10/100/1000BASE-T RJ45 Auto-MDI/MDI-X ports
SFP Ports	2 x 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
Console	1 x RS-232-to-RJ45 serial port (115200, 8, N, 1)
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
Dimensions (W x D x H)	280 x 180 x 44 mm, 1U height
Weight	1.6kg
Enclosure	Metal
Power Requirements	AC 100~240V, 50/60Hz, 2.5A, auto-sensing
Power Consumption/ Dissipation	170 watts (max.)/580BTU
ESD Protection	Contact Discharge 6KV DC Air Discharge 8KV DC
Fan	Fanless design
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): 100/1000 LNK/ACT x1 (Green)
Switching Specifications	
Switch Architecture	Store-and-Forward
Switch Fabric	20Gbps/non-blocking
Switch	14.88Mpps

Throughput@64Bytes	
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
Power over Ethernet	
PoE Standard	IEEE 802.3af/802.3at PoE / PSE
PoE Power Supply Type	End-span
PoE Power Output	Per Port 56V DC, 30 watts (max.)
Power Pin Assignment	1/2(-), 3/6(+)
PoE Power Budget	140 watts (max.) @ 25 degrees C 120 watts (max.) @ 50 degrees C
Number of 802.3af PDs	8 units
Number of 802.3at PDs	5 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 Up to 4 sessions
VLAN	IEEE 802.1Q tagged VLAN IEEE 802.1ad Q-in-Q tunneling Voice VLAN Protocol VLAN Private VLAN (Protected port) GVRP Up to 256 VLAN groups, out of 4094 VLAN IDs
Link Aggregation	IEEE 802.3ad LACP/Static Trunk Supports 1 trunk group with 2 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	IPv4 IGMP (v2/v3) Snooping IPv4 IGMP Querier Up to 256 multicast groups
MLD Snooping	IPv6 MLD (v1/v2) Snooping Up to 256 multicast groups

QoS	<p>8 mapping IDs to 8 level priority queues</p> <ul style="list-style-type: none"> - Port number - 802.1p priority - 802.1Q VLAN tag - DSCP field in IP packet <p>Traffic classification based, strict priority and WRR</p>
Ring	Supports ERPS, and complies with ITU-T G.8032
Security Functions	
Access Control List	<p>IPv4/IPv6 IP-based ACL</p> <p>MAC-based ACL</p>
Security	<p>IP-MAC port binding</p> <p>MAC filter</p> <p>Static MAC address</p> <p>DHCP Snooping and DHCP Option82</p> <p>DoS attack prevention</p> <p>ARP inspection</p> <p>IP source guard</p>
AAA	Built-in RADIUS client to co-operate with RADIUS server
Network Access Control	<p>IEEE 802.1X – Port-based authentication</p> <p>RADIUS/TACACS+ user access authentication</p>
Management Functions	
Basic Management Interfaces	<p>RS232 Console</p> <p>Web browser</p> <p>Telnet</p> <p>SNMP v1, v2c</p>
Secure Management Interfaces	SSHv2, TLS v1.2, SNMP v3
System Management	<p>Firmware upgrade by HTTP/TFTP protocol through Ethernet network</p> <p>LLDP protocol</p> <p>SNTP</p> <p>PLANET Smart Discovery Utility</p> <p>PLANET NMS System</p>
Event Management	<p>Remote/Local Syslog</p> <p>System log</p>
SNMP MIBs	<p>RFC 1213 MIB-II</p> <p>RFC 1215 Generic Traps</p> <p>RFC 1493 Bridge MIB</p> <p>RFC 2674 Bridge MIB Extensions</p> <p>RFC 2737 Entity MIB (Version 2)</p> <p>RFC 2819 RMON (1, 2, 3, 9)</p> <p>RFC 2863 Interface Group MIB</p> <p>RFC 3635 Ethernet-like MIB</p> <p>RFC 3621 Power Ethernet MIB</p>
Standards Conformance	

Regulatory Compliance	FCC Part 15 Class A, CE
Standards Compliance	<p>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 ITU G.8032 ERPS Ring</p>
Environment	
Operating	<p>Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 95% (non-condensing)</p>
Storage	<p>Temperature: -20 ~ 70 degrees C Relative Humidity: 5 ~ 95% (non-condensing)</p>

3.3 PHYSICAL SPECIFICATIONS:

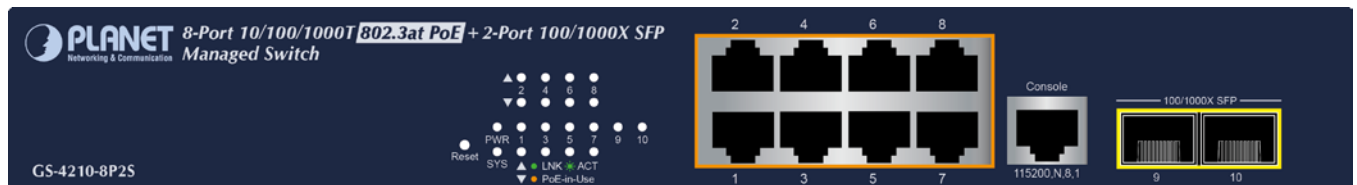
Dimensions:

280 x 180 x 44 mm (W x D x H), 1U height

Weight:

1.6kg

■ **Front Panel:**



■ **Rear Panel:**



■ **LED Definition**

■ **System**

LED	Color	Function
PWR	Green	Lights to indicate that the Switch has power.
SYS	Green	Off to indicate the system is booting. Lights to indicate the system is working.

■ **10/100/1000BASE-T interfaces (Port-1 to Port-8)**

LED	Color	Function
LNK/ACT	Green	Lights: To indicate the link through that port is successfully established. 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 DC in-line power. Off: To indicate the port is not providing DC in-line power.

■ **100/1000BASE-X SFP interfaces (Port-9 to Port-10)**

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

3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: 0°C ~ 50 degrees C

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

Storage:

Temperature: -20°C ~ 70 degrees C

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

3.5 ELECTRICAL SPECIFICATIONS

Model		GS-4210-8P2S
AC Power Input Voltage		100 ~ 240VAC, 50 / 60Hz, auto-sensing.
Power Consumption (System on)	110V	4 watts/13.6BTU
	220V	3.2 watts/10.9BTU
Power Consumption (PoE Full Loading)	110V	165 watts/562BTU
	220V	159 watts/542BTU

3.6 REGULATORY COMPLIANCE

CE FCC Part 15 Class A, CE, LVD

3.7 RELIABILITY

MTBF > 50,000 hrs @ 25 degrees C

3.8 BASIC PACKAGING

- GS-4210-8P2S Switch x 1
- Quick Installation Guide x 1
- RS232 to RJ45 Cable x 1
- Power Cord x 1
- SFP Dust-proof Cap x 2
- Rubber Feet x 4
- Two Rack-mounting Brackets with Attachment Screws x 1

3.9 PACKING INFORMATION

Box Dimensions (W x D x H)	378 x 234 x 82 mm
Weight (gross weight)	2.18kg
Carton Dimensions (W x D x H)	524 x 400 x 264 mm
Carton Weight (total)	15.5kg
Quantity	6pcs in one carton