Product Specifications

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

GS-4210-16P2S

Version 2.0

Change History:

Revision:	Date:	Author:	Change List
Version 2.0	2019/5/24	Marc Liao	Initial Release PoE Chipset Replacement - Microsemi PD69200/PD69208M→ IC Plus IP808
Version 1.0	2017/3/10	Calvin Chao	Initial Release

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1. PRODUCT DESCRIPTION

Designed for Small and Medium Businesses at Affordable Price

PLANET GS-4210-16P2S 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-4210-16P2S is equipped with **16 10/100/1000BASE-T** Gigabit Ethernet ports and 2 **100/1000BASE-X** SFP interfaces with inner power system. Its **16** Gigabit Ethernet ports are 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 is for surveillance, wireless and VoIP networks, the GS-4210-16P2S features the following special PoE management functions:

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

Intelligent Powered Device Alive Check

The GS-4210-16P2S can be configured to monitor connected PD (powered deevice) status in real time via ping action. Once the PD stops working and responding, the GS-4210-16P2S 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-4210-16P2S 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 Saving

Under the trend of energy saving worldwide and contributing to environmental protection, the GS-4210-16P2S 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.

Robust Layer 2 Features

The GS-4210-16P2S can be programmed for advanced switch management functions such as dynamic port link aggregation, 802.1Q VLAN, Spanning Tree Protocol (STP), Rapid Spanning Tree Protocol (RSTP) and Multiple Spanning Tree Protocol (MSTP), IGMP Querier and IGMP Snooping. Via aggregation of supporting ports, the GS-4210-16P2S allows the operation of a high-speed trunk to combine with 2 SFP ports such as a 2Gbps fat pipe and supports fail-over as well. The Link Layer Discovery Protocol (LLDP) feature is also included and used to discover basic information about neighboring devices on the local broadcast domain.

Efficient Traffic Control

The GS-4210-16P2S 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-4210-16P2S is equipped with **console**, **Web**, **Telnet** and **SNMP** management interfaces. With the built-in Web-based management interface, the GS-4210-16P2S 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-4210-16P2S offers secure remote management by supporting **HTTPS** and **SNMPv3** connections which encrypt the packet content at each session.

Powerful Security

PLANET GS-4210-16P2S 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** authentication, which can be deployed with RADIUS to ensure the port level security and block illegal users. The **Port Security** allows limiting the number of users on a given port. The network administrators can now construct highly-secured corporate networks with considerably less time and effort than before.

Flexible Extension Solution

The two mini-GBIC slots built in the GS-4210-16P2S 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) or to 10/20/30/40/50/60/70/120 km (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

2. PRODUCT FEATURES

Physical Port

- **16 10/100/1000BASE-T** Gigabit Ethernet RJ45 ports with **IEEE 802.3at PoE+** Injector function
- **2 100/1000BASE-X** mini-GBIC/SFP slots
- 1 RJ45 console interface for switch basic management and setup

Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus/end-span PSE
- Up to 16 ports of IEEE 802.3af/802.3at devices powered
- Supports PoE Power up to 30.8 watts for each PoE port
- 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
  - 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, up to 256 VLAN groups, out of 4094 VLAN IDs
  - Protocol VLAN
- Supports **Spanning Tree Protocol**
  - IEEE 802.1D Spanning Tree Protocol (STP)
  - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
  - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP), spanning tree by VLAN
  - BPDU Guard
- Supports **Link Aggregation**
  - IEEE 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
- Provides port mirror (many-to-1)

Quality of Service

- Ingress/Egress Rate Limit per port bandwidth control
- Storm Control support
  - Broadcast, unknown unicast, and unknown multicast
- Traffic classification
  - IEEE 802.1p CoS
  - DSCP/IP Precedence of IPv4/IPv6 packets
- Strict priority and Weighted Round Robin (WRR) CoS policies

Multicast

- Supports IGMP snooping v1, v2 and v3
- Supports MLD snooping v1 and v2
- Querier mode support
- IGMP snooping port filtering
- MLD snooping port filtering
- MVR (Multicast VLAN Registration)

Security

- Authentication
  - IEEE 802.1X port-based network access authentication
  - Built-in RADIUS client to cooperate with the RADIUS servers
  - DHCP Option 82
  - RADIUS / TACACS+ login user access authentication
- Access Control List
  - IPv4 IP-based ACL
  - IPv4 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

Management

- Switch Management Interface
  - Console/Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c and v3
  - HTTPs secure access
- Built-in Trivial File Transfer Protocol (TFTP) client
- Static and DHCP for IP address assignment
- System Maintenance
  - Firmware upload / download via HTTP / TFTP
  - Configuration upload / download through HTTP / TFTP
  - Hardware reset button for system reboot or reset to factory default

- SNTP Network Time Protocol
- 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

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Switch ASIC / CPU:	Realtek RTL8382M	X 1
TP Gigabit PHY:	Realtek RTL8218B	X 1
PoE Chipset	IC Plus IP808	X 2
Flash:	16M bytes	X 1
DDR RAM:	128Mbytes	X 1
LED Board Controller	Realtek RTL8231	X1

3.2 FUNCTION SPECIFICATIONS

Product	**GS-4210-16P2S**
Hardware Specifications	
Copper Ports	16 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
SFP/mini-GBIC Slots	2 100/1000BASE-X SFP interfaces, supporting 100/1000Mbps dual mode
PoE Injector Port	16 ports with 802.3af/at PoE injector function
Console	1 RJ45-to-RS232 serial port (115200, 8, N, 1)
Switch Architecture	Store-and-Forward
Switch Fabric	36Gbps / non-blocking
Switch Throughput@64 bytes	26.78Mpps@64 bytes
MAC Address Table	8K entries
Shared Data Buffer	4Mbits
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Jumbo Frame	9K bytes
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
LED	**System:** Power (**Green**) **10/100/1000T RJ45 Interfaces** (Port 1 to Port 16): 1000 LNK / ACT (**Green**), 10/100 LNK/ACT (**Orange**), PoE (**Orange**) 100/1000Mbps SFP Interfaces (Port 17 to Port 18): 1000 LNK / ACT (**Green**), 100 LNK/ACT (**Orange**)
Thermal Fan	2
Power Requirements	100~240V AC, 50/60Hz, 4A (max.)
Power Consumption /	Max. 277 watts / 950BTU

Dissipation	
Dimensions (W x D x H)	445 x 207 x 45 mm (1U height)
Weight	2.8kg
Enclosure	Metal
Power over Ethernet	
PoE Standard	IEEE 802.3at Power over Ethernet Plus / PSE
PoE Power Supply Type	End-span
PoE Power Output	Per Port 53V DC, 30.8 watts (max.)
PoE Power Budget	220 watts (max.)
Number of PDs (7 watts)	16 units
Number of PDs (15.4 watts)	14 units
Number of PDs (30 watts)	7 units
Layer 2 Functions	
Port Mirroring	TX/RX/both Many-to-1 monitor
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 GVRP
Link Aggregation	IEEE 802.3ad LACP supports 8 groups of 16-port trunk Static trunk supports 8 groups of 8-port trunk
Spanning Tree Protocol	IEEE 802.1D STP IEEE 802.1w RSTP IEEE 802.1s MSTP
Multicast	IGMP (v2/v3) snooping IGMP querier Up to 256 multicast groups
Access Control List	IPv4 IP-based ACL MAC-based ACL
QoS	8 mapping ID to 8 level priority queues - Port number - 802.1p priority - 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 MAC filter Static MAC address DHCP Snooping and DHCP Option82 STP BPDU Guard, BPDU Filtering and BPDU Forwarding
Management Functions	
Basic Management Interfaces	Web browser, Telnet, SNMP v1/v2c/v3 and RJ45 Console Firmware upgrade by HTTP / TFTP protocol through Ethernet network Remote / Local Syslog System log LLDP protocol SNTP
Secure Management Interfaces	SSH, SSL, SNMP v3
SNMP MIBs	RFC 3635 Ethernet-like MIB RFC 2863 Interface Group MIB RFC 2819 RMON (1, 2, 3, 9) RFC 1493 Bridge 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 1000BASE-T 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
Environment	
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Storage	Temperature: -10 ~ 70 degrees C Relative Humidity: 5 ~ 95% (non-condensing)

3.3 PHYSICAL SPECIFICATIONS

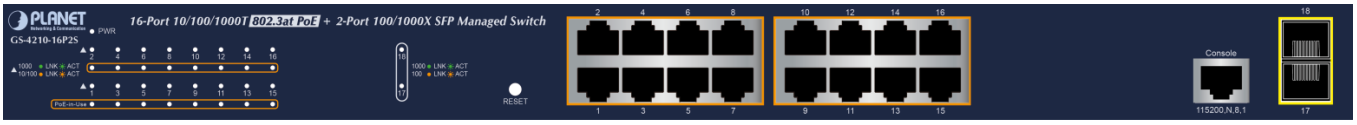
- **Dimensions:**

  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.

- **Per 10/100/1000Mbps RJ45 Interfaces (Port-1 to Port-16)**

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

■ **Per 100/1000Mbps SFP Interface (Port-17 to Port-18)**

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

3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: 0 ~ 50 degrees C

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

Storage:

Temperature: -10 ~ 70 degrees C

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

3.5 ELECTRICAL SPECIFICATIONS

Input Voltage:	100~240V AC, 50/60Hz, 4A (max.)	
Power Consumption (System on):	110V: 20 watts	68.9BTU
	220V: 24 watts	82.3BTU
Power Consumption (Ethernet Full Loading):	110V: 26.7 watts	91.6BTU
	220V: 29.7 watts	101.9BTU
Power Consumption (PoE Full Loading):	110V:275 watts *	943.5BTU
	220V:277.1 watts*	950.3BTU

* With a total PoE power output limited at 220 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-4210-16P2S x 1
- Quick Installation Guide x 1
- Rubber Feet x 4
- Power Cord x 1

- RS-232 to RJ-45 Console Cable x 1
- SFP Dust Cap x 2
- Rack-mount Accessory Kit x 1

3.9 PACKING INFORMATION

Box Dimensions (W x D x H):	555 × 295 × 88 mm
Weight (gross weight):	3.32kg
Carton Dimensions (W x D x H):	572 × 370 × 315 mm
Carton Weight (gross weight):	14.1kg
Quantity:	4pcs in one carton