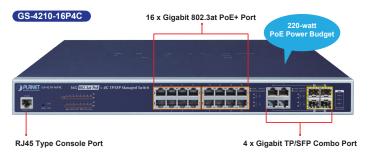


# 16-Port 10/100/1000T 802.3at PoE + 4-Port Gigabit TP/SFP Combo Managed Switch



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

The GS-4210-16P4C is a cost-optimized, Gigabit PoE+ Managed 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 **16 10/100/1000BASE-T** ports featuring **36-watt 802.3at PoE+** and **4 additional Gigabit TP/SFP combo ports**. With a total power budget of up to **220 watts** for different kinds of PoE applications, the GS-4210-16P4C 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-4210-16P4C 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.



#### **Physical Port**

- 20-Port 10/100/1000BASE-T Gigabit RJ45 copper with 16-Port IEEE 802.3at/af PoE Injector (Port-1 to Port-16)
- 4 100/1000BASE-X mini-GBIC/SFP slots, shared with port-17 to port-20 compatible with 100BASE-FX SFP
- RJ45 console interface for switch basic management and setup

#### Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus, endspan PSE
- · Backward compatible with IEEE 802.3af Power over Ethernet
- · Up to 16 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
  - Per port PoE function enable/disable
  - PoE port power feeding priority
  - Per PoE port power limitation
  - PD classification detection
- Intelligent PoE features
  - PD alive check
  - PoE schedule
  - PoE extension

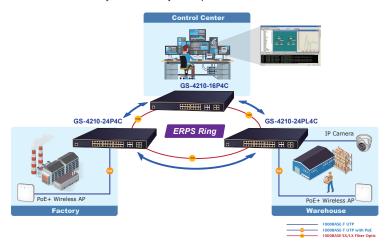
#### Layer 2 Features

- 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



#### Redundant Ring, Fast Recovery for Critical Network Applications

The GS-4210-16P4C 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.



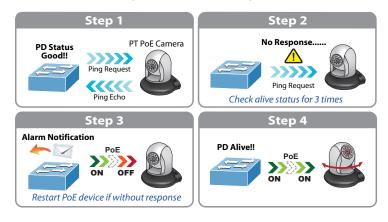
#### Built-in Unique PoE Functions for Powered Devices Management

As it is the managed PoE switch for surveillance, wireless and VoIP networks, the GS-4210-16P4C 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-4210-16P4C 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-4210-16P4C 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.



- 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 2 trunk groups, up to 4 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 policie

#### 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 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
- DHCP Snooping to filter distrusted DHCP messages
- Dynamic ARP Inspection discards ARP packets with invalid
   MAC address to IP address binding



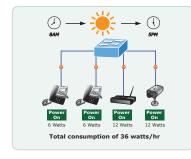
#### Scheduled Power Recycling

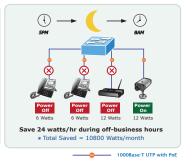
The GS-4210-16P4C allows each of the connected PoE IP cameras or PoE wireless access points to reboot at a specified time each week. Therefore, it will reduce the chance of IP camera or AP crash resulting from buffer overflow.



#### PoE Schedule for Energy Savings

Under the trend of energy savings worldwide and contributing to environmental protection, the GS-4210-16P4C 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-4210-16P4C 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

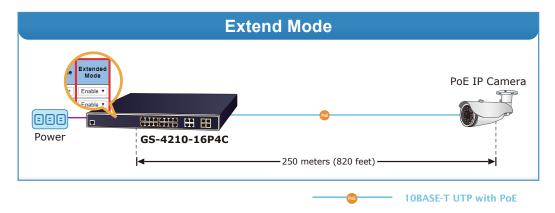
In the "Extend" operation mode, the GS-4210-16P4C operates on a per-port basis at 10Mbps duplex operation but can support 36-watt PoE power output over a distance of up to 250 meters overcoming the 100m limit on Ethernet UTP cable. With this brand-new feature, the GS-4210-16P4C provides an additional solution for 802.3at/af PoE distance extension, thus saving the cost of Ethernet cable installation.

- · 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 SNMPv3 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
  - SFP-DDM (Digital Diagnostic Monitor)
- Link Layer Discovery Protocol (LLDP) Protocol and LLDP-MED
- · Event message logging to remote Syslog server
- Smart fan with speed control
- · PLANET Smart Discovery Utility for deployment management
- PLANET NMS system for deployment management



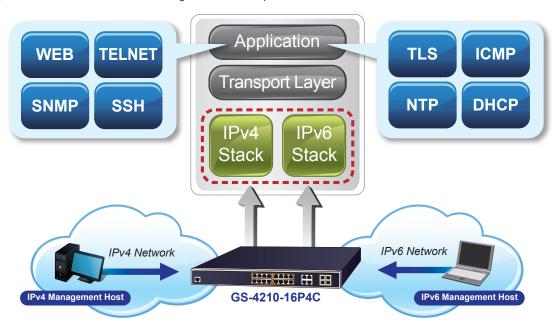


#### Environmentally-friendly, Smart Fan Design for Silent Operation

The GS-4210-16P4C 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-4210-16P4C 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-4210-16P4C 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-4210-16P4C 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-4210-16P4C 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-4210-16P4C 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-4210-16P4C 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-4210-16P4C is equipped with web, Telnet and SNMP management interfaces.

- With the built-in **Web-based** management interface, the GS-4210-16P4C offers an easy-to-use, platform-independent management and configuration facility.
- For text-based management, the switch can be accessed via Telnet and the console port.
- By supporting the standard SNMP, the switch can be managed via any standard management software

Moreover, the GS-4210-16P4C 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 GS-4210-16P4C provides 4 extra Gigabit TP interfaces supporting 10/100/1000BASE-T RJ45 copper to connect with surveillance network devices such as NVR, Video Streaming Server or NAS to facilitate surveillance management. Or through these **dual-speed fiber SFP slots**, it can also connect with the **100BASE-FX/1000BASE-SX/LX SFP** (Small Form-factor Pluggable) fiber transceiver 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-4210-16P4C 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.

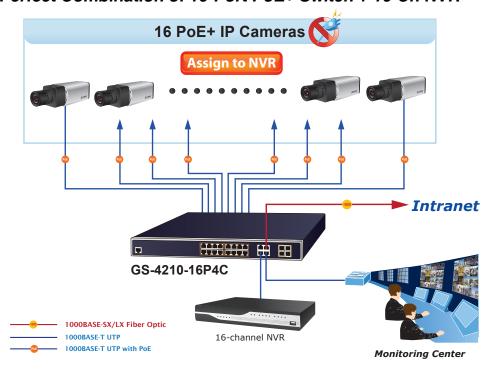


# **Applications**

#### High Scalability and Best Security for Today's IP Networking and Cyber Security Solution

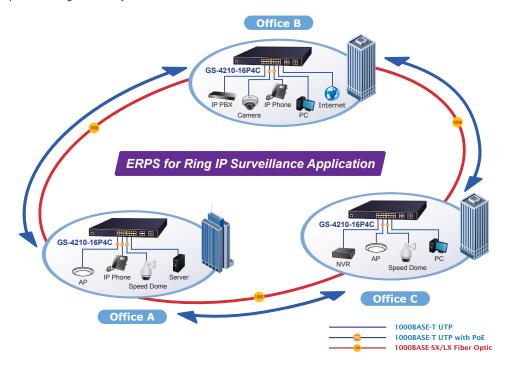
The GS-4210-16P4C comes with non-blocking design and SFP fiber-optic modules, bringing network infrastructure higher flexibility but lower in cost. Providing sixteen 10/100/1000BASE-T PoE ports and four Gigabit TP/SFP combo ports, the GS-4210-16P4C can easily build a networking security on the cyber security system for the enterprises. For instance, it can work with the router and UTM to perform comprehensive security for today's businesses.

#### Perfect Combination of 16-Port PoE+ Switch + 16-Ch NVR



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

The GS-4210-16P4C 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-4210-16P4C can directly connect with any IEEE 802.3at end-nodes like PTZ (Pan, Tilt & Zoom) network cameras and speed dome cameras. The GS-4210-16P4C can easily build a power that can centrally control a wireless AP/IP camera/VoIP system for SMBs and workgroups in the enterprises with high availability network infrastructure.





# **Specifications**

Product   Schedulinations   Copper Ports   20 x 10/10/01/00/03/85-T. FLAG Auth-ADM/NDLX ports   20 x 10/10/01/03/85-T. FLAG Auth-ADM/NDLX ports   20 x 10/10/01/03/85-T. FLAG Auth-ADM/NDLX ports   20 x 10/10/03/85-T. FLAG Auth-ADM/NDLX ports   20 x 10/10/10/85-T. FLAG Auth-ADM/NDLX ports   20 x 10/10/85-T. FLAG A	opcomodiono	
Dispose   Portis   20 to 1/10/01/0000RASE   7.8145 Auto-MOLMINIX ports	Product	GS-4210-16P4C
SPPminII-OBIC Slote	Hardware Specifications	
SPP	Copper Ports	20 x 10/100/1000BASE-T RJ45 Auto-MDI/MDI-X ports
No.   Proc.   Proc.	SEP/mini-GRIC Slots	4 x 100/1000BASE-X SFP interfaces with Port-17 to Port-20.
Seet Button   1 x R5 - 222 - 10 - R4 - 15 enterl port (115200, 8, N, 1)	of think oblocious	Supports 100/1000Mbps dual mode and DDM
Security   Security	PoE Injector Port	
Meset stution	Console	
Sec. Factory default	Reset Button	< 5 sec: System reboot
Mesil		
Contact Discharge AKV DC   Art Discharge AK	,	
Marchitecture	Weight	
Power Consumption / Dissipation   288 wats (max.)982 BTU	ESD Protection	
Power Consumption / Dissipation   288 watts (max y 982 BTU	Enclosure	Metal
	Power Requirements	AC 100~240V, 50/60Hz, auto-sensing
System:	Power Consumption / Dissipation	288 watts (max.)/982 BTU
PWR x1(Green)   SYS x1 (Green)   SYS x1 (Green)   Per PoE Port (Port 1 to Port 16):   LIKLACT x1 (Green)   PDE-in-use x1 (Green)   1000 LIKLACT x1 (Green)   1000 LIKLACT x1 (Green)   10100 LIKLACT x1 (Green)   1000 LIKLA	Fan	3 smart fans
Switch Architecture         Store-and-Forward           Switch Tabric         400bps/non-blocking           Switch Troughput@64Bytes         29 76Mpps           Address Table         8K entries           Shared Data Buffer         4.1 megabits           Flow Control         BEEE 80.2 xx pause frame for full duplex           Back pressure for half duplex           Jumbo Frame         10K bytes           Power over Ethernet         Power over Ethernet           POE Power Supply Type         End-span           PoE Power Output         Per Port 54V DC, 36 watts (max.)           PoE Power Budget         12(*), 36(*)           Number of 802.3af PDs         16 units           Number of 802.3af PDs         16 units           Number of 802.3af PDs         6 units           Number of 802.3af PDs         9b Alive Check           Scheduled Power Recycling         PoE Schedule           PoE Edward         PoE Schedule           PoE Usage Monitoring         PoE Extension           PoE Lage Wonitoring         PoE Extension           Amany-to-1 monitor         Up to 4 sessions           VLAN         Many-to-1 monitor           Up to 26 VLAN groups, out of 4094 VLAN IDs           Wolce VLAN         Protocol VLAN <td>LED</td> <td>PWR x1(Green) SYS x1 (Green) Per PoE Port (Port 1 to Port 16): LNK/ACT x1 (Green) PoE-in-use x1 (Orange) Per Gigabit RJ45 Port (Port 17 to Port 20): 1000 LNK/ACT x1 (Green) 10/100 LNK/ACT x1 (Orange) Per Gigabit SFP Port (Port 17 to Port 20): 1000 LNK/ACT x1 (Green)</td>	LED	PWR x1(Green) SYS x1 (Green) Per PoE Port (Port 1 to Port 16): LNK/ACT x1 (Green) PoE-in-use x1 (Orange) Per Gigabit RJ45 Port (Port 17 to Port 20): 1000 LNK/ACT x1 (Green) 10/100 LNK/ACT x1 (Orange) Per Gigabit SFP Port (Port 17 to Port 20): 1000 LNK/ACT x1 (Green)
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Switch Fabric         40Gbps/non-blocking           Switch Throughput@64Bytes         29.76Mpps           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 Ethornet         IEEE 802.3at/802.3at PoE/PSE           PoE Power Supply Type         End-span           PoE Power Supply Type         End-span           PoE Power Dutput         Per Port 54V DC, 36 watts (max.)           Power Pin Assignment         1/2(+), 3/6(-)           Power Budget         220 watts (max.) @ 25 degrees C           Number of 802.3af PDs         16 units           Number of 802.3at PDs         8 units           PoE Management         PoE Scheduled Power Recycling           PoE Exheritions         PoE Scheduled Power Recycling           PoE I Manage Monitoring PoE Extension         PoE Extension           Layer 2 Functions         TX/RX/both           Wanny-to-1 monitor         Up to 2 sessions           VLAN         400.2 kLAN groups, out of 4094 VLAN IDs           802.1ad Q-in-Q tunneling         Voice VLAN           P		Store-and-Forward
Switch Throughput@64Bytes         29.76Mpps           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         Power over Ethernet           POE Standard         IEEE 802.3af/802.3at POE/PSE           PoE Power Supply Type         End-span           PoE Power Output         Per Port 54V DC, 36 watts (max.)           Power Pin Assignment         1/2(+), 3/6(-)           Power Pin Assignment         1/2(+), 3/6(-)           Number of 802.3af PDs         16 units           Number of 802.3at PDs         8 units           Number of 802.3at PDs         8 units           PoE Management         PoE Scheduled Power Recycling           PoE Scheduled Power Recycling         PoE Schedule           PoE United Schedules         PoE Schedule           PoE United Schedules         PoE Schedule           PoE United Schedules         PoE Schedules           P		
Address Table         8K entries           Shared Data Buffer         4.1 megabits           IEEE 802.3x pause frame for full duplex           Back pressure for half duplex           Jumbo Frame         10K bytes           Power over Ethenet         10EEE 802.3af/802.3at POE/PSE           PoE Standard         IEEE 802.3af/802.3at POE/PSE           PoE Power Supply Type         End-span           PoE Power Output         Per Port 54V DC, 36 watts (max.)           Power Pin Assignment         1/2(+), 3/6(-)           PoE Power Budget         220 watts (max.) @ 25 degrees C           Number of 802.3af PDs         16 units           Number of 802.3af PDs         16 units           PoE Management         Po E Scheduled Power Recycling           PoE Scheduled Power Recycling         PoE Schedule Poe Extension           Layer 2 Functions         TX/RX/both           Port Mirroring         Many-to-1 monitor           Up to 4 sessions           VLAN         802.1at Q-in-Q tunnelling           VLAN         Protocol VLAN           Protocol VLAN         Protocol VLAN           Protocol VLAN         Private VLAN (Protected port)		
IEEE 802.3x pause frame for full duplex Back pressure for half duplex along the pres		**
Back pressure for half duplex	Shared Data Buffer	4.1 megabits
Back pressure for half duplex	Fly Octivity	IEEE 802.3x pause frame for full duplex
Power over Ethernet         IEEE 802.3af/802.3at PoE/PSE           PoE Standard         IEEE 802.3af/802.3at PoE/PSE           PoE Power Supply Type         End-span           PoE Power Output         Per Port 54V DC, 36 watts (max.)           Power Pin Assignment         1/2(+), 3/6(-)           Power Budget         220 watts (max.) @ 25 degrees C           190 watts (max.) @ 50 degrees C           Number of 802.3af PDs         8 units           Number of 802.3at PDs         8 units           PD Alive Check Scheduled Power Recycling         Scheduled Power Recycling           PoE Schedule PoE Usage Monitoring PoE Extension         PoE Extension           Layer 2 Functions         TX/RX/both           Many-ho-1 monitor Up to 4 sessions         Many-ho-1 monitor           Up to 4 sessions         802.10 tag-based VLAN           VLAN         Up to 256 VLAN groups, out of 4094 VLAN IDS           802.1ad O-In-Q tunneling           VLAN         Protocol VLAN           Private VLAN (Protected port)	Flow Control	Back pressure for half duplex
POE Standard         IEEE 802.3afi/802.3at PoE/PSE           PoE Power Supply Type         End-span           PoE Power Output         Per Port 54V DC, 36 watts (max.)           Power Pin Assignment         1/2(+), 3/6(-)           PoE Power Budget         220 watts (max.) @ 25 degrees C           190 watts (max.) @ 50 degrees C           Number of 802.3af PDs         16 units           Number of 802.3at PDs         8 units           PD Alive Check Scheduled Power Recycling         PoE Schedule PoE Usage Monitoring PoE Extension           Layer 2 Functions         TX/RX/both Many-to-1 monitor Up to 4 sessions           Port Mirroring         Many-to-1 monitor Up to 4 sessions           VLAN         400 year Recycling PoE Schedule           VLAN         400 year Recycling PoE Extension           Layer 2 Functions         TX/RX/both Many-to-1 monitor Up to 4 sessions           VLAN         400 year Recycling PoE Extension           VLAN         400 year Recycling PoE Extension           Layer 2 Functions         TX/RX/both Many-to-1 monitor Up to 4 sessions           VLAN         400 year Recycling PoE Extension           VLAN         400 year Recycling PoE Extension           Layer 2 Functions         TX/RX/both Many-to-1 monitor Up to 256 VLAN groups, out of 4094 VLAN IDs Rockling Type Poet School Recycling	Jumbo Frame	10K bytes
PoE Power Supply Type         End-span           PoE Power Output         Per Port 54V DC, 36 watts (max.)           Power Pin Assignment         1/2(+), 3/6(-)           PoE Power Budget         220 watts (max.) @ 25 degrees C           190 watts (max.) @ 50 degrees C           Number of 802.3af PDs         16 units           Number of 802.3at PDs         8 units           PD Alive Check Scheduled Power Recycling         Scheduled Power Recycling           PoE Usage Monitoring PoE Extension         PoE Schedule           PoE Lysage Monitoring PoE Extension         PoE Schedule           Port Mirroring         Many-to-1 monitor           Up to 4 sessions         4 sessions           VLAN         40 to 256 VLAN groups, out of 4094 VLAN IDs           802.1Q tag -in-Q tunneling         802.1Q d-in-Q tunneling           VLAN         Protocol VLAN           Protocol VLAN         Protocol VLAN           Private VLAN (Protected port)         Private VLAN (Protected port)	Power over Ethernet	
PoE Power Output         Per Port 54V DC, 36 watts (max.)           Power Pin Assignment         1/2(+), 3/6(-)           PoE Power Budget         220 watts (max.) @ 25 degrees C           190 watts (max.) @ 50 degrees C           Number of 802.3af PDs         16 units           Number of 802.3at PDs         8 units           PD Alive Check Scheduled Power Recycling         POE Schedule POE Usage Monitoring PoE Extension           Layer 2 Functions         TX//RX/both Many-to-1 monitor           Port Mirroring         Many-to-1 monitor Up to 4 sessions           802.1Q tag-based VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs 802.1ad Q-in-Q tunneling           VLAN Protocol VLAN Protocol VLAN Private VLAN (Protected port)	PoE Standard	IEEE 802.3af/802.3at PoE/PSE
Power Pin Assignment         1/2(+), 3/6(-)           PoE Power Budget         220 watts (max.) @ 25 degrees C           Number of 802.3af PDs         16 units           Number of 802.3at PDs         8 units           PD Alive Check         Scheduled Power Recycling           Scheduled Power Recycling         PoE Schedule PoE Usage Monitoring PoE Extension           Layer 2 Functions           TX/RX/both Many-to-1 monitor Up to 4 sessions           Wany-to-1 monitor Up to 4 sessions         802.1Q tag-based VLAN           Up to 256 VLAN groups, out of 4094 VLAN IDs         802.1ad Q-in-Q tunneling           VLAN Protocol VLAN Private VLAN (Protected port)	PoE Power Supply Type	End-span
PoE Power Budget         220 watts (max.) @ 25 degrees C           190 watts (max.) @ 50 degrees C           Number of 802.3af PDs         16 units           Number of 802.3at PDs         8 units           PoE Management         PD Alive Check Scheduled Power Recycling           PoE Usage Monitoring PoE Usage Monitoring PoE Extension         PoE Schedule PoE Usage Monitoring PoE Extension           Layer 2 Functions         TX/RX/both Many-to-1 monitor Up to 4 sessions           WI Mirroring         802.1d tag-based VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs 802.1ad Q-in-Q tunneling           VLAN         Voice VLAN Protocol VLAN Protocol VLAN Private VLAN (Protected port)	·	
PoE Power Budget  190 watts (max.) @ 50 degrees C  Number of 802.3af PDs  16 units  Number of 802.3at PDs  8 units  PD Alive Check Scheduled Power Recycling PoE Schedule PoE Usage Monitoring PoE Extension  Layer 2 Functions  TX/RX/both Many-to-1 monitor Up to 4 sessions  802.1Q tag-based VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs 802.1ad Q-in-Q tunneling VLAN Protocol VLAN Protocol VLAN Private VLAN (Protected port)	Power Pin Assignment	
Number of 802.3af PDs 16 units  Number of 802.3af PDs 8 units  PD Alive Check Scheduled Power Recycling  PoE Management PoE Schedule PoE Usage Monitoring PoE Extension  Layer 2 Functions  TX/RX/both Many-to-1 monitor Up to 4 sessions  802.1Q tag-based VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs 802.1ad Q-in-Q tunneling  VLAN Protocol VLAN Protocol VLAN Protocol VLAN Private VLAN (Protected port)	PoE Power Budget	, , , , ,
Number of 802.3at PDs  B units  PD Alive Check Scheduled Power Recycling PoE Schedule PoE Usage Monitoring PoE Extension   TX/RX/both Many-to-1 monitor Up to 4 sessions  802.1Q tag-based VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs 802.1ad Q-in-Q tunneling VLAN Protocol VLAN Protocol VLAN Protocol VLAN Private VLAN (Protected port)	ŭ .	
PD Alive Check Scheduled Power Recycling PoE Schedule PoE Usage Monitoring PoE Extension  Layer 2 Functions  TX/RX/both Many-to-1 monitor Up to 4 sessions  802.1Q tag-based VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs 802.1ad Q-in-Q tunneling VIAN Protocol VLAN Protocol VLAN Private VLAN (Protected port)		
Layer 2 Functions  TX/RX/both  Many-to-1 monitor Up to 4 sessions  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)		PD Alive Check Scheduled Power Recycling PoE Schedule PoE Usage Monitoring
TX/RX/both Port Mirroring  Many-to-1 monitor Up to 4 sessions  802.1Q tag-based VLAN Up to 256 VLAN groups, out of 4094 VLAN IDs 802.1ad Q-in-Q tunneling  VLAN  Voice VLAN Protocol VLAN Private VLAN (Protected port)	Layer 2 Functions	
Up to 256 VLAN groups, out of 4094 VLAN IDs 802.1ad Q-in-Q tunneling VLAN Voice VLAN Protocol VLAN Private VLAN (Protected port)		Many-to-1 monitor
	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)



	IEEE 802.3ad LACP/Static Trunk
Link Aggregation	Supports 2 trunk groups with 4 ports per trunk
	STP, IEEE 802.1D Spanning Tree Protocol
Consider Total Postanti	RSTP, IEEE 802.1w Rapid Spanning Tree Protocol
Spanning Tree Protocol	MSTP, IEEE 802.1s Multiple Spanning Tree Protocol
	STP BPDU Guard, BPDU Filtering and BPDU Forwarding
	IPv4 IGMP (v2/v3) Snooping
IGMP Snooping	IPv4 IGMP Querier
	Up to 256 multicast groups
MLD Snooping	IPv6 MLD (v1/v2) Snooping, up to 256 multicast groups
	8 mapping ID to 8 level priority queues
	- Port number
QoS	- 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	ID 4//D 0/D4
Access Control List	IPv4/IPv6 IP-based ACL/MAC-based ACL
Port Coourity	IEEE 802.1X – Port-based authentication
Port Security	Built-in RADIUS client to co-operate with RADIUS server  RADIUS/TACACS+ user access authentication
	IP-MAC port binding
MAC Security	MAC filter
WAC Security	Static MAC address
	DHCP Snooping and DHCP Option82
	STP BPDU guard, BPDU filtering and BPDU forwarding
Enhanced Security	DoS attack prevention
	ARP inspection
	IP source guard
Management Functions	
	RS232 to RJ45 Console
Dagia Managament Interfaces	Web browser
Basic Management Interfaces	Telnet
	SNMP v1, v2c
Secure Management Interfaces	SSHv2, TLS v1.2, SNMPv3
	Firmware upgrade by HTTP/TFTP protocol through Ethernet network
	Remote/Local Syslog
	System log
System Management	LLDP protocol
	SNTP
	PLANET Smart Discovery Utility
	PLANET NMS System
	RFC 1213 MIB-II
	RFC 1215 Generic Traps
	RFC 1493 Bridge MIB
	RFC 2674 Bridge MIB Extensions
SNMP MIBs	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	IN C 30211 OWEL PRINCE INID
Regulatory Compliance	FCC Part 15 Class A, CE
regulatory Compliance	I OU I AIL ID CIASS A, OL



	IEEE 802.3 10BASE-T	IEEE 802.3at Power over Ethernet Plus				
	IEEE 802.3u 100BASE-TX/100BASE-FX	IEEE 802.3az Energy Efficient Ethernet (EEE)				
	IEEE 802.3z Gigabit SX/LX	RFC 768 UDP				
	IEEE 802.3ab Gigabit 1000T	RFC 793 TFTP				
	IEEE 802.3x flow control and back pressure	RFC 791 IP				
	IEEE 802.3ad port trunk with LACP	RFC 792 ICMP				
Standarda Camplianas	IEEE 802.1D Spanning Tree protocol	RFC 2068 HTTP				
Standards Compliance	IEEE 802.1w Rapid Spanning Tree protocol	RFC 1112 IGMP version 1				
	IEEE 802.1s Multiple Spanning Tree protocol	RFC 2236 IGMP version 2				
	IEEE 802.1p Class of Service	RFC 3376 IGMP version 3				
	IEEE 802.1Q VLAN tagging	RFC 2710 MLD version 1				
	IEEE 802.1x Port Authentication Network Control	RFC 3810 MLD version 2				
	IEEE 802.1ab LLDP	ITU G.8032 ERPS Ring				
	IEEE 802.3af Power over Ethernet					
Environment						
Operating	Temperature: 0 ~ 50 degrees C					
Operating	Relative Humidity: 5 ~ 95% (non-condensing)					
Storago	Temperature: -20 ~ 70 degrees C					
Storage	Relative Humidity: 5 ~ 95% (non-condensing)					

# **Ordering Information**

GS-4210-16P4C	16-Port 10/100/1000T 802.3at PoE + 4-Port Gigabit TP/SFP Combo Managed Switch
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## Related PoE Products

GS-4210-24PL4C	24-Port 10/100/1000T 802.3at PoE + 4-Port Gigabit TP/SFP Combo Managed Switch – 440W
GS-4210-24P4C	24-Port 10/100/1000T 802.3at PoE + 4-Port Gigabit TP/SFP Combo Managed Switch – 220W
GS-4210-16P2S	16-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Managed Switch
GS-4210-8P2T2S	8-Port 10/100/1000T 802.3at PoE + 2-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch
GS-4210-8P2S	8-Port 10/100/1000T 802.3at PoE + 2-Port 100/1000X SFP Managed Switch
GS-4210-8T2S	8-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch
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-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)	TES	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)	TES	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)	TES	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	150	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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