

Product Specifications

24-Port 10/100/1000T + 2-Port 100/1000X SFP Managed Switch

GS-4210-24T2S

Version 2.0

This document contains confidential proprietary information and is property of PLANET. The contents of this document should not be disclosed to unauthorized persons without the written consent of PLANET.

Change History:

Revision:	Date:	Author:	Change List
Version 2.0	2016/9/20	Marc Liao	Initial Release - New firmware SDK release. - Hardware lightning Prevention Supports SSH
Version 1.0	2015/3/2	Marc Liao	Initial Release

Author:	Marc Liao	Editor:	Marc Liao
Reviewed By:		Approved By:	Kent Kang

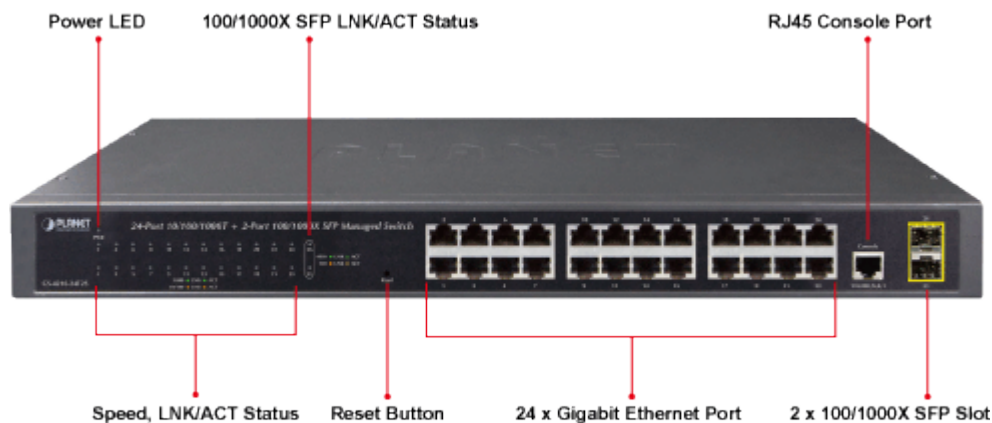
1. PRODUCT DESCRIPTION



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

PLANET GS-4210-24T2S is an ideal Gigabit 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**. Besides the popular IPv6/IPv4 management and abundant L2/L4 switching functions, the GS-4210-24T2S comes with fanless feature and green technology to provide a quiet, energy-saving, high-speed and reliable office network environment.

The GS-4210-24T2S is equipped with **24 10/100/1000BASE-T** Gigabit Ethernet ports and **2 additional 100/1000BASE-X SFP** interfaces with inner power system. It offers a rack-mountable, affordable, safe and reliable Gigabit network switch solution for SMBs deploying networks, or requiring enhanced data security and network traffic management.



IPv6/IPv4 Dual Stack

Supporting both IPv6 and IPv4 protocols, the GS-4210-24T2S 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-4210-24T2S 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-4210-24T2S allows the operation of a high-speed trunk to combine with multiple ports such as a 16Gbps 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-4210-24T2S 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 advantage of the limited network resources.

Enhanced and Secure Management

For efficient management, the GS-4210-24T2S is equipped with **console**, **web**, **telnet** and **SNMP** management interfaces. With the built-in web-based management interface, the GS-4210-24T2S 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-4210-24T2S offers secure remote management by supporting **SSH**, **HTTPS** and **SNMPv3** connections which encrypt the packet content at each session.

Powerful Security

PLANET GS-4210-24T2S 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** 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 limiting the number of network devices on a given port.

Advanced Network Security

The GS-4210-24T2S 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-4210-24T2S 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.

Fanless Design

Adopting the latest chip process and green technology, the GS-4210-24T2S successfully reduces substantial power consumption with the fanless and noiseless design collocating with the effective cooler. Therefore, the GS-4210-24T2S is able to operate stably and quietly in any environment without affecting its performance.



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

▶ **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

▶ **Layer 2 Features**

- 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 8 trunk groups, up to 8 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+ 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

- 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
- 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

Switch ASIC:	Realtek RTL8382M x1
Gigabit Ethernet PHY:	Realtek RTL8218B x2
CPU	MIPS 4Kec 500MHz (Embedded)
Flash	16 Mbytes
DDR RAM	128M bytes

3.2 FUNCTION SPECIFICATIONS

Product	GS-4210-24T2S
Hardware Specifications	
Hardware Version	2
Copper Ports	24 x 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
Console	1 x RS232-to-RJ45 serial port (115200, 8, N, 1)
Reset Button	> 5 sec: Factory default
Switch Architecture	Store-and-Forward
Switch Fabric	52Gbps/non-blocking
Switch Throughput@64 bytes	38.6Mpps @64 bytes
MAC 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	9216 bytes
LED	System: Power (Green) 10/100/1000T RJ45 Interfaces (Port 1 to Port 24): 1000 LNK/ACT (Green), 10/100 LNK/ACT (Orange) 100/1000Mbps SFP Interfaces (Port 25 to Port 26): 1000 LNK/ACT (Green), 100 LNK/ACT (Orange)
ESD Protection	Yes
Enclosure	Metal
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

	<p>802.1ad Q-in-Q tunneling (VLAN stacking)</p> <p>Voice VLAN</p> <p>Protocol VLAN</p> <p>Private VLAN (Protected port)</p> <p>GVRP</p> <p>Management VLAN</p>
Link Aggregation	<p>IEEE 802.3ad LACP and static trunk</p> <p>Supports 8 groups of 8-port trunk</p>
Spanning Tree Protocol	<p>IEEE 802.1D Spanning Tree Protocol (STP)</p> <p>IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)</p> <p>IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)</p> <p>STP BPDU Guard, BPDU Filtering and BPDU Forwarding</p>
IGMP Snooping	<p>IPv4 IGMP (v2/v3) snooping</p> <p>IGMP querier</p> <p>Up to 256 multicast groups</p>
MLD Snooping	<p>IPv6 MLD (v1/v2) snooping, up to 256 multicast groups</p>
Access Control List	<p>IPv4/IPv6 IP-based ACL/MAC-based ACL</p> <p>IPv4/IPv6 IP-based ACE/MAC-based ACE</p>
QoS	<p>8 mapping IDs to 8 level priority queues</p> <ul style="list-style-type: none"> - Port number - 802.1p priority - DSCP/IP precedence of IPv4/IPv6 packets <p>Traffic classification based, strict priority and WRR</p> <p>Ingress/Egress Rate Limit per port bandwidth control</p>
Security	<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> <ul style="list-style-type: none"> - Broadcast/unknown unicast/unknown multicast
Management Functions	
Basic Management Interfaces	<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>
Secure Management Interfaces	<p>HTTPs, SNMP v3</p>
SNMP MIBs	<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>
Standards Conformance	
Standards Compliance	<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 1000BASE-T</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>RFC 768 UDP</p> <p>RFC 793 TFTP</p> <p>RFC 791 IP</p> <p>RFC 792 ICMP</p> <p>RFC 2068 HTTP</p> <p>RFC 1112 IGMP version 1</p> <p>RFC 2236 IGMP version 2</p> <p>RFC 3376 IGMP version 3</p> <p>RFC 2710 MLD version 1</p> <p>RFC 3810 MLD version 2</p>

3.3 PHYSICAL SPECIFICATIONS:

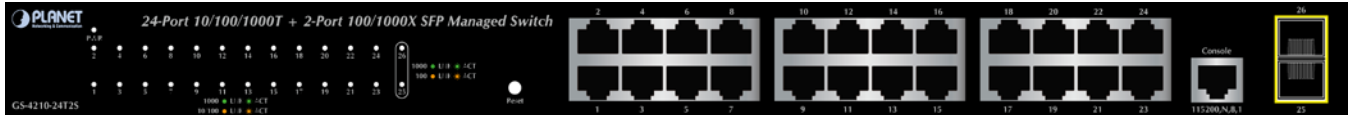
■ **Dimensions:**

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

■ **Weight:**

2.1kg

■ **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.

■ **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 ~ 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, 0.8A (max.)	
Power Consumption (System on):	110V: 4 watts	13BTU
	220V: 4.6 watts	15BTU
Power Consumption (Ethernet Full Load):	110V: 13.6 watts	46BTU
	220V: 14 watts	47BTU

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-4210-24T2S x 1
- Quick Installation Guide x 1
- RS-232 to RJ45 Console Cable x 1
- Rubber Feet x 4
- Rack-mount Accessory Kit x 1
- Power Cord x 1
- SFP Dust Cap x 2

3.9 PACKING INFORMATION

Box Dimensions: 555 (W) x 295 (D) x 88 mm (H)
Carton Dimensions: 580 (W) x 395 (D) x 325 mm (H)
Total Weight : TBD (gross weight)
 4pcs in one carton