Product Specifications

L2+ 24-Port 10/100/1000T 802.3at PoE + 4-Port 10G SFP+ Managed Switch
with LCD Touch Screen (400W)

GS-5220-24P4XV

GS-5220-24P4XVR

Version 1.0

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Change History:

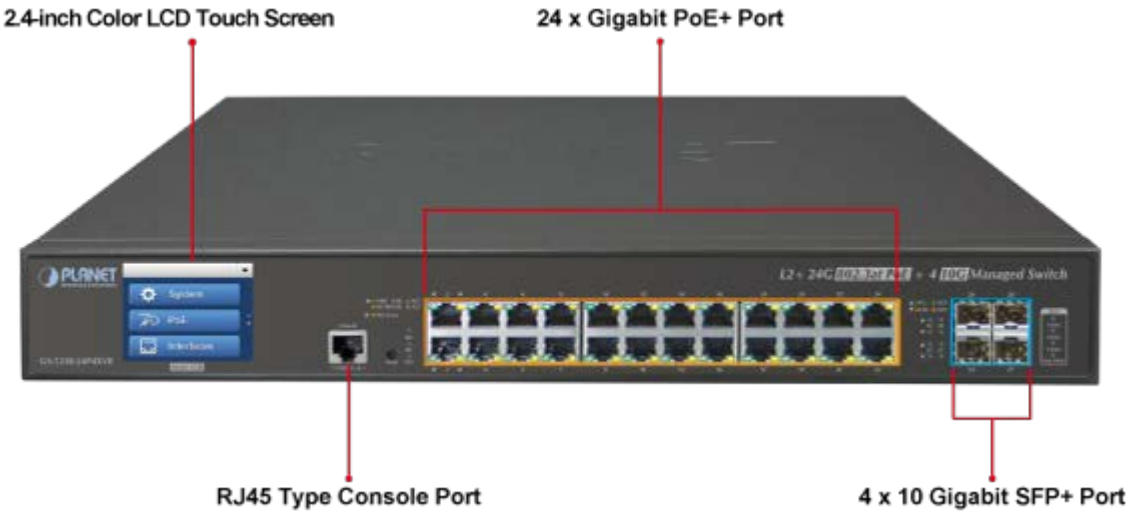
Revision:	Date:	Author:	Change List
Version 1.0	09/June/2017	Neo Tsai	Initial Release

Author:	Neo Tsai	**Editor:**	Kent Kang
Reviewed by:		**Approved by:**	Kent Kang

1. PRODUCT DESCRIPTION

Amazing PoE+ Managed Switches with Advanced L2+/L4 Switching and Security

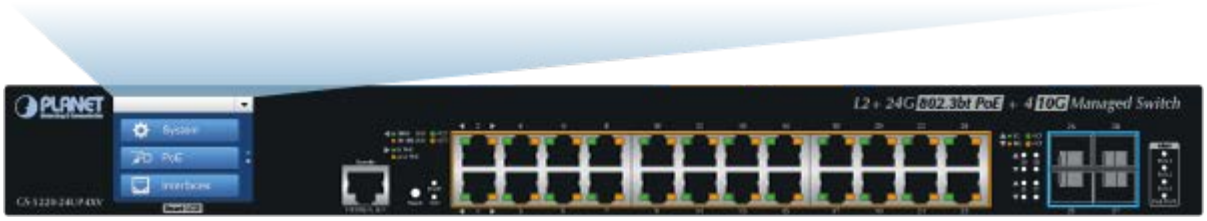
PLANET GS-5220-24P4XV and GS-5220-24P4XVR are cost-optimized, **1.25U**, Gigabit PoE+ Managed Switches with **LCD Touch Screen** featuring PLANET **intelligent PoE** functions to improve the availability of critical business applications. They provide IPv6/IPv4 dual stack management and built-in L2+/L4 Gigabit switching engine along with **24 10/100/1000BASE-T** ports featuring **36-watt PoE+ and 4 additional 10Gigabit SFP+ ports**. With a total power budget of up to 400 watts for different kinds of PoE applications, the GS-5220-24P4XV and GS-5220-24P4XVR provide a quick, safe and cost-effective PoE+ network solution for small businesses and enterprises.



Smart and Intuitive LCD Control

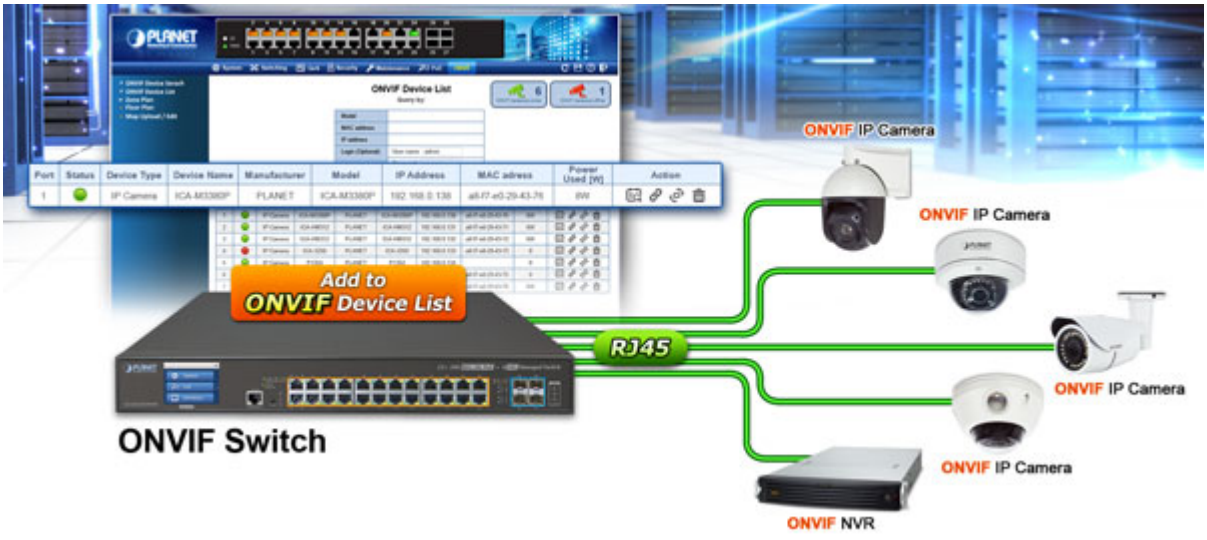
PLANET unique **Smart LCD PoE Switches** provide an intuitive touch panel on their front panels that facilitate the Ethernet PoE PD management that greatly promotes management efficiency in large-scale network, such as enterprises, hotels, shopping malls, government buildings, and other public areas. They also feature the following special management and status functions:

- IP address, VLAN and QoS configuration
- PoE management and status
- Port management and status, and SFP information
- Troubleshooting: cable diagnostic and remote IP ping
- Maintenance: reboot, factory default and save configuration



Convenient and Smart ONVIF Devices with Detection Feature

PLANET has newly developed an awesome feature -- ONVIF Support -- which is specifically designed for co-operating with Video IP Surveillances. From the GS-5220-24P4XV and GS-5220-24P4XVR GUI, clients just need one click to search and show all of the ONVIF devices via network application. In addition, clients can upload floor images into switch and they allow for deploying location of surveillance devices for easier inspection and planning. Moreover, clients can get real-time surveillance's information and online/offline status, and they also allow PoE reboot control from GUI.



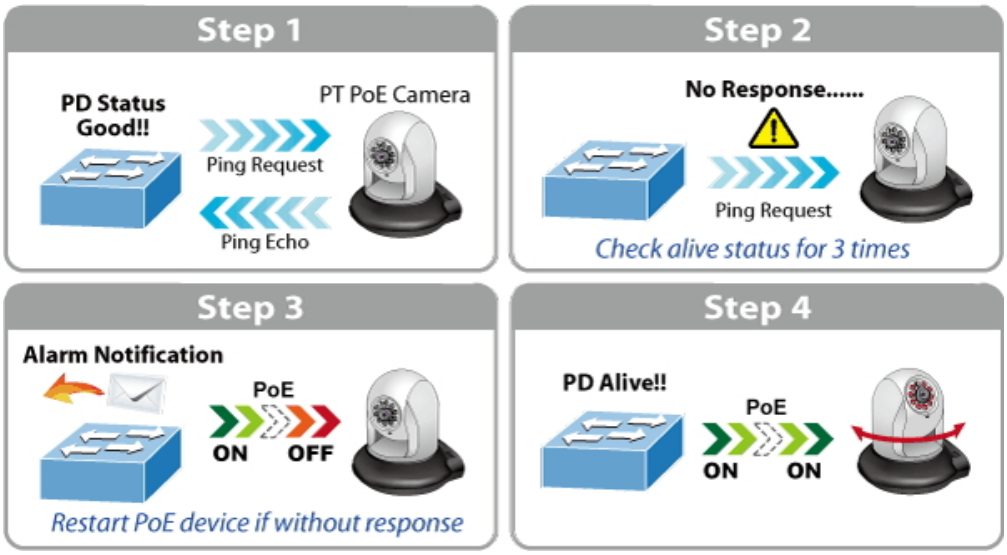
Built-in Unique PoE Functions for Powered Devices Management

Being the managed PoE switches for surveillance, wireless and VoIP networks, the GS-5220-24P4XV and GS-5220-24P4XVR feature the following special PoE management functions:

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

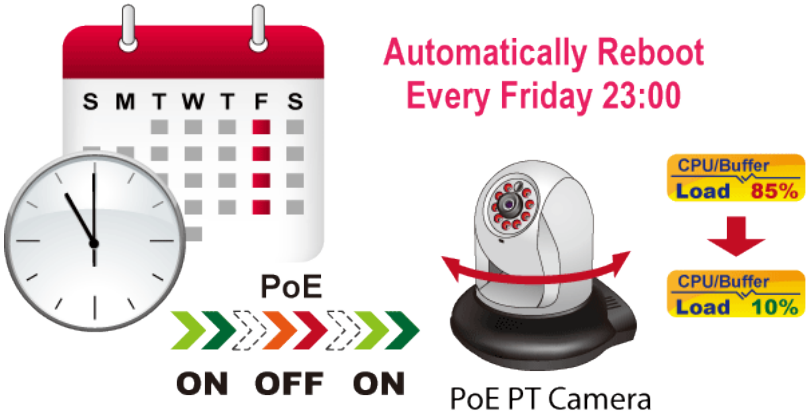
Intelligent Powered Device Alive Check

The GS-5220-24P4XV and GS-5220-24P4XVR 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-5220-24P4XV and GS-5220-24P4XVR will resume the PoE port power and bring the PD back to work. They will greatly enhance the network reliability through the PoE port resetting the PD's power source and reducing administrator management burden.



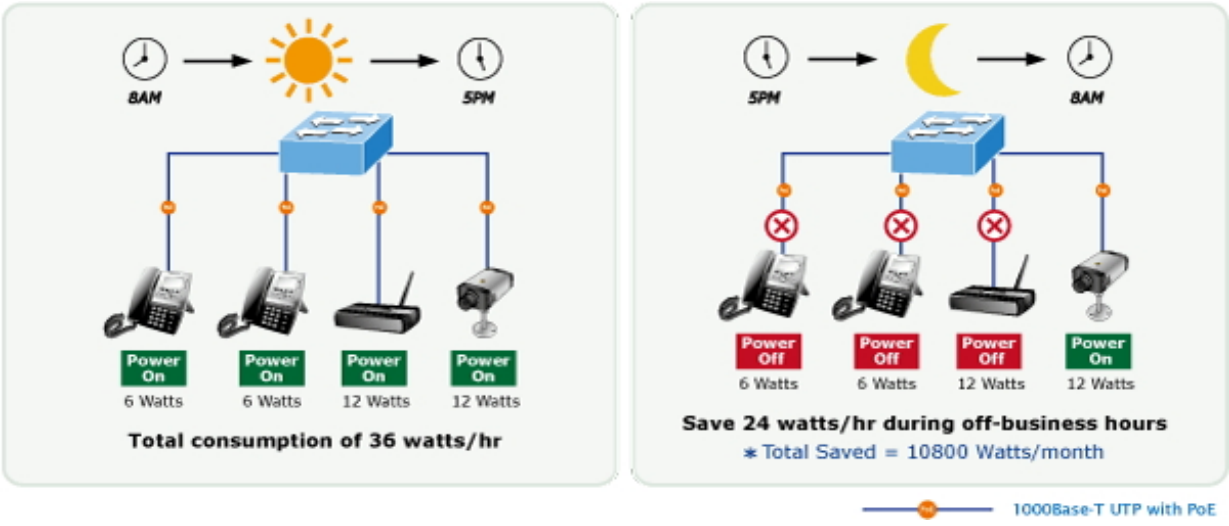
Scheduled Power Recycling

The GS-5220-24P4XV and GS-5220-24P4XVR allow each of the connected PoE IP cameras or PoE wireless access points to reboot at a specified time each week. Therefore, they 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-5220-24P4XV and GS-5220-24P4XVR can effectively control the power supply besides their 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-5220-24P4XV and GS-5220-24P4XVR enable the administrator to monitor the status of the power usage of the connected PDs in real time. Thus, they greatly enhance the management efficiency of the facilities.

Cost-effective 10Gbps Uplink Capacity

10G Ethernet is a big leap in the evolution of Ethernet. The four 10G SFP+ slots of the GS-5220-24P4XV and GS-5220-24P4XVR support **dual-speed 10GBASE-SR/LR** or **1000BASE-SX/LX**, meaning the administrator now can flexibly choose the suitable SFP/SFP+ transceiver according to the transmission distance or the transmission speed required to extend the network efficiently. They greatly support SMB network to achieve the maximum performance of 10Gbps in a cost-effective way because the 10GbE interface usually could be available in Layer 3 Switch but Layer 3 Switch could be too expensive to SMBs.

Redundant AC/DC Power Supply to Ensure Continuous Operation

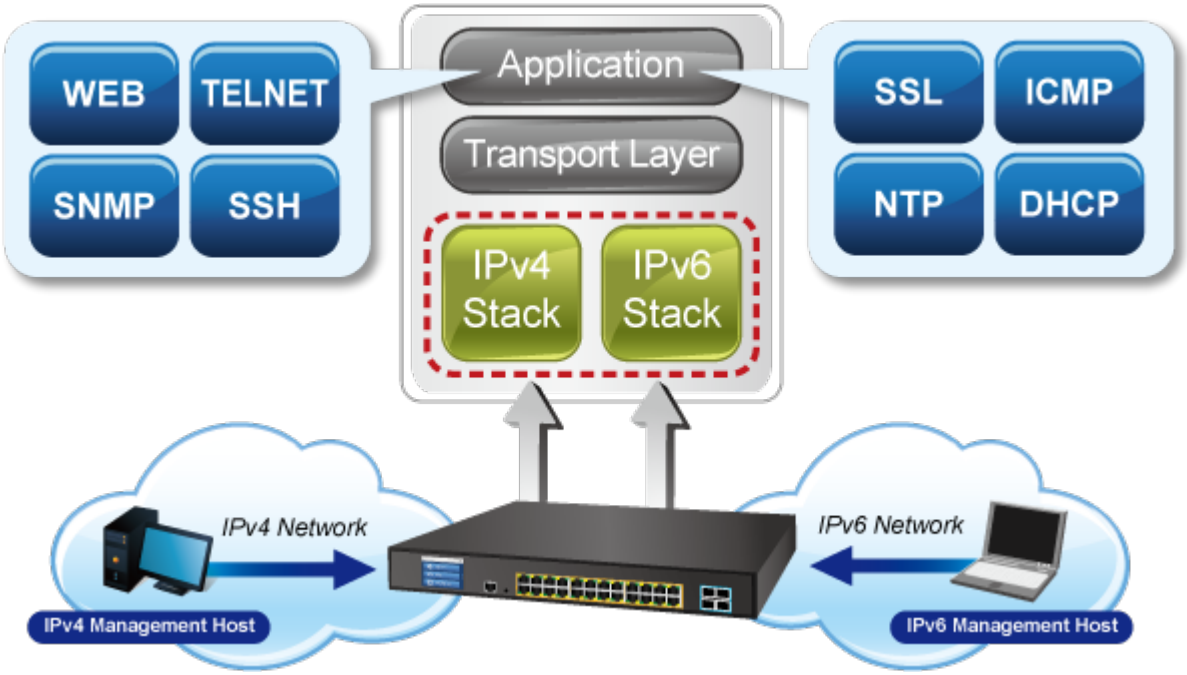
The GS-5220-24P4XVR is particularly equipped with one 100~240V AC power supply unit and one 36~60V DC power supply unit to provide an enhanced reliable and scalable redundant power supply. The continuous power system is specifically designed to fulfill the demands of high-tech facilities requiring the highest power integrity. With the 36~60V DC power supply, the GS-5220-24P4XVR is able to act as a telecom-level device that can be located in the electronic room.

Environment-friendly, Smart Fan Design for Silent Operation

The GS-5220-24P4XV and GS-5220-24P4XVR feature a 19-inch metal housing, a low noise design and an effective ventilation system. They support 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-5220-24P4XV and GS-5220-24P4XVR are able to operate reliably, stably and quietly in any environment without affecting its performance.

Solution for IPv6 Networking

With the IPv6/IPv4 dual stack and other management functions with user-friendly interfaces, the GS-5220-24P4XV and GS-5220-24P4XVR are the best choices for IP surveillance, VoIP and wireless service providers to deploy the IPv6 network. More importantly, they help SMBs upgrade their network infrastructures to the IPv6 era without any monetary investment.

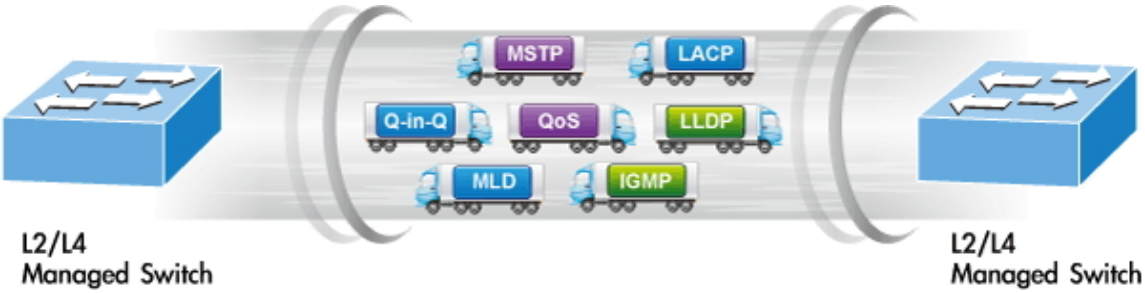


IPv4/IPv6 VLAN Routing for Secure and Flexible Management

To help customers stay on top of their businesses, the GS-5220 switch series not only provides ultra high transmission performance and excellent Layer 2 technologies, but also offers IPv4/IPv6 VLAN routing feature which allows to cross over different VLANs and different IP addresses for the purpose of having a highly-secure, flexible management and simpler networking application.

Robust Layer 2 Features

The GS-5220 series can be programmed for advanced switch management functions, such as dynamic port link aggregation, **Q-in-Q VLAN**, **Multiple Spanning Tree Protocol (MSTP)**, Layer 2/4 QoS, bandwidth control and **IGMP/MLD snooping**. The SGS-5220 series allows the operation of a high-speed trunk combining multiple ports. It consists of a maximum of 14 trunk groups with 4 ports for each group, and supports connection fail-over as well.



Powerful Security

The GS-5220 series offers a comprehensive **Layer 2 to Layer 4 access control list (ACL)** for enforcing security to the edge. It can be used to restrict to network access by denying packets based on source and destination IP address, TCP/UDP port number or defined typical network applications. Its protection mechanism also comprises **802.1x Port-based** and **MAC-based** user and device authentication. With the **private VLAN** function, communication between edge ports can be prevented to ensure user privacy.

Enhanced Security and Traffic Control

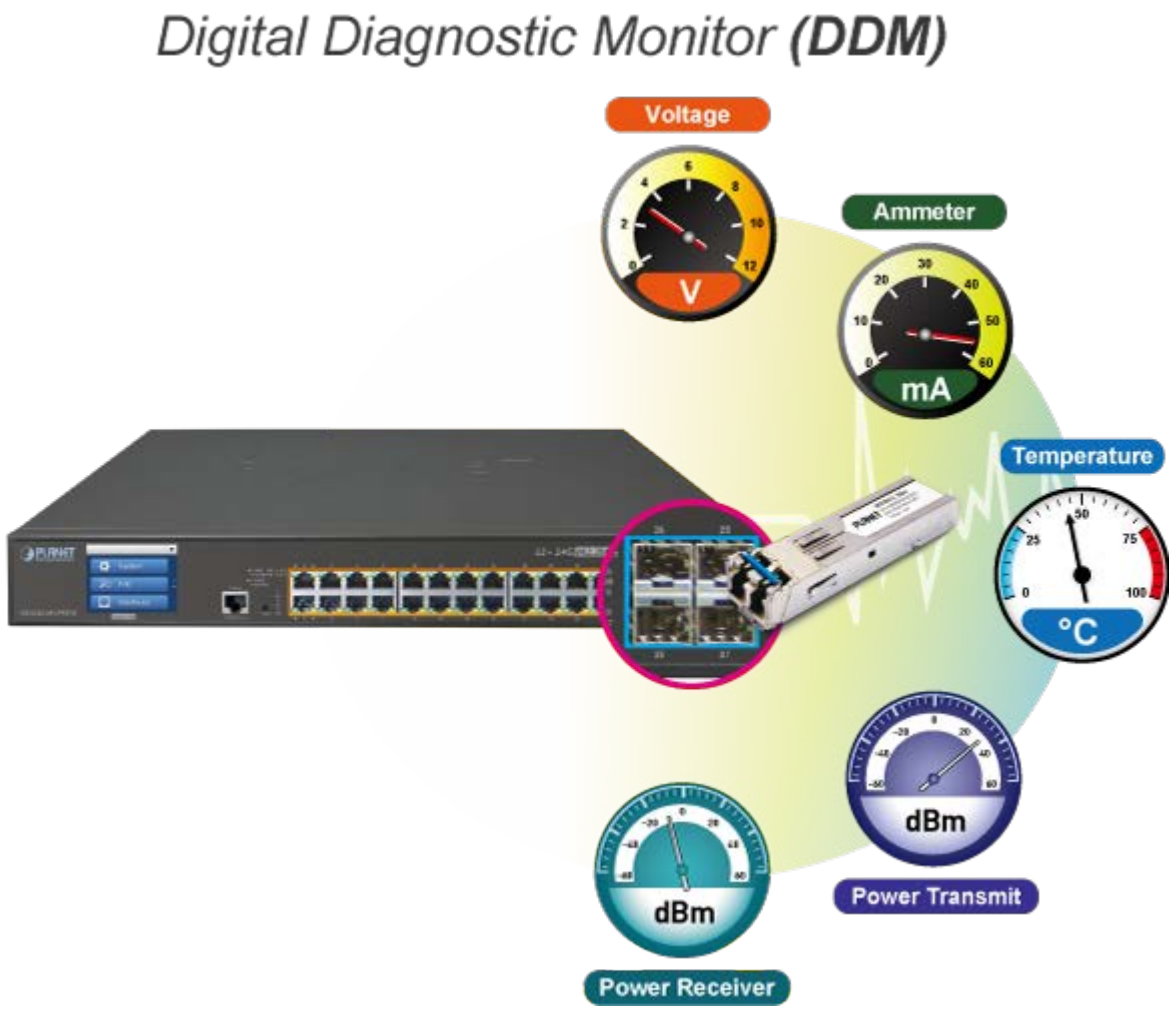
The GS-5220 series also provides **DHCP Snooping**, **IP Source Guard** and **Dynamic ARP Inspection** functions to prevent IP snooping from attack and discard ARP packets with invalid MAC address. The network administrator can now construct highly-secure corporate networks with considerably less time and effort than before.

User-friendly Secure Management

For efficient management, the GS-5220 managed switch series is equipped with console, web and SNMP management interfaces. With the built-in web-based management interface, the GS-5220 series offers an easy-to-use, platform independent management and configuration facility. The GS-5220 series supports SNMP and it can be managed via any management software based on the standard SNMP v1 or v2 Protocol. For reducing product learning time, the GS-5220 series offers **Cisco-like command** via Telnet or console port and customer doesn't need to learn new command from these switches. Moreover, the GS-5220 series offers the remotely secure management by supporting **SSH**, **SSL** and **SNMP v3** connection where the packet content can be encrypted at each session.

Intelligent SFP/SFP+ Diagnosis Mechanism

The GS-5220-24P4XV and GS-5220-24P4XVR support **SFP-DDM (Digital Diagnostic Monitor)** function that greatly helps network administrator to easily monitor real-time parameters of the SFP and SFP+ transceivers, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.



2. PRODUCT FEATURES

- **Physical Port**
  - **24 10/100/1000BASE-T** Gigabit RJ45 copper ports with 24-port **IEEE 802.3af/at PoE+** injector
  - **4 10GBASE-SR/LR SFP+ slots**, compatible with 1000BASE-SX/LX/BX SFP
  - 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 24 ports of IEEE 802.3af/IEEE 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
  - PoE management
    - Total PoE power budget control
    - Per port PoE function enable/disable
    - PoE admin-mode control

- PoE port power feeding priority
- Per PoE port power limitation
- PD classification detection
- Temperature 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 of Store-and-Forward architecture and runt/CRC filtering eliminates erroneous packets to optimize the network bandwidth
- Storm Control support
  - Broadcast/Multicast/Unknown unicast
- Supports **VLAN**
  - IEEE 802.1Q tagged VLAN
  - Up to 255 VLANs groups, out of 4094 VLAN IDs
  - Supports provider bridging (VLAN Q-in-Q, IEEE 802.1ad)
  - Private VLAN Edge (PVE)
  - Protocol-based VLAN
  - MAC-based VLAN
  - Voice VLAN
- Supports Spanning Tree Protocol
  - IEEE 802.1D Spanning Tree Protocol
  - IEEE 802.1w Rapid Spanning Tree Protocol
  - IEEE 802.1s Multiple Spanning Tree Protocol, spanning tree by VLAN
  - BPDU Guard
- Supports **Link Aggregation**
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
  - Maximum 14 trunk groups, up to 4 ports per trunk group
  - Up to 80Gbps bandwidth (full duplex mode)
- Provides port mirror (many-to-1)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port
- Loop protection to avoid broadcast loops

➢ **Layer 3 Features**

- IP interfaces (Max. 8 VLAN interfaces)
- Routing table (Max. 32 routing entries)
- Routing Protocols (IPv4/IPv6 software static routing)

➢ **Quality of Service**

- Ingress Shaper and Egress Rate Limit per port bandwidth control
- 8 priority queues on all switch ports
- Traffic classification
  - IEEE 802.1p CoS
  - TOS/DSCP/IP precedence of IPv4/IPv6 packets
  - IP TCP/UDP port number
  - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies

- Supports QoS and In/Out bandwidth control on each port
- Traffic-policing on the switch port
- DSCP remarking

➢ **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
- Multicast VLAN Registration (MVR) support

➢ **Security**

- Authentication
  - IEEE 802.1x port-based/MAC-based network access authentication
  - Built-in RADIUS client to cooperate with the RADIUS servers
  - TACACS+ login users access authentication
  - RADIUS/TACACS+ users access authentication
- Access Control List
  - IP-based Access Control List (ACL)
  - MAC-based Access Control List
- Source MAC/IP address binding
- **DHCP Snooping** to filter untrusted DHCP messages
- **Dynamic ARP Inspection** discards ARP packets with invalid MAC address to IP address binding
- **IP Source Guard** prevents IP spoofing attacks
- IP address access management to prevent unauthorized intruder

➢ **Management**

- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  - Console/Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management
  - SSH/SSL secure access
  - 2.4-inch color LCD touch screen
- **IPv6** IP address/NTP/DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- System Maintenance
  - Firmware upload/download via HTTP/TFTP
  - Reset button for system reboot or reset to factory default
  - Dual images
- DHCP Relay
- DHCP Option 82
- User Privilege levels control
- NTP (Network Time Protocol)
- Link Layer Discovery Protocol (LLDP) and LLDP-MED
- Network Diagnostic
  - ICMPv6/ICMPv4 remote ping

- Cable diagnostic technology provides the mechanism to detect and report potential cabling issues

- SMTP/Syslog remote alarm
- Four RMON groups (history, statistics, alarms and events)
- SNMP trap for interface Link Up and Link Down notification
- System Log
- PLANET Smart Discovery Utility for deployment management
- Smart fan with speed control

➢ **Redundant Power System (GS-5220-24P4XVR)**

- Redundant 100~240V AC/36-60V DC dual power
- Active-active redundant power failure protection
- Backup of catastrophic power failure on one supply
- Fault tolerance and resilience

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Switch ASIC:	Microsemi VSC7448	x 1
CPU:	MIPS 500MHz (integrated with VSC7448)	x 1
Gigabit PHY	Microsemi VSC8512	x 2
Flash Size	32M bytes	x 1
DRAM Size	256M bytes	x 1
PoE Controller	Microsemi PD69200C	x 1
PSE PoE Manager	Microsemi PD69208M	x 3

3.2 FUNCTION SPECIFICATIONS

Product	GS-5220-24P4XV	GS-5220-24P4XVR
Hardware Specifications		
Copper Ports	24 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports	
SFP+ Slots	4 10GBASE-SR/LR SFP+ interfaces (Port-25 to Port-28) Compatible with 1000BASE-SX/LX/BX SFP transceiver	
Console	1 x RS232-to-RJ45 serial port (115200, 8, N, 1)	
Switch Architecture	Store-and-Forward	
Switch Fabric	128Gbps/non-blocking	
Throughput	95.23Mpps@64Bytes	
Address Table	16K entries, automatic source address learning and aging	
Shared Data Buffer	32M bits	
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex	
Jumbo Frame	10K bytes	

Reset Button	< 5 sec: System reboot > 5 sec: Factory default	
Dimensions (W x D x H)	440 x 300 x 56 mm, 1.25U height	
Weight	4635g	4675g
LED	System: SYS (Green) AC/PWR (Green) DC (Green) (GS-5220-24P4XVR Only) Fan1/2/3 Alert (Red) PoE PWR Alert (Red) PoE Ethernet Interfaces (Port-1 to Port-24): PoE In-use (Orange) Ethernet Interfaces (Port-1 to Port-24): 1000 LNK/ACT (Green), 10/100 LNK/ACT (Orange) 1/10G SFP+ Interfaces (Port-25 to Port-28): 1G (Green), 10G (Orange)	
Power Consumption	Max. 488 watts/1665.13 BTU	AC: 488 watts/1665.13 BTU DC: Max. 36.6 watts/124.88 BTU
Power Requirements – AC	AC 100~240V, 50/60Hz, 7A	
Power Requirements – DC	--	DC 36~60V, 2A
ESD Protection	6KV DC	
Fan	3 smart fans	
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	End-span: 1/2(-), 3/6(+)	
PoE Power Budget	400 watts (max.)	
PoE Ability PD @ 7 watts	24 units	
PoE Ability PD @ 15 watts	24 units	
PoE Ability PD @ 30 watts	13 units	
Layer 2 Management Functions		
Port Configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Flow control disable/enable	
Port Status	Display each port's speed duplex mode, link status, flow control status, auto-negotiation status, trunk status	
Port Mirroring	TX/RX/Both Many-to-1 monitor	
VLAN	802.1Q tagged based VLAN Q-in-Q tunneling Private VLAN Edge (PVE) MAC-based VLAN Protocol-based VLAN Voice VLAN MVR (Multicast VLAN registration)	

	Up to 255 VLAN groups, out of 4095 VLAN IDs	
Link Aggregation	IEEE 802.3ad LACP/static trunk 14 groups with 4 port per trunk	
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)	
QoS	Traffic classification based, strict priority and WRR 8-level priority for switching: - Port number - 802.1p priority - 802.1Q VLAN tag - DSCP/ToS field in IP packet	
IGMP Snooping	IGMP (v1/v2/v3) snooping, up to 255 multicast groups IGMP querier mode support	
MLD Snooping	MLD (v1/v2) snooping, up to 255 multicast groups MLD querier mode support	
Access Control List	IP-based ACL/MAC-based ACL Up to 256 entries	
Bandwidth Control	Per port bandwidth control Ingress: 100Kbps~1000Mbps Egress: 100Kbps~1000Mbps	
Layer 3 Functions		
IP Interfaces	Max. 8 VLAN interfaces	
Routing Table	Max. 32 routing entries	
Routing Protocols	IPv4 software static routing IPv6 software static routing	
Management		
Basic Management Interfaces	Console; Telnet; Web browser; SNMP v1, v2c; 2.4-inch color LCD touch screen	
Secure Management Interfaces	SSH, SSL, SNMP v3	
SNMP MIBs	RFC 1213 MIB-II RFC 1493 Bridge MIB RFC 1643 Ethernet MIB RFC 2863 Interface MIB RFC 2665 Ether-Like MIB RFC 2819 RMON MIB (Groups 1, 2, 3 and 9) RFC 2737 Entity MIB	RFC 2618 RADIUS Client MIB RFC 2863 IF-MIB RFC 2933 IGMP-STD-MIB RFC 3411 SNMP-Frameworks-MIB RFC 4292 IP Forward MIB RFC 4293 IP MIB RFC 4836 MAU-MIB IEEE 802.1X PAE LLDP
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 1000T IEEE 802.3ae 10Gb/s Ethernet	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

	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	RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 2068 HTTP RFC 1112 IGMP v1 RFC 2236 IGMP v2 RFC 3376 IGMP v3 RFC 2710 MLD v1 FRC 3810 MLD v2
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)	

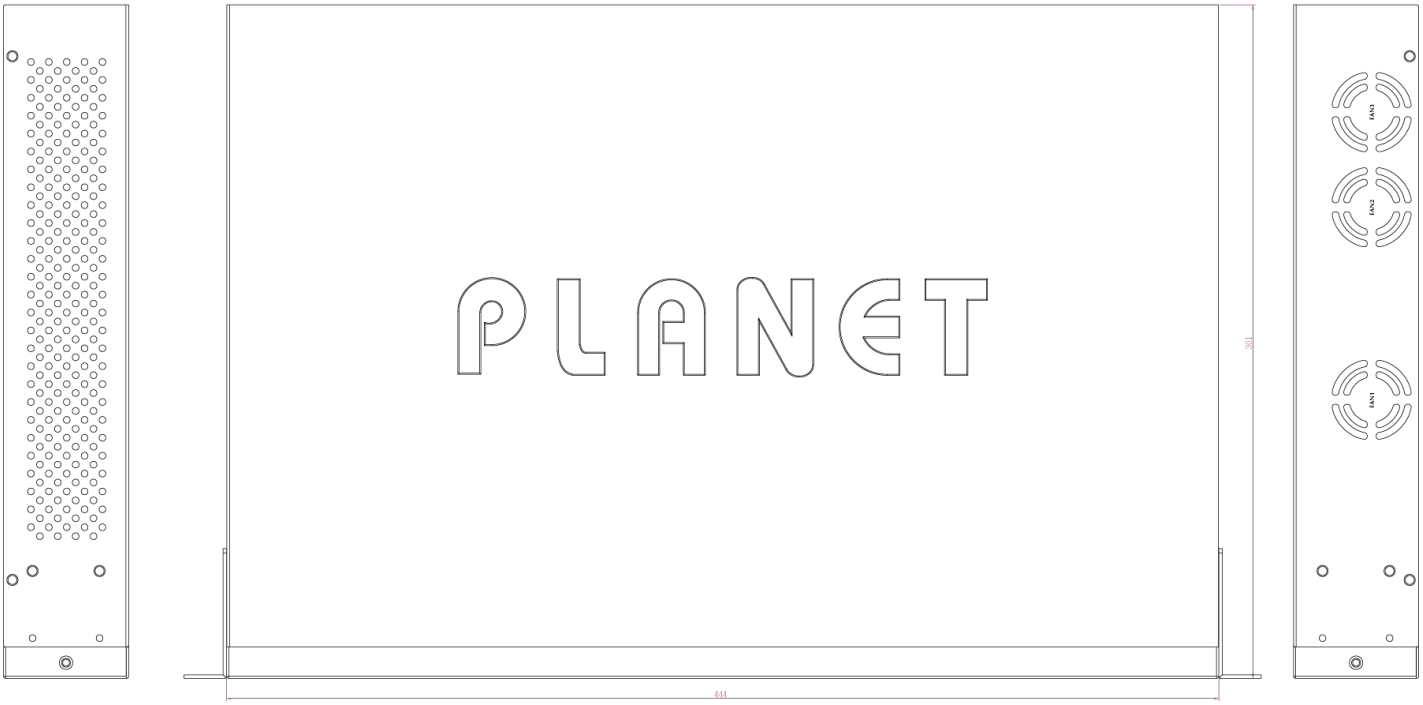
3.3 PHYSICAL SPECIFICATIONS:

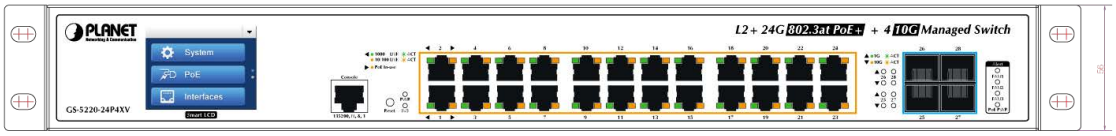
Dimensions:

440 x 300 x 56 mm, 1.25U height (W x D x H)

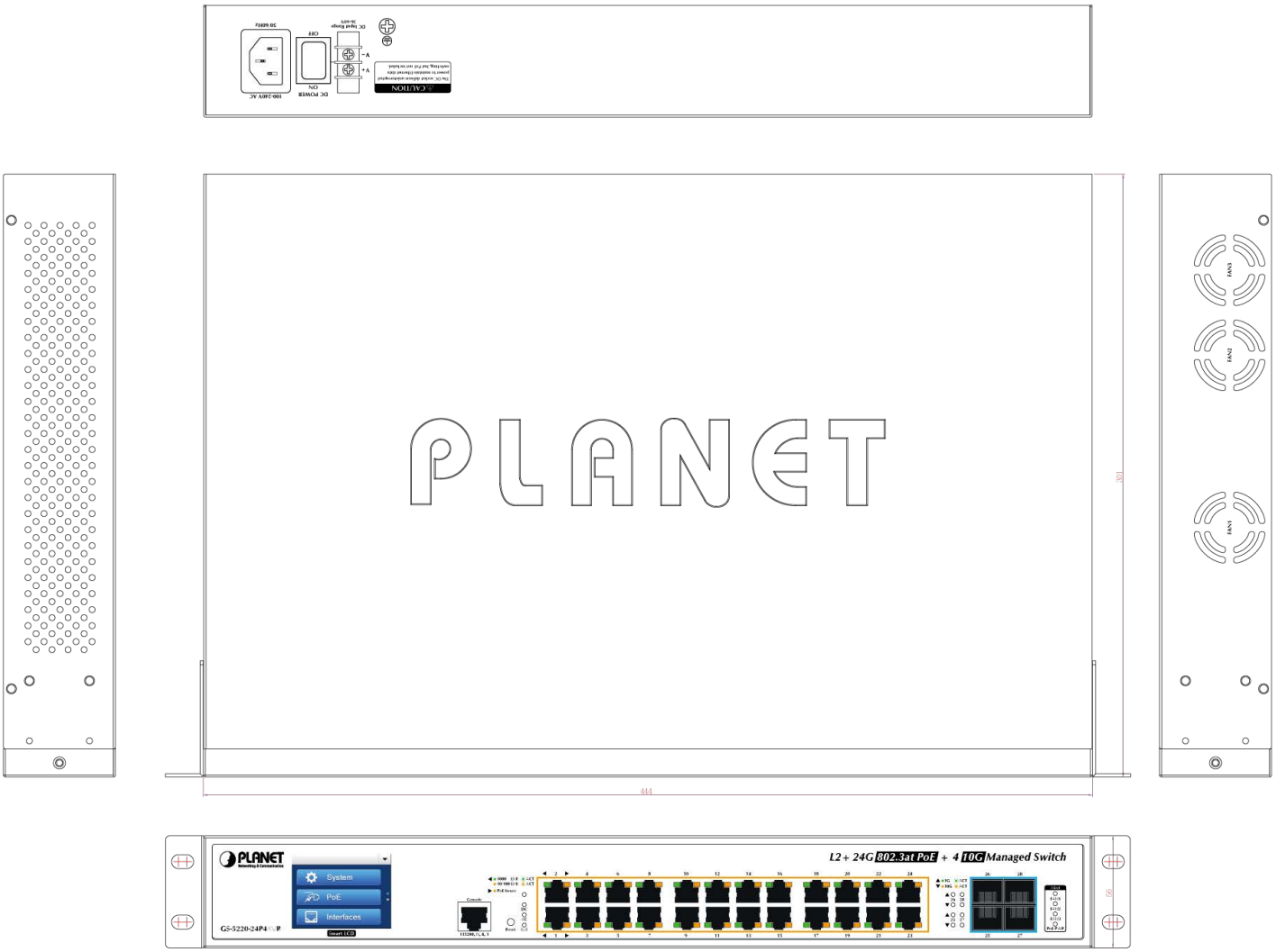
Weight:

GS-5220-24P4XV: 4635g



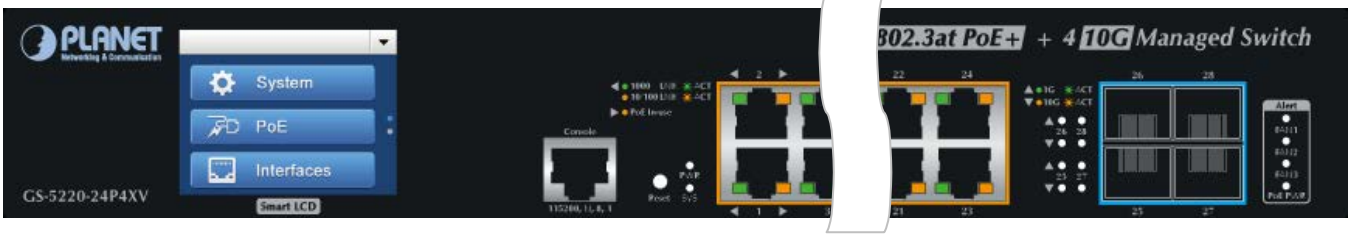


GS-5220-24P4XVR: 4675g



■ **Front Panel:**

GS-5220-24P4XV



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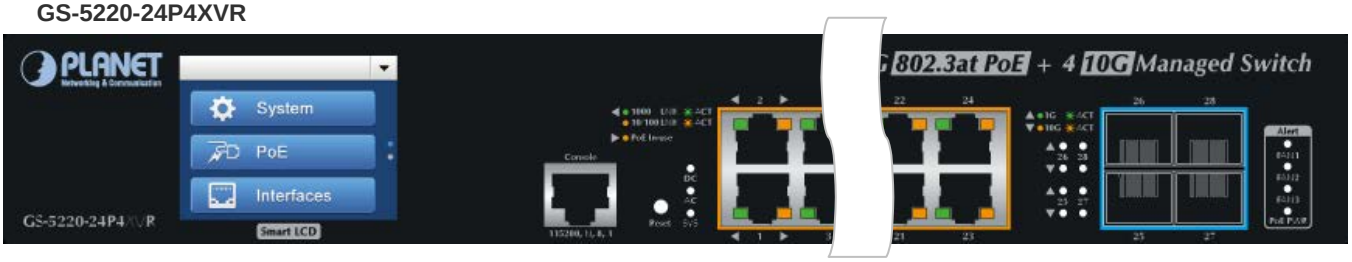

LED Definition

System/Alert (GS-5220-24P4XV)

LED	Color	Function
PWR	Green	**Lights** to indicate that the Switch has power.
SYS	Green	**Lights** to indicate the system is working. **Off** to indicate the system is booting.
FAN 1	Red	**Lights** to indicate that FAN1 is down.
FAN 2	Red	**Lights** to indicate that FAN2 is down.
FAN 3	Red	**Lights** to indicate that FAN3 is down.
PoE PWR	Red	**Lights** to indicate that the PoE power is down.

System/Alert (GS-5220-24P4XVR)

LED	Color	Function
AC	Green	**Lights** to indicate that the Switch has power from AC
DC	Green	**Lights** to indicate that the Switch has power from DC
SYS	Green	**Lights** to indicate the system is working. **Off** to indicate the system is booting.
FAN 1	Red	**Lights** to indicate that FAN1 is down.
FAN 2	Red	**Lights** to indicate that FAN2 is down.
FAN 3	Red	**Lights** to indicate that FAN3 is down.
PoE PWR	Red	**Lights** to indicate that the PoE power is down.

10/100/1000BASE-T Interfaces (Port-1 to Port-24)

LED	Color	Function
Ethernet	Green	**Lights**: To indicate that the port is operating at 1000Mbps. **Blinks:** To indicate that the switch is actively sending or receiving data over that port.
	Orange	**Lights**: To indicate that the port is operating at 10/100Mbps. **Blinks:** To indicate that the switch is actively sending or receiving data over that port.
PoE	Orange	**Lights**: To indicate the port is providing DC in-line power. **Off:** To indicate the connected device is not a PoE Powered Device (PD)

1/10GBASE-SR/LR SFP+ Interfaces (Port-25 to Port-28)

LED	Color	Function
10G	Orange	**Lights**: To indicate that the port is operating at 10Gbps. **Blinks:** To indicate that the switch is actively sending or receiving data over that port.
1000	Green	**Lights**: To indicate that the port is operating at 1000Mbps. **Blinks:** To indicate that the switch is actively sending or receiving data over that port.

■ **Rear Panel:**

■ **GS-5220-24P4XV**

■ **GS-5220-24P4XVR**

3.4 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: 0°C ~ 50°C

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

Storage:

Temperature: -10°C ~ 70°C

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

3.5 ELECTRICAL SPECIFICATIONS

Model		GS-5220-24P4XV	GS-5220-24P4XVR
36~60V DC Power Input		--	36.6 watts/124.88 BTU
100~240V AC Power Input	System on	32 watts/109189 BTU	32 watts/109189 BTU
	PoE Full Loading	488 watts/1665.13 BTU	488 watts/1665.13 BTU

3.6 REGULATORY COMPLIANCE

FCC Class A, CE.

3.7 RELIABILITY

MTBF > 50,000 hrs @ 25 degrees C

3.8 BASIC PACKAGING

- The Managed Switch x 1
- Quick Installation Guide x 1
- RJ45-to-DB9 RS232 cable x 1
- Two Rack-mounting Brackets with Attachment Screws x 1
- Power Cord x 1
- SFP Dust Cap x 4

3.9 PACKING DIMENSIONS

Dimensions: 520 (W) x 450 (D) x 90 (H) mm

Weight: TBD (gross weight)

Quantity: 2pcs in one carton