# Product Specifications

## L2+ 24-Port 10/100/1000T 802.3at PoE + 4-Port 10G SFP+ Managed Switch

## GS-5220-24PL4X

## GS-5220-24PL4XR

Version 1.0



Change History:

| Revision | Date | Author | Change List |
|---|---|---|---|
| 1.0 | 2017/5/19 | Calvin Chao | Initial release |

| | | | |
|---|---|---|---|
| **Author** | Calvin Chao | **Editor:** | Calvin Chao |
| **Reviewed by:** | | **Approved by:** | Kent Kang |

# 1. PRODUCT DESCRIPTION

### IPv6 Routing and 10G Ethernet Switch Solutions with PoE Plus for SMBs

PLANET GS-5220-24PL4X and GS-5220-24PL4XR Layer 2+ Managed PoE Switches support both **IPv4 and IPv6 protocols,** and **hardware Layer 3 static routing** capability. They comply with **IEEE 802.3at Power over Ethernet Plus** (**PoE+**), equipped with **24 10/100/1000BASE-T** Gigabit Ethernet ports, **4 shared Gigabit SFP slots** and **4 10G SFP+ uplink slots**. Their **24** Gigabit Ethernet ports integrated with 802.3at PoE+ injector function on all ports.

The GS-5220-24P4LX series can handle extremely large amounts of data in a secure topology linking to deploying Power over Ethernet networks, data center/service provider backbone or high capacity servers. They can work with a 10Gbps SFP+ server adapter to help SMBs build the 10Gbps Ethernet network providing 10Gbps NAS (Network Attached Storage) or heavy transmission of video streaming service.

### Redundant AC/DC Power Supply to Ensure Continuous Operation

The GS-5220-24P4LXR 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-5220-24PL4XR is able to act as a telecom-level device that can be located in the electronic room.

### 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-5220-24PL4X and GS-5220-24PL4XR 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 deploying location of surveillance devices for easier inspection and planning is allowed. Moreover, clients can get real-time surveillance's information and online/offline status, and PoE reboot control from GUI is allowed.

### Cost-effective 10Gbps Uplink for Large Surveillance Applications

The GS-5220-24PL4X series provides IPv6/IPv4 management and built-in L2/L4 Gigabit Switching engine along with 24 10/100/1000BASE-T ports featuring 36-watt 802.3at PoE+, and 4 10Gbps SFP+ fiber slots. With a total power budget of up to 600W for different kinds of PoE applications, it provides a quick, safe and cost-effective Power over Ethernet network solution to IP security surveillance for small businesses and enterprises.

### Flexible and Extendable 10Gbps Ethernet Solution

10Gbps Ethernet is a big leap in the evolution of Ethernet. Each of the SFP+ slot supports dual speed and 10GBase-SR/LR, meaning the administrator now can flexibly choose the suitable SFP+ transceiver according to the transmission distance or the transmission speed required to extend the network efficiently. With its 4-port, 10Gbps Ethernet link capability, the GS-5220-24PL4X series provides broad bandwidth and powerful processing capacity.

### Centralized Power Management for Gigabit Ethernet PoE Networking

To fulfill the needs of higher power required PoE network applications with Gigabit speed transmission, the GS-5220-24PL4X series features IEEE 802.3at PoE+ that combines up to 36 watts of power output and data per port over one Cat5E/6 Ethernet cable. It is designed specifically to meet the demand of higher power consuming network PD (powered device) such as IR, PTZ, speed dome cameras or even box-type IP camera with a built-in fan and heater. Compliant with both 802.3at and 802.3af, it allows more flexibility in power requirement for a variety of PDs.

### Built-in Unique PoE Functions for Surveillance Management

As a managed PoE Switch for surveillance network, the GS-5220-24PL4X series features four special PoE management functions:

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

### Intelligent Powered Device Alive Check

The GS-5220-24PL4X series can be configured to monitor connected PD status in real time via ping action. Once the PD stops working and has no response, the GS-5220-24PL4X series 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 reduces administrator management burden.

### Scheduled Power Recycling

The GS-5220-24PL4X series allows each of the connected PoE IP cameras to reboot in a specific time each week. Therefore, it will reduce the chance of IP camera crash resulting from buffer overflow.

### PoE Schedule for Energy Saving

Besides IP surveillance, the GS-5220-24PL4X series is certainly applicable to construct any PoE network including VoIP and wireless LAN. Under the trend of energy saving worldwide and contributing to environment protection on the Earth, the GS-5220-24PL4X series 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.

### IPv4/IPv6 VLAN Routing for Secure and Flexible Management

To help customer stay on top of business, the GS-5220-24PL4X series not only offers ultra high transmission performance, but also IPv4/IPv6 VLAN routing feature which allows to cross over different VLAN groups and IP addresses for the purpose of having a highly-secure, flexible management.

## Robust Layer 2 Features

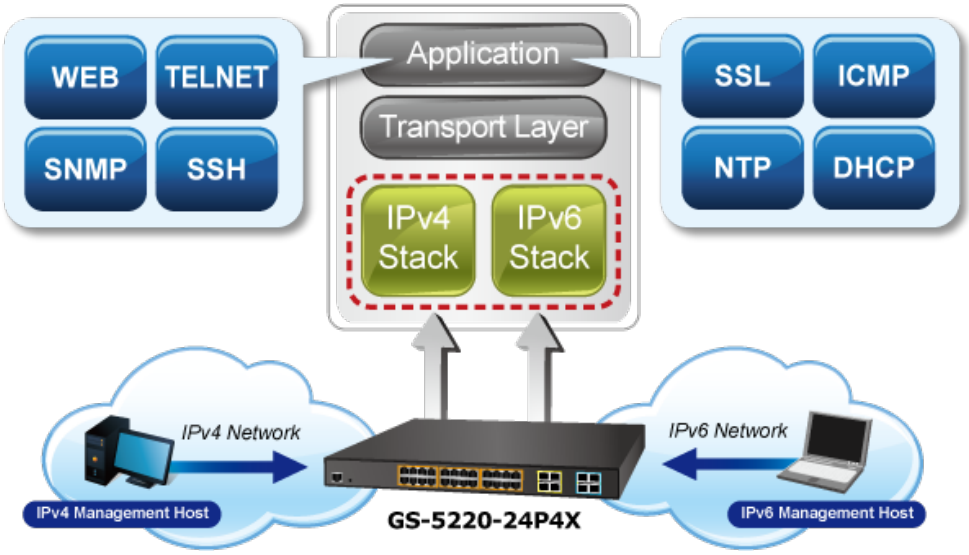
The GS-5220-24PL4X series can be programmed for advanced switch management functions such as dynamic port link aggregation, **Q-in-Q VLAN**, private VLAN, **Multiple Spanning Tree Protocol (MSTP)**, Layer 2/4 QoS, bandwidth control and **IGMP/MLD snooping**. The GS-5220-24PL4X series provides 802.1Q tagged VLAN, and the VLAN groups allowed will be maximally up to 256. Via aggregation of supporting ports, the GS-5220-24PL4X series allows the operation of a high-speed trunk combining multiple ports. It enables up to 14 groups of 8 ports for trunk maximum and supports connection fail-over as well.

## Enhanced Security

The GS-5220-24P4X series 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 application. Its protection mechanism also comprises **802.1x Port-based** and **MAC-based** customer and device authentication. As to **private VLAN** function, communications between edge ports can be protected to ensure customer privacy. The GS-5220-24PL4X series also provides functions of **DHCP snooping**, **IP source guard** and **dynamic ARP inspection** so as to prevent IP from attacking and discarding ARP packets with invalid MAC address. The network administrators can now construct a highly-secure corporate network with considerably less time and effort than before.

## IPv6/IPv4 Dual Stack

As the GS-5220-24PL4X series supports the IPv6 Protocol that is backward compatible with IPv4, the GS-5220-24PL4X helps SMBs and enterprises to step in the IPv6 era with the lowest investment, meaning the existing network facilities need not be replaced.




## Efficient and Secure Management

For efficient management, the GS-5220-24PL4X Managed PoE Switch series is equipped with console, Web and SNMP management interfaces. With the built-in Web-based management interface, the GS-5220-24PL4X series offers an easy-to-use, platform-independent management and configuration facility. The GS-5220-24PL4X series supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management

software. For text-based management, the GS-5220-24PL4X series can be accessed via Telnet and the console port. Moreover, the GS-5220-24PL4X series offers secure remote management by supporting **SSH**, **SSL** and **SNMP v3** connection which encrypt the packet content at each session.

More and more engineers or administrators use Cisco command to manage Ethernet switch. For reducing product learning time, the GS-5220-24PL4X series offers Cisco-like command and customers do not need to learn new command. With easy and friendly management interfaces and plenty of management functions included, the GS-5220-24PL4X series is the best choice for ISPs to build the IPv6 FTTx edge service and for SMBs to connect with the IPv6 network.

### Intelligent SFP Diagnosis Mechanism

The GS-5220-24PL4X series supports SFP-DDM (**Digital Diagnostic Monitor**) function that greatly helps network administrator to easily monitor real-time parameters of the SFP, 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 Ethernet RJ45 ports with **IEEE 802.3at PoE+** injector
  - **4 100/1000BASE-X mini-GBIC/SFP** combo interface with Port-21 to Port-24
  - **4 10GBASE-SR/LR SFP+ slots**, compatible with 1000BASE-SX/LX/BX SFP
  - 1 RJ45 console interface for basic management and setup

- **Power over Ethernet**
  - Complies with IEEE 802.3at PoE+/end-span PSE
  - Up to 24 IEEE 802.3af/802.3at devices powered
  - 600 watts PoE power budget
  - 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 100M
  - PoE Management
    - Total PoE power budget control
    - Per port PoE function enable/disable
    - PoE port power feeding priority
    - Per PoE port power limit
    - PD classification detection
    - PD alive check
    - PoE schedule
    - PD scheduled power recycling

➢ **Layer 2 Features**

- IEEE 802.3x pause frame flow control (full-duplex)
- Store-and-forward architecture and “runt/CRC” filtering
- Storm control support
  - Broadcast
  - Unicast
  - Multicast
- Supports **VLAN**
  - IEEE 802.1Q tagged VLAN
  - Up to 256 VLAN groups, out of 4095 VLAN IDs
  - Provider Bridging (VLAN Q-in-Q) support (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 10 trunk groups, up to 16 ports per trunk group
  - Up to 32Gbps bandwidth in 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 IP Routing Features**

- Supports a maximum of 8 static routes and route summarization
- Supports a maximum of 32 routing entries

➢ **Quality of Service**

- 8 priority queues on all switch ports
- Traffic classification
  - IEEE 802.1p CoS
  - IP TOS/DSCP/IP precedence
  - IP TCP/UDP port number
  - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Traffic-policing on the switch port

- DSCP remarking

➢ **Multicast**

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

➢ **Security**

- IEEE 802.1x port-based/MAC-based network access authentication
- Built-in RADIUS client to cooperate with the RADIUS servers
- RADIUS/TACACS+ customers access authentication
- IP-based access control List (ACL)
- MAC-based access control list
- **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
- IP address access management to prevent unauthorized intruder

➢ **Management**

- Switch management interfaces
  - Console and Telnet command line interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management
  - SSH/SSL secure access
- Four RMON groups (history, statistics, alarms and events)
- **IPv6** address, NTP and DNS management
- Built-in Trivial File transfer Protocol (TFTP) client
- DHCP client
- Firmware upload/download via HTTP/TFTP
- DHCP Relay
- DHCP Option 82
- Customer Privilege levels control
- NTP (network time protocol)
- Link Layer Discovery Protocol (LLDP)
- Cable diagnostic technology provides the mechanism to detect and report potential cabling issues
- Reset button for system reboot or reset to factory default

- **Redundant Power System (GS-5220-24PL4XR)**
  - 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** | Vitesse VSC7448 | x 1 |
| **CPU** | MIPS 500MHz (integrated with VSC7448) | x 1 |
| **PoE Controller** | Microsemi PD69200C | x 1 |
| **PoE PSE** | Microsemi PD69208M | x 3 |
| **Flash Size** | 32M bytes | x 1 |
| **DRAM Size** | 256M bytes | x 1 |

## 3.2 FUNCTION SPECIFICATIONS

| **Product** | **GS-5220-24PL4X** | **GS-5220-24PL4XR** |
|---|---|---|
| **Hardware Specifications** | | |
| **Copper Ports** | 24 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports with IEEE 802.3at PoE injector | |
| **SFP/mini-GBIC Slots** | 4 100/1000BASE-X SFP combo interfaces with Port-21 to Port-24<br>Supports 100/1000Mbps dual mode and DDM | |
| **10Gbps Fiber Uplink Ports** | 4 1/10GBASE-SR/LR SFP+ slots<br>Supports 1/10Gbps dual mode and DDM | |
| **Console** | 1 RJ45 serial port (115200, 8, N, 1) | |
| **Switch Architecture** | Store-and-Forward | |
| **Switch Fabric** | 128Gbps/non-blocking | |
| **Throughput** | 95 Mpps@64 bytes | |
| **Address Table** | 16K entries, automatic source address learning and aging | |
| **Shared Data Buffer** | 32M bytes | |
| **Flow Control** | IEEE 802.3x pause frame for full-duplex<br>Back pressure for half-duplex | |
| **Jumbo Frame** | 10K bytes | |
| **Reset Button** | < 5 sec: System reboot<br>> 5 sec: Factory default | |
| **LED** | System:<br>SYS (Green)<br>PWR (Green) (GS-5220-24PL4XR showed AC)<br>DC (Green) (GS-5220-24PL4XR Only)<br>FAN1 (Red), FAN2 (Red), FAN3 (Red), PoE PWR (Red)<br>Ethernet Interfaces (Port 1 to Port 24):<br>1000 LNK/ACT (Green), 10/100 LNK/ACT (Orange)<br>PoE Ethernet Interfaces (Port 1 to Port 24):<br>PoE-in-Use (af/at-**Orange**)<br>100/1000Mbps SFP Combo Interfaces (Port-21 to Port-24):<br>1000 (Green), 100 (Orange)<br>1/10G SFP+ Interfaces (Port-25 to Port-28):<br>1000 (Green), 10G (Orange) | |

| Power over Ethernet | | | |
|---|---|---|---|
| PoE Standard | | IEEE 802.3at PoE Plus PSE | |
| PoE Power Supply Type | | End-span | |
| PoE Port Power Output Ability | | Max. 36 watts | |
| Power Pin Assignment | | 1/2(-), 3/6(+) | |
| PoE Power Budget | | 600 watts max. | |
| PoE Ability | PD @ 7 watts | 24 units | |
| | PD @ 15.4 watts | 24 units | |
| | PD @ 30.8 watts | 20 units | |
| Power Requirements | | 100~240V AC, 50/60Hz, 10A | 100-240V AC, 50/60Hz, 10A<br>48V DC @ 2A, Range: 36 ~ 60V |
| Power Consumption (Full Loading) | | AC 110V:<br>Max. 45.8 watts/157.1BTU (Power on without any connection)<br>Max. 657.9 watts/2257.2BTU (Full loading with PoE function) | AC 220V:<br>Max. 45.5 watts/198.6BTU (Power on without any connection)<br>Max. 660.3 watts/2265.5BTU (Full loading with PoE function) |
| ESD Protection | | 6KV DC | |
| Dimensions (W x D x H) | | 440 x 300 x 44.5 mm, 1U height | |
| Enclosure | | Metal | |
| Fan | | 3 x smart fan | |
| Weight | | 5040g (GS-5220-24PL4X) | 5071g (GS-5220-24PL4XR) |
| **Layer 2 Function** | | | |
| Port Configuration | | Port disable/enable<br>Auto-negotiation 10/100/1000Mbps full or half duplex mode selection<br>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<br>Many-to-1 monitor | |
| VLAN | | 802.1Q tagged-based VLAN, up to 256 VLAN groups<br>Q-in-Q tunneling<br>Private VLAN edge (PVE)<br>MAC-based VLAN<br>Protocol-based VLAN<br>Voice VLAN<br>IP Subnet-based VLAN<br>MVR (Multicast VLAN registration)<br>Up to 256 VLAN groups, out of 4094 VLAN IDs | |
| Link Aggregation | | IEEE 802.3ad LACP/static trunk<br>10 groups of 16-port trunk supported | |
| QoS | | Traffic classification based, strict priority and WRR<br>8-level priority for switching | |

| | |
|---|---|
| | - Port number<br>- 802.1p priority<br>- 802.1Q VLAN tag<br>- DSCP field in IP packet |
| **IGMP Snooping** | IGMP (v1/v2/v3) snooping, up to 255 multicast groups<br>IGMP querier mode support |
| **MLD Snooping** | MLD (v1/v2) snooping, up to 255 multicast groups<br>MLD querier mode support |
| **Access Control List** | IP-based ACL / MAC-based ACL<br>Up to 256 entries |
| **Layer 3 Function** | |
| **IP Interfaces** | Max. 8 VLAN interfaces |
| **Routing Table** | Max. 32 routing entries |
| **Routing Protocols** | IPv4 software static routing<br>IPv6 software static routing |
| **Management** | |
| **Basic Management Interfaces** | Console, Telnet, Web browser, and SNMP v1/v2c |
| **Secure Management Interfaces** | SSH/SSL, SNMP v3 |
| **ONVIF** | ONVIF device discovery<br>ONVIF device monitoring<br>Floor map |
| **SNMP MIBs** | RFC 1213 MIB-II<br>IF MIB<br>RFC 1493 Bridge MIB<br>RFC 1643 Ethernet MIB<br>RFC 2863 Interface MIB<br>RFC 2665 Ether-Like MIB<br>RFC 2819 RMON MIB (Groups 1 and 2)<br>RFC 2737 Entity MIB<br>RFC 2618 RADIUS Client MIB<br>RFC 3411 SNMP-Frameworks-MIB<br>IEEE 802.1x PAE<br>LLDP<br>MAU MIB |
| **Standards Conformance** | |
| **Regulatory Compliance** | FCC Part 15 Class A, CE |
| **Standards Compliance** | IEEE 802.3 10BASE-T<br>IEEE 802.3u 100BASE-TX/100BASE-FX<br>IEEE 802.3z Gigabit SX/LX<br>IEEE 802.3ab Gigabit 1000T<br>IEEE 802.3ae 10Gb/s Ethernet<br>IEEE 802.3x flow control and back pressure<br>IEEE 802.3ad port trunk with LACP<br>IEEE 802.1D Spanning Tree Protocol<br>IEEE 802.1w Rapid Spanning Tree Protocol<br>IEEE 802.1s Multiple Spanning Tree Protocol<br>IEEE 802.1p Class of service<br>IEEE 802.1Q VLAN tagging<br>IEEE 802.1x port authentication network control |

| | |
|---|---|
| | IEEE 802.3af Power over Ethernet<br>IEEE 802.3at Power over Ethernet Plus<br>IEEE 802.1ab LLDP<br>RFC 768 UDP<br>RFC 793 TFTP<br>RFC 791 IP<br>RFC 792 ICMP<br>RFC 2068 HTTP<br>RFC 1112 IGMP v1<br>RFC 2236 IGMP v2<br>RFC 3376 IGMP v3<br>RFC 2710 MLD v1<br>FRC 3810 MLD v2 |
| **Environment** | |
| **Operating** | Temperature: 0 ~ 50 degrees C for AC power input<br>Relative Humidity: 5 ~ 95% (non-condensing) |
| **Storage** | Temperature: -40 ~ 80 degrees C<br>Relative Humidity: 5 ~ 95% (non-condensing) |

### 3.3 PHYSICAL SPECIFICATIONS:

**Dimensions:**

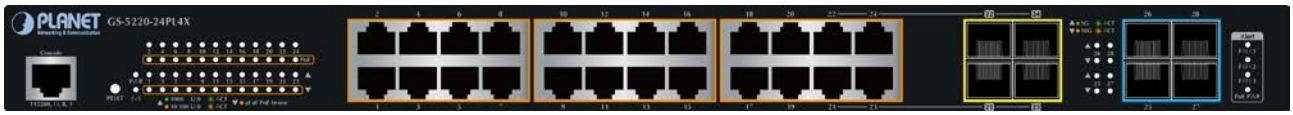
440 x 300 x 44.5 mm (W x D x H)

**Weight:**

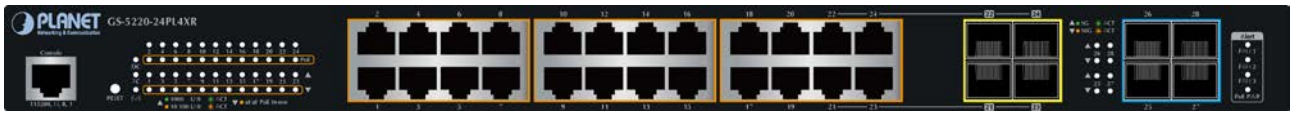
5040g (GS-5220-24P4X)
5071g (GS-5220-24P4XR)

**Front View**

**GS-5220-24PL4X:**

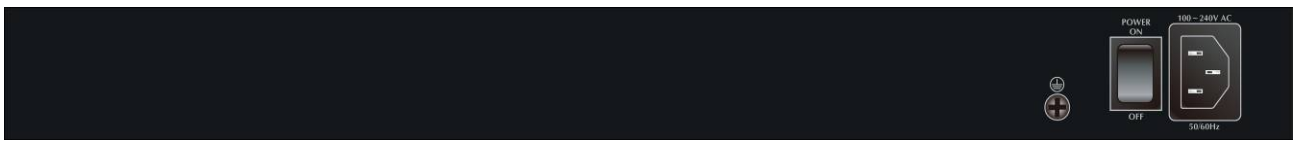



**GS-5220-24PL4XR:**




■ **Rear Panel:**

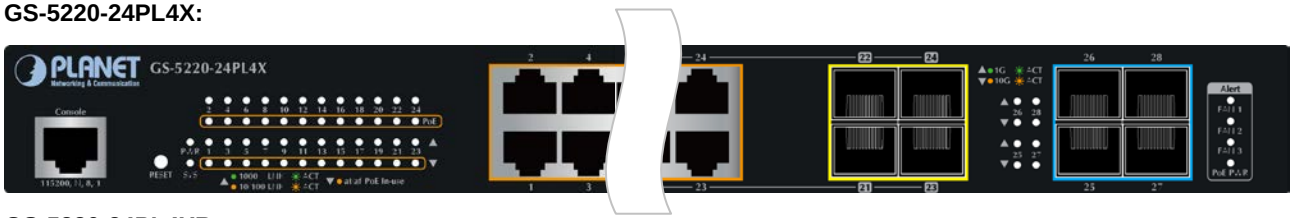
**GS-5220-24PL4X:**



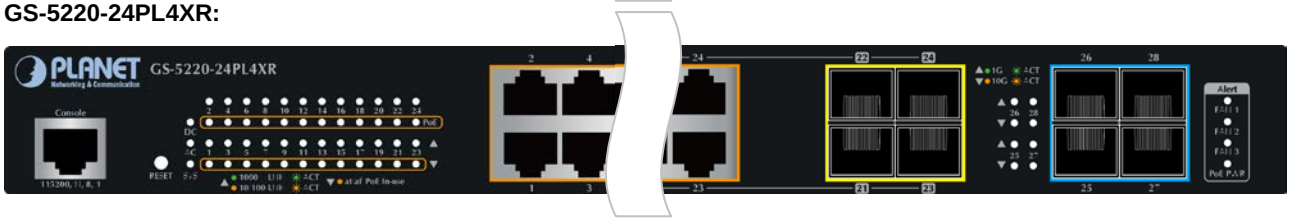

**GS-5220-24PL4XR:**

## ■ LED Definition

**GS-5220-24PL4X:**




**GS-5220-24PL4XR:**




### ■ System / Alert (GS-5220-24PL4X)

| LED | Color | Function |
|---|---|---|
| PWR | Green | **Lights** to indicate that the Switch has power. |
| SYS | Green | **Lights** to indicate the system is working.<br>**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-5220-24PL4XR)

| 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.<br>**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) |

■ **100/1000BASE-SX/LX SFP Interfaces (Port-21 to Port-24)**

| LED | Color | Function |
|---|---|---|
| **1000** | **Green** | **Lights**: To indicate that the port is operating at 1000Mbps.<br>**Blinks:** To indicate that the switch is actively sending or receiving data over that port. |
| **100** | **Orange** | **Lights**: To indicate that the port is operating at 100Mbps.<br>**Blinks:** To indicate that the switch is actively sending or receiving data over that port. |

■ **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.<br>**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.<br>**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:** -40 ~85 degrees C

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

## 3.5 ELECTRICAL SPECIFICATIONS

| **Product** | GS-5220-24PL4X | GS-5220-24PL4XR |
|---|---|---|
| **Input Voltage:** | 100~240V AC, 50/60Hz, 10A | 100~240V AC, 50/60Hz, 10A<br>36 ~ 60V DC @ 2A (only for system) |
| **Power Consumption (System on):** | 19.6 watts/67.2 BTU @ DC 36V (GS-5220-24PL4XR)<br>20.2 watts/69.3 BTU @ DC 48V (GS-5220-24PL4XR)<br>20.6 watts/70.7 BTU @ DC 60V (GS-5220-24PL4XR)<br>44.6 watts/153 BTU @ AC 100V<br>45.8 watts/157.1 BTU @ AC 110V<br>46.6 watts/159.9 BTU @ AC 120V<br>45.5 watts/156.1 BTU @ AC 220V<br>43.4 watts/148.9 BTU @ AC 240V | |
| **Power Consumption (Ethernet Full Loading)** | 33.9 watts/116.3 BTU @ DC 36V (GS-5220-24PL4XR)<br>34.1 watts/117 BTU @ DC 48V (GS-5220-24PL4XR)<br>34.5 watts/118.4 BTU @ DC 60V (GS-5220-24PL4XR)<br>61.5 watts/211 BTU @ AC 100V<br>57.9 watts/198.6 BTU @ AC 110V<br>59.2 watts/203.1 BTU @ AC 120V<br>60.3 watts/206.9 BTU @ AC 220V<br>59 watts/202.4 BTU @ AC 240V | |
| **Power Consumption (PoE + Ethernet Full Loading)** | 661.5 watts/2269.6 BTU @ AC 100V<br>657.9 watts/2257.2 BTU @ AC 110V<br>659.2 watts/2264.1 BTU @ AC 120V<br>660.3 watts/2265.5 BTU @ AC 220V<br>659 watts/2261 BTU @ AC 240V | |

### 3.6 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

### 3.7 RELIABILITY

MTBF > 50,000hrs @ 25 degrees C

### 3.8 BASIC PACKAGING

| | |
|---|---|
| ☑ The GS-5220-24PL4X/GS-5220-24PL4XR 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 8 |

### 3.9 PACKING DIMENSIONS

| | |
|---|---|
| **Dimensions:** | 520 x 450 x 90mm |
| **Weight:** | TBD |
| **Quantity:** | 2pcs in one carton |