

## Product Specifications

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

**GS-5220-24UP4X**

**GS-5220-24UP4XR**

Version 1.0

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Change History:

Revision	Date	Author	Change List
1.0	2017/5/4	Bryant Wu	Initial release

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<b>Reviewed by:</b>		<b>Approved by:</b>	Kent Kang

## 1. PRODUCT DESCRIPTION



### **Amazing Ultra PoE Managed Switch with Advanced L2+/L4 Switching and Security**

PLANET GS-5220-24UP4X and GS-5220-24UP4XR are cost-optimized, 1U, Gigabit Ultra PoE Managed Switches 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 **75-watt Ultra PoE**, **4 Gigabit TP/SFP combo ports** and **4 additional 10Gigabit SFP+ ports**. With a total power budget of up to 400 watts for different kinds of PoE applications, the GS-5220-24UP4X and GS-5220-24UP4XR provide a quick, safe and cost-effective ultra PoE network solution for small businesses and enterprises.

### **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-5220-24UP4X and GS-5220-24UP4XR 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 allows 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 also allows PoE reboot control from GUI.

### **75 Watts of Power over 4-pair UTP**

The GS-5220-24UP4X and GS-5220-24UP4XR ultra PoE solution adopts the IEEE 802.3at/af standard. Instead of delivering power over 2-pair twisted UTP – be it end-span (Pins 1,2,3 and 6) or mid-span (Pins 4,5,7 and 8), it provides the capability to source up to 75 watts of power by using all the four pairs of standard Cat.5e/6 Ethernet cabling. In the new 4-pair system, two PSE controllers will be used to power both the data pairs and the spare pairs. It can offer more PoE applications, such as:

- PoE PTZ speed dome
- Any network device that needs higher PoE power to work normally
- Thin-client
- AIO (All-in-One) touch PC
- Remote digital signage display

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

As it is the managed PoE switch for surveillance, wireless and VoIP networks, the GS-5220-24UP4X and GS-5220-24UP4XR 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-5220-24UP4X and GS-5220-24UP4XR 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-5220-24UP4X and GS-5220-24UP4XR will resume the PoE port power and bring the PD back to work. It will greatly enhance the network reliability through the PoE port resetting the PD's power source and reducing administrator management burden.

### **Scheduled Power Recycling**

The GS-5220-24UP4X and GS-5220-24UP4XR allow each of the connected PoE IP cameras or PoE wireless access points to reboot at a specified time each week. Therefore, it will reduce the chance of IP camera or AP crash resulting from buffer overflow.

### **PoE Schedule for Energy Saving**

Under the trend of energy saving worldwide and contributing to environmental protection, the GS-5220-24UP4X and GS-5220-24UP4XR 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-5220-24UP4X and GS-5220-24UP4XR enable 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.

### **Cost-effective 10Gbps Uplink Capacity**

10G Ethernet is a big leap in the evolution of Ethernet. The four 10G SFP+ slots of the GS-5220-24UP4X and GS-5220-24UP4XR 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-5220-24UP4XR 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-5220-24UP4XR 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-5220-24UP4X and GS-5220-24UP4XR feature a desktop-sized metal housing, 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-5220-24UP4X and GS-5220-24UP4XR are able to operate reliably, stably and quietly in any environment without affecting its performance.

### Solution for IPv6 Networking

By supporting IPv6/IPv4 dual stack and plenty of management functions with easy and friendly user interfaces, the GS-5220-24UP4X and GS-5220-24UP4XR are the best choices for IP surveillance, VoIP and wireless service providers to deploy the IPv6 network. It also helps the SMBs to step in the IPv6 era with the lowest investment but not necessary to replace the network facilities while the ISPs construct the IPv6 FTTx edge network.

### IPv4 and 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 8 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.

#### **Flexible and Extendable Solution**

The 4 mini-GBIC SFP slots built in the GS-5220-24UP4X and GS-5220-24UP4XR support dual speed as it features 100BASE-FX and 1000BASE-SX/LX SFP (Small Form-factor Pluggable) fiber-optic modules. Now the administrator can flexibly choose the suitable SFP transceiver according to not only the transmission distance, but also the transmission speed required. The distance can be extended from 550 m to 2 km (multi-mode fiber) and to 10/20/30/40/50/70/120 km (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-5220-24UP4X and GS-5220-24UP4XR 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 802.3at/af/Ultra PoE injector
- 4 100/1000BASE-X mini-GBIC/SFP slots, shared with port-21 to port-24 compatible with 100BASE-FX SFP
- 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/mid-span PSE
- Backward compatible with IEEE 802.3af Power over Ethernet
- Up to 24 ports of IEEE 802.3af/IEEE 802.3at/ultra PoE devices powered
- Supports PoE power up to 75 watts for each ultra 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 8 ports per trunk group
- Up to 16Gbps 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 policies 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
- Auto DoS rule to defend DoS attack
- 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
- 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-5220-24UP4XR)**

- 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 PD69200	x 1
PoE PSE	Microsemi PD69208M	x 6
Flash Size	32M bytes	x 1
DRAM Size	256M bytes	x 1

#### 3.2 FUNCTION SPECIFICATIONS

<b>Product</b>	GS-5220-24UP4X and GS-5220-24UP4XR
<b>Hardware Specifications</b>	
<b>Copper Ports</b>	24 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports
<b>SFP/mini-GBIC Slots</b>	4 100/1000BASE-X SFP interfaces, shared with Port-21 to Port-24 Compatible with 100BASE-FX SFP transceiver
<b>SFP+ Slots</b>	4 10GbBASE-SR/LR SFP+ interfaces (Port-25 to Port-28) Compatible with 1000BASE-SX/LX/BX SFP transceiver
<b>Console</b>	1 x RS232-to-RJ45 serial port (115200, 8, N, 1)
<b>Switch Architecture</b>	Store-and-Forward
<b>Switch Fabric</b>	128Gbps/non-blocking
<b>Throughput</b>	95.23Mpps@64Bytes
<b>Address Table</b>	16K entries, automatic source address learning and aging
<b>Shared Data Buffer</b>	32M bits
<b>Flow Control</b>	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
<b>Jumbo Frame</b>	10K bytes
<b>Reset Button</b>	< 5 sec: System reboot > 5 sec: Factory default
<b>Dimensions (W x D x H)</b>	440 x 300 x 44.5 mm, 1U height
<b>Weight</b>	4551g (GS-5220-24UP4X) 4588g (GS-5220-24UP4XR)
<b>LED</b>	<p><b>System:</b></p> <ul style="list-style-type: none"> <li>SYS (Green)</li> <li>AC/PWR (Green)</li> <li>DC (Green) (GS-5220-24UP4XR Only)</li> <li>Fan1/2/3 Alert (Red)</li> <li>PoE PWR Alert (Red)</li> </ul> <p><b>PoE Ethernet Interfaces (Port 1 to Port 24):</b></p> <ul style="list-style-type: none"> <li>PoE-in-Use (bt-Green) (af/at- Orange)</li> </ul> <p><b>Ethernet Interfaces (Port 1 to Port 24):</b></p> <ul style="list-style-type: none"> <li>1000 LNK/ACT (Green), 10/100 LNK/ACT (Orange)</li> </ul> <p><b>100/1000Mbps SFP Combo Interfaces (Port 21 to Port 24):</b></p> <ul style="list-style-type: none"> <li>1000 (Green), 100 (Orange)</li> </ul>

	1/10G SFP+ Interfaces (Port 25 to Port 28): 1000 (Green), 10G (Orange)
<b>Power Consumption</b>	Max. 446.6 watts/1522.9 BTU
<b>Power Requirements – AC</b>	AC 100~240V, 50/60Hz, 7A
<b>Power Requirements – DC</b>	DC 36~60V, 2A (GS-5220-24UP4XR)
<b>ESD Protection</b>	6KV DC
<b>Fan</b>	3 smart fan
<b>Power over Ethernet</b>	
<b>PoE Standard</b>	IEEE 802.3af/802.3at/802.3bt Ultra PoE PSE
<b>PoE Power Supply Type</b>	End-span/Mid-span/UPoE
<b>PoE Power Output</b>	Per port 54V DC, 75 watts (max.)
<b>Power Pin Assignment</b>	End-span: 1/2(-), 3/6(+) Mid-span: 4/5(+), 7/8(-) UPoE: 1/2(-), 3/6(+), 4/5(+), 7/8(-)
<b>PoE Power Budget</b>	400 watts (max.)
<b>PoE Ability PD @ 15 watts</b>	24 units
<b>PoE Ability PD @ 30 watts</b>	13 units
<b>PoE Ability PD @ 60 watts</b>	6 units
<b>Layer 2 Management Functions</b>	
<b>Port Configuration</b>	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Flow control disable/enable
<b>Port Status</b>	Display each port's speed duplex mode, link status, flow control status, auto-negotiation status, trunk status
<b>Port Mirroring</b>	TX/RX/Both Many-to-1 monitor
<b>VLAN</b>	802.1Q tagged based VLAN Q-in-Q tunneling Private VLAN Edge (PVE) MAC-based VLAN Protocol-based VLAN Voice VLAN IP subnet-based VLAN MVR (Multicast VLAN registration) Up to 255 VLAN groups, out of 4095 VLAN IDs
<b>Link Aggregation</b>	IEEE 802.3ad LACP/static trunk 14 groups with 8 port per trunk
<b>Spanning Tree Protocol</b>	IEEE 802.1D Spanning Tree Protocol (STP) IEEE 802.1w Rapid Spanning Tree Protocol (RSTP) IEEE 802.1s Multiple Spanning Tree Protocol (MSTP)
<b>QoS</b>	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	
<b>IGMP Snooping</b>	IGMP (v1/v2/v3) snooping, up to 255 multicast groups IGMP querier mode support	
<b>MLD Snooping</b>	MLD (v1/v2) snooping, up to 255 multicast groups MLD querier mode support	
<b>Access Control List</b>	IP-based ACL/MAC-based ACL Up to 256 entries	
<b>Bandwidth Control</b>	Per port bandwidth control Ingress: 100Kbps~1000Mbps Egress: 100Kbps~1000Mbps	
<b>Layer 3 Functions</b>		
<b>IP Interfaces</b>	Max. 8 VLAN interfaces	
<b>Routing Table</b>	Max. 32 routing entries	
<b>Routing Protocols</b>	IPv4 software static routing IPv6 software static routing	
<b>Management</b>		
<b>Basic Management Interfaces</b>	Console; Telnet; Web browser; SNMP v1, v2c	
<b>Secure Management Interfaces</b>	SSH, SSL, SNMP v3	
<b>SNMP MIBs</b>	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
<b>Standards Conformance</b>		
<b>Regulatory Compliance</b>	FCC Part 15 Class A, CE	
<b>Standards Compliance</b>	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 802.3x flow control and back pressure IEEE 802.3ad port trunk with LACP IEEE 802.1D Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1p Class of Service	IEEE 802.1Q VLAN tagging IEEE 802.1x Port Authentication Network Control IEEE 802.1ab LLDP IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.3bt 4-pair Power over Ethernet 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
<b>Environment</b>		
<b>Operating</b>	Temperature: 0 ~ 50 degrees C for AC power input Relative Humidity: 5 ~ 95% (non-condensing)	
<b>Storage</b>	Temperature: -40 ~ 80 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	

### 3.3 PHYSICAL SPECIFICATIONS:

#### Dimensions:

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

#### Weight:

4551g (GS-5220-24UP4X)

4588g (GS-5220-24UP4XR)

#### Front View

##### GS-5220-24UP4X:

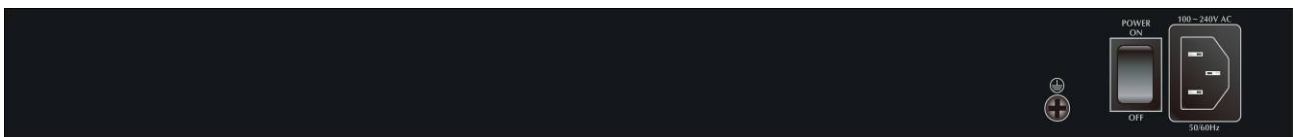


##### GS-5220-24UP4XR:



#### ■ Rear Panel:

##### GS-5220-24UP4X:



##### GS-5220-24UP4XR:



■ LED Definition

GS-5220-24UP4X:



GS-5220-24UP4XR:



■ System / Alert (GS-5220-24UP4X)

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-5220-24UP4XR)

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	Green	Lights: To indicate the port is providing DC in-line power with Ultra PoE mode. Off: To indicate the connected device is not a PoE Powered Device (PD)
	Orange	Lights: To indicate the port is providing DC in-line power with End-span/Mid-span mode.. 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	<b>Lights:</b> To indicate that the port is operating at 1000Mbps. <b>Blinks:</b> To indicate that the switch is actively sending or receiving data over that port.
100	Orange	<b>Lights:</b> To indicate that the port is operating at 100Mbps. <b>Blinks:</b> 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	<b>Lights:</b> To indicate that the port is operating at 10Gbps. <b>Blinks:</b> To indicate that the switch is actively sending or receiving data over that port.
1000	Green	<b>Lights:</b> To indicate that the port is operating at 1000Mbps. <b>Blinks:</b> 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-5220-24UP4X	GS-5220-24UP4XR
Input Voltage:	100~240V AC, 50/60Hz, 7A	100~240V AC, 50/60Hz, 7A 36 ~ 60V DC @ 2A (only for system)
Power Consumption (System on):	18 watts/61.3 BTU @ DC 36V (GS-5220-24UP4XR) 18.5 watts/63 BTU @ DC 48V (GS-5220-24UP4XR) 18.9 watts/64.4 BTU @ DC 60V (GS-5220-24UP4XR) 29.2 watts/99.5 BTU @ AC 100V 29.4 watts/100.2 BTU @ AC 110V 29.6 watts/100.9 BTU @ AC 120V 28.9 watts/98.5 BTU @ AC 220V 28.8 watts/98.2 BTU @ AC 240V	
Power Consumption (Ethernet Full Loading)	32.4 watts/110 BTU @ DC 36V (GS-5220-24UP4XR) 32.6 watts/111 BTU @ DC 48V (GS-5220-24UP4XR) 33.9 watts/115.5 BTU @ DC 60V (GS-5220-24UP4XR) 45.2 watts/154.1 BTU @ AC 100V 45.3 watts/154.4 BTU @ AC 110V 45.5 watts/155.1 BTU @ AC 120V 46 watts/156.8 BTU @ AC 220V 46.6 watts/158.9 BTU @ AC 240V	
Power Consumption (PoE + Ethernet Full Loading)	445.2 watts/1518.1 BTU @ AC 100V 445.3 watts/1518.4 BTU @ AC 110V 445.5 watts/1519.1 BTU @ AC 120V 446 watts/1520.8 BTU @ AC 220V 446.6 watts/1522.9 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

<input checked="" type="checkbox"/> The GS-5220-24UP4X/GS-5220-24UP4XR Switch	x 1
<input checked="" type="checkbox"/> Quick Installation Guide	x 1
<input checked="" type="checkbox"/> RJ45-to-DB9 RS232 cable	x 1
<input checked="" type="checkbox"/> Two Rack-mounting Brackets with Attachment Screws	x 1
<input checked="" type="checkbox"/> Power Cord	x 1
<input checked="" type="checkbox"/> SFP Dust Cap	x 8

### 3.9 PACKING DIMENSIONS

<b>Dimensions:</b>	520 x 450 x 90mm
<b>Weight:</b>	TBD
<b>Quantity:</b>	2pcs in one carton