Product Specifications

L3 48-Port 10/100/1000T 802.3at PoE + 4-Port 10G SFP+ Managed Switch

GS-5220-48P4X

GS-5220-48PL4XR

Version 4.0

Change History:

Revision:	Date:	Author:	Change List
Version 4.0	7/December/2020	Vincent	Remove GS-5220-48P4XR Remove GS-5220-48PL4X SFP Support 2.5G Speed Modify GS-5220-48PL4XR PoE Budget 600W -> 720W
Version 3.0	12/July/2018	Calvin Chao	Firmware upgrade NOR Flash upgrade to 64Mb
Version 2.0	27/March/2018	Calvin Chao	Add Flash
Version 1.0	27/October/2017	Calvin Chao	Initial Release

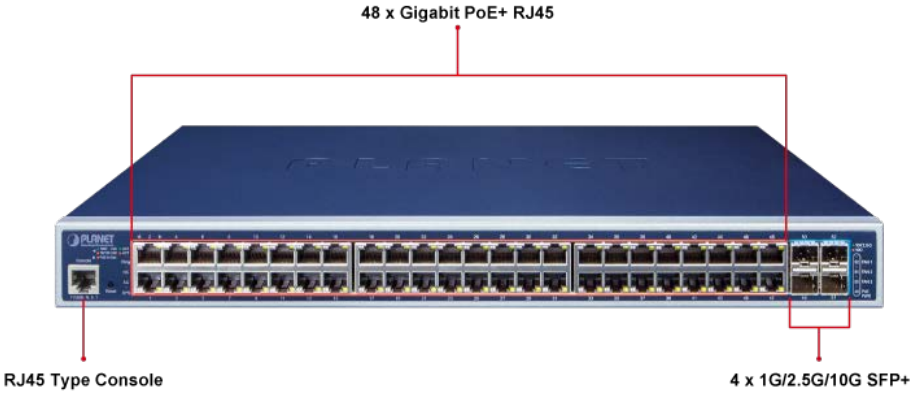
Author:	Vincent	**Editor:**	Vincent
Reviewed by:	Reyo	**Approved by:**	Kent Kang

1. PRODUCT DESCRIPTION

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

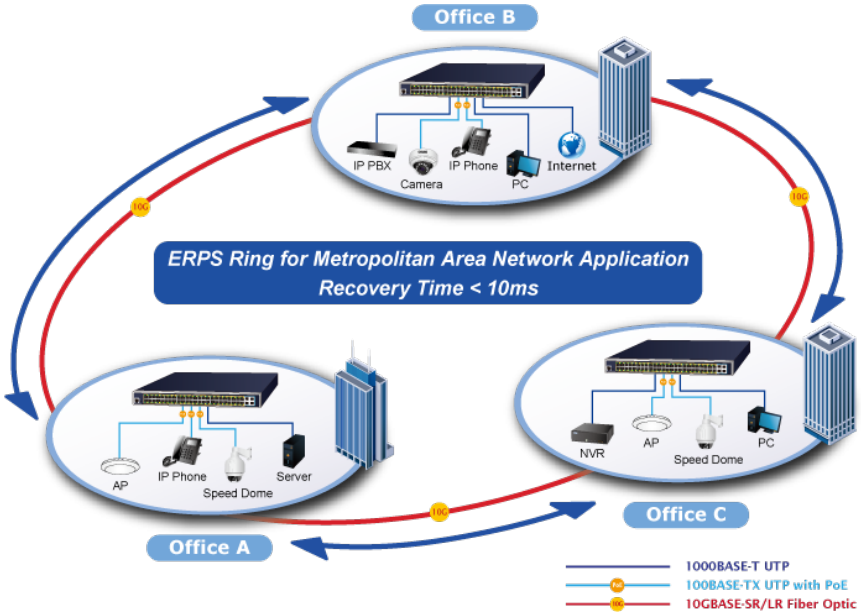
PLANET GS-5220-48P(L)4X(R) Layer 3 Managed PoE Switches support both **IPv4 and IPv6 protocols, hardware-based Layer 3 static routing** and OSPFv2 dynamic routing capability. They comply with **IEEE 802.3at Power over Ethernet Plus** (**PoE+**), equipped with **48 10/100/1000BASE-T** Gigabit Ethernet ports and **4 10G SFP+ uplink slots**. All their **48** Gigabit Ethernet ports when integrated with an 802.3at PoE+ injector can be in full operation.

The GS-5220-48P(L)4X(R) 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 Ring, Fast Recovery for Critical Network Applications

The GS-5220-48P(L)4X(R) supports redundant ring technology and features strong, rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates advanced **ITU-T G.8032 ERPS (Ethernet Ring Protection Switching)** technology and Spanning Tree Protocol (802.1w RSTP) into customer's network to enhance system reliability and uptime in harsh environments. In a certain simple Ring network, the recovery time could be **less than 20ms** to quickly bring the network back to normal operation.

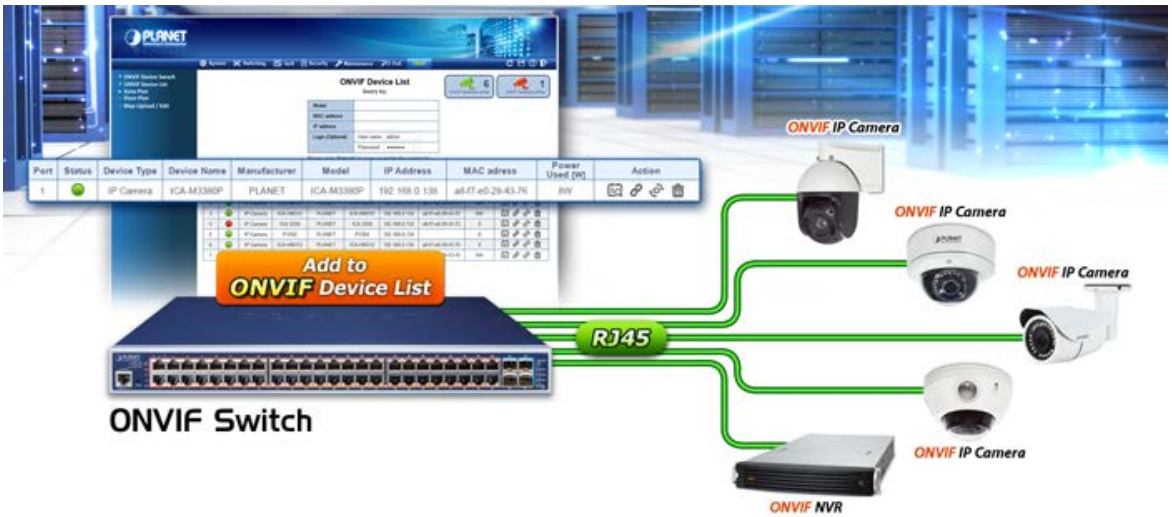


Redundant AC/DC Power Supply to Ensure Continuous Operation

The **GS-5220-48PL4XR** 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-5220-48P4X 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-5220-48P(L)4X(R) 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.



Cost-effective 10Gbps Uplink for Large Surveillance Applications

The GS-5220-48P(L)4X(R) provides IPv6/IPv4 management and built-in L2/L4 Gigabit Switching engine along with 48 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 400W for different kinds of PoE applications, the switches provide 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-5220-48P(L)4X(R) 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-5220-48P(L)4X(R) 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 PoE, they allow more flexibility in power requirement for a variety of PDs.

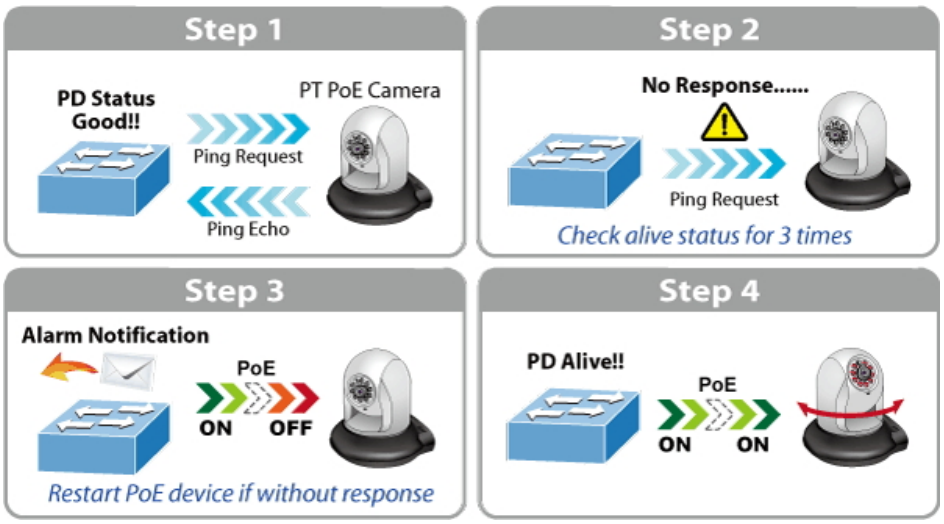
Built-in Unique PoE Functions for Surveillance Management

As a managed PoE Switch for surveillance network, the GS-5220-48P(L)4X(R) features four special PoE management functions:

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

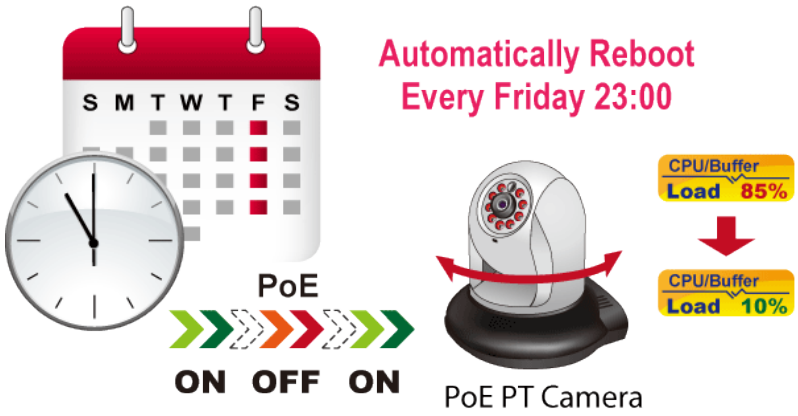
Intelligent Powered Device Alive Check

The GS-5220-48P(L)4X(R) 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-5220-48P(L)4X(R) 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 reduce administrator management burden.



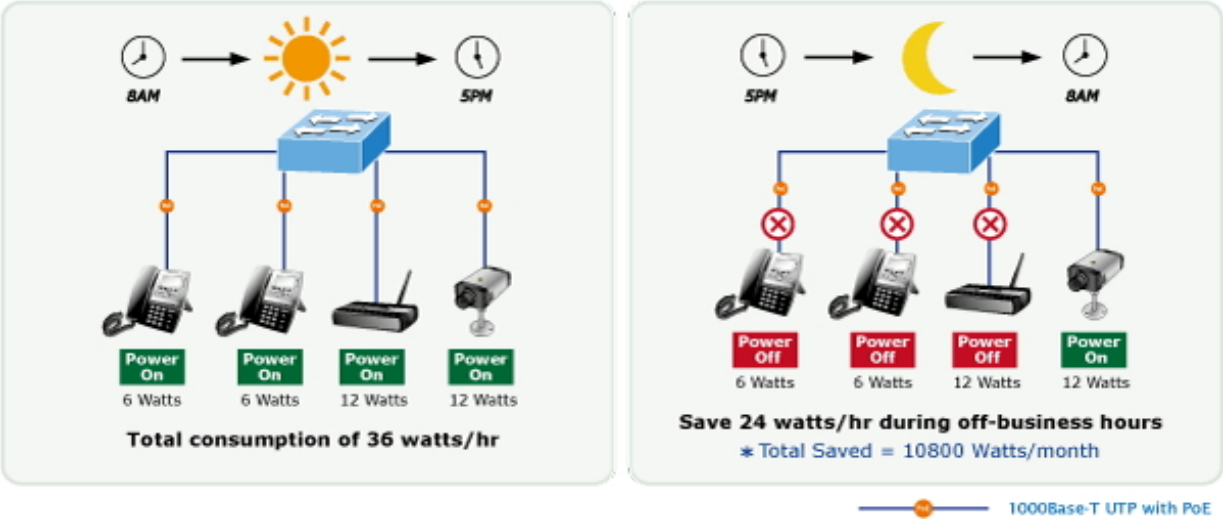
Scheduled Power Recycling

The GS-5220-48P(L)4X(R) allows each of the connected PoE IP cameras to reboot at 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-5220-48P(L)4X(R) 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-5220-48P(L)4X(R) 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.



Layer 3 Routing for Secure and Flexible Management

The GS-5220-48P(L)4X(R)enables the administrator to conveniently boost network efficiency by configuring Layer 3 IPv4/IPv6 VLAN static routing manually, and the **OSPFv2** (Open Shortest Path First) settings automatically. The OSPF is an interior dynamic routing protocol for autonomous system based on link state. The protocol creates a database for link state by exchanging link states among Layer3 switches, and then uses the Shortest Path First algorithm to generate a route table based on that database.

Robust Layer 2 Features

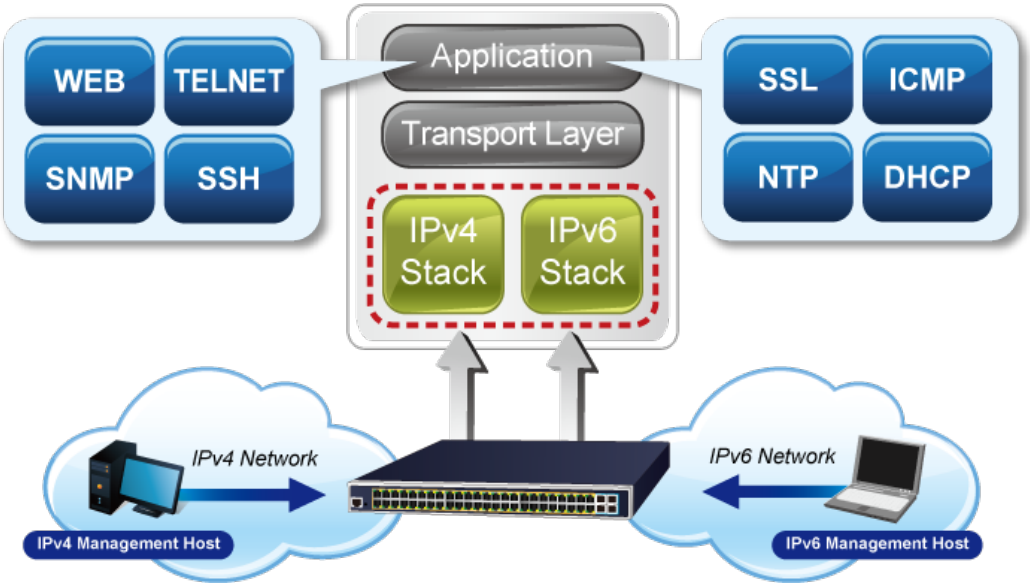
The GS-5220-48P(L)4X(R) can be programmed for advanced switch management functions such as dynamic port link aggregation, **Q-in-Q VLAN**, private VLAN, **Multiple Spanning Tree Protocol (MSTP)**, Layer 2/4 QoS, bandwidth control and **IGMP/MLD snooping**. The GS-5220-48P(L)4X(R) provides 802.1Q tagged VLAN, and the VLAN groups allowed will be maximally up to 256. Via aggregation of supporting ports, the GS-5220-48P(L)4X(R) allows the operation of a high-speed trunk combining multiple ports. The switch enables a maximum of up to 26 trunk groups with 4 ports for each trunk group and supports connection fail-over as well.

Enhanced Security

The GS-5220-48P(L)4X(R) 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. Their 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-5220-48P(L)4X(R) 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-5220-48P(L)4X(R) supports the IPv6 Protocol, they help SMBs and enterprises to step in the IPv6 era with the lowest investment, meaning the existing network facilities need not be replaced.



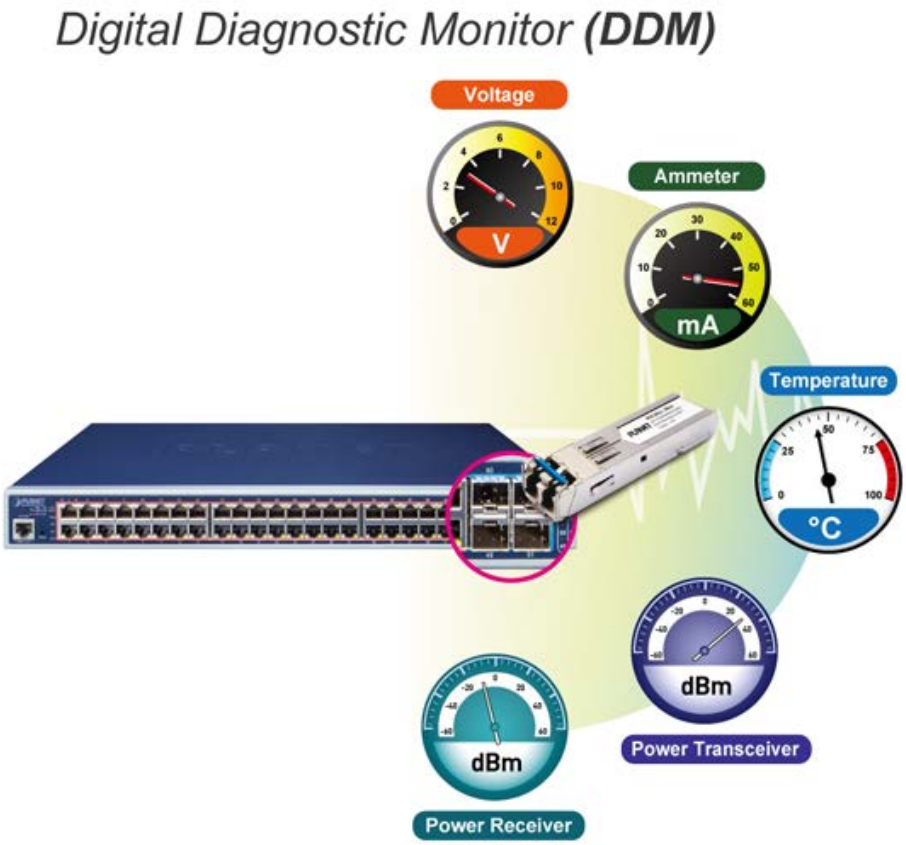
Efficient and Secure Management

For efficient management, the GS-5220-48P(L)4X(R) is equipped with console, Web and SNMP management interfaces. With the built-in Web-based management interface, the GS-5220-48P(L)4X(R) offers an easy-to-use, platform-independent management and configuration facility. The GS-5220-48P(L)4X(R) supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For text-based management, the GS-5220-48P(L)4X(R) can be accessed via Telnet and the console port. Moreover, the GS-5220-48P(L)4X(R) offers secure remote management by supporting **SSHv2**, **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-5220-48P(L)4X(R) 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-5220-48P(L)4X(R) 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-5220-48P(L)4X(R) 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

- **48 10/100/1000BASE-T** Gigabit RJ45 copper ports with 48-port **IEEE 802.3af/at PoE+** injector
- **4 10GBASE-SR/LR SFP+ slots**, compatible with 1000/2500BASE-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 48 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 4K 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 26 trunk groups with 4 ports for each 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. 128 VLAN interfaces)
- Routing table (Max. 128 routing entries)
- IPv4/IPv6 hardware static routing
- IPv4 OSPFv2

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
- **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-5220-48PL4XR)

- 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 VSC7449	x 1
CPU:	MIPS 500MHz (integrated with VSC7449)	x 1
Gigabit PHY	Microsemi VSC8512	x 2
Flash Size	64M bytes	x 1
DRAM Size	512M bytes	x 1
PoE Controller	Microsemi PD69200C	x 1
PSE PoE Manager	Microsemi PD69208M	x 6

3.2 FUNCTION SPECIFICATIONS

Product	**GS-5220-48P4X**	**GS-5220-48PL4XR**
Hardware Specifications		
Copper Ports	48 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports	
SFP+ Slots	4 10GBASE-SR/LR SFP+ interfaces (Port-49 to Port-52) Compatible with 1000/2500BASE-SX/LX/BX SFP transceiver	
Console	1 x RS232-to-RJ45 serial port (115200, 8, N, 1)	
Reset Button	< 5 sec: System reboot > 5 sec: Factory default	
Dimensions (W x D x H)	440 x 300 x 44.5 mm, 1U height	
Weight	4950g	4984g
Power Consumption	Max. 461 watts/1582 BTU	AC: Max. 900 watts/ 3,070 BTU DC: Max. 36.6 watts/124.88 BTU
Power Requirements – AC	AC 100~240V, 50/60Hz, 7A	AC 100~240V, 50/60Hz, 9A
Power Requirements – DC	--	DC 36~60V, 2A
ESD Protection	6KV DC	
Fan	3 smart fans	
LED	System: SYS (Green) AC/PWR (Green) DC (Green) (GS-5220-48PL4XR Only) Fan1/2/3 Alert (Red) PoE PWR Alert (Red) PoE Ethernet Interfaces (Port-1 to Port-48): PoE-in-use (Amber) Ethernet Interfaces (Port-1 to Port-48): 1000 LNK/ACT (Green), 10/100 LNK/ACT (Amber) 1/2.5G/10G SFP+ Interfaces (Port-49 to Port-52): 1G/2.5G (Green), 10G (Amber)	
Switching		
Switch Architecture	Store-and-Forward	

Switch Fabric	176Gbps/non-blocking	
Throughput	130Mpps@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	
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.)	720 watts (max.)@<40 degrees C 660 watts (max.)@<50 degrees C 600 watts (max.)@50 degrees C
PoE Ability PD @ 7 watts	48 units	48 units
PoE Ability PD @ 15 watts	26 units	48 units
PoE Ability PD @ 30 watts	13 units	24 units
Layer 3 Functions		
IP Interfaces	Max. 128 VLAN interfaces	
Routing Table	Max. 128 routing entries	
Routing Protocols	IPv4 OSPFv2 IPv4 hardware static routing IPv6 hardware static routing	
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 26 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
Bandwidth Control	Per port bandwidth control Ingress: 100Kbps~1000Mbps Egress: 100Kbps~1000Mbps
Security Functions	
Access Control List	IP-based ACL/MAC-based ACL ACL based on: - MAC Address - IP Address - Ethertype - Protocol Type - VLAN ID - DSCP - 802.1p Priority Up to 256 entries
Security	Port Security IP source guard Dynamic ARP inspection Command line authority control based on user level
AAA	RADIUS client TACACS+ client
Network Access Control	IEEE 802.1x port-based network access control MAC-based authentication Local/RADIUS authentication
Switch Management	
Basic Management Interfaces	Console; Telnet; Web browser; SNMP v1, v2c
Secure Management Interfaces	SSHv2, TLS, SSL, SNMP v3
System Management	Firmware upgrade by HTTP protocol through Ethernet network Configuration upload/download through HTTP Remote syslog System log LLDP protocol NTP PLANET Smart Discovery Utility
Event Management	Remote syslog Local system log SMTP
ONVIF	ONVIF device discovery ONVIF device monitoring

	Floor Map
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 MAU-MIB
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 802.3x 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 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 RFC 3810 MLD v2

	RFC 2328 OSPF v2 ITU-T G.8032 ERPS Ring
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 44.5 mm (W x D x H)

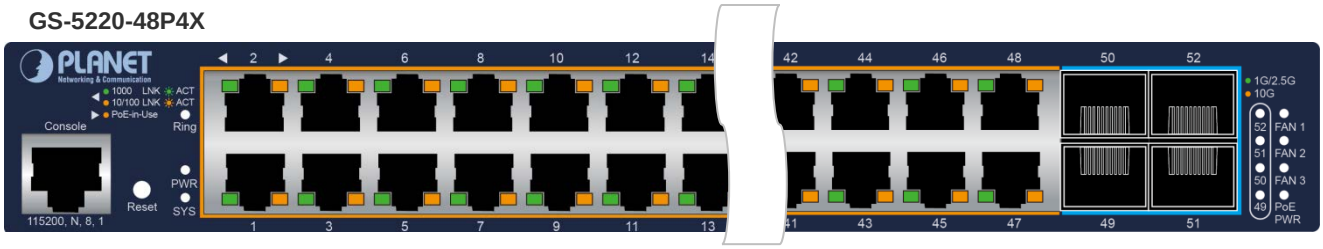
Weight:

GS-5220-48P4X: 4950g

GS-5220-48PL4XR: 4984g

■ **Front Panel:**

GS-5220-48P4X



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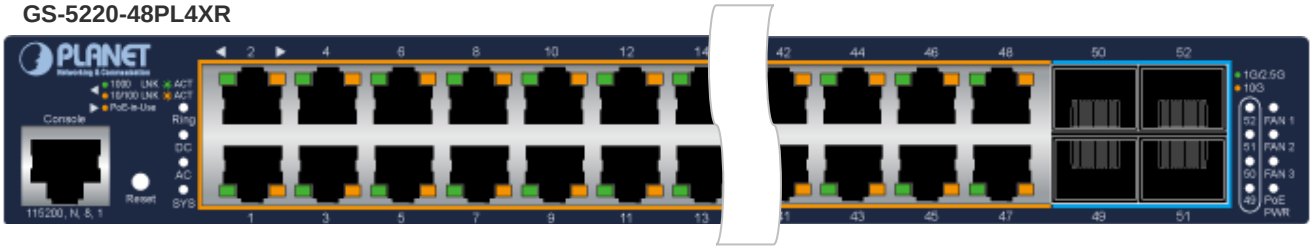

■ **LED Definition**

■ **System/Alert (GS-5220-48P4X)**

LED	Color	Function
PWR	**Green**	**Lights** to indicate that the Switch has power.
Ring	**Green**	**Lights** to indicate that the ERPS Ring has been created successfully.
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-5220-48PL4XR)**

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
Ring	**Green**	**Lights** to indicate that the ERPS Ring has been created successfully.
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-48)**

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.
	Amber	**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	**Amber**	**Lights**: To indicate the port is providing DC in-line power. **Off:** To indicate the connected device is not a PoE Powered Device (PD)

■ **1/2.5/10GBASE-SR/LR SFP+ Interfaces (Port-49 to Port-52)**

LED	Color	Function
10G	**Amber**	**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.
1G/2.5G	**Green**	**Lights**: To indicate that the port is operating at 1000/2500Mbps. **Blinks:** To indicate that the switch is actively sending or receiving data over that port.

■ **Rear Panel:**

■ **GS-5220-48P4X**

■ **GS-5220-48PL4XR**

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-5220-48P4X	GS-5220-48PL4XR
36~60V DC Power Input		--	36.6 watts/124.9 BTU
100~240V AC Power Input	System on	32 watts/109.8 BTU	32 watts/109.8 BTU
	PoE Full Loading	461 watts/1581.7 BTU	801 watts/2733 BTU

3.6 REGULATORY COMPLIANCE

FCC Class A, CE.

3.7 RELIABILITY

MTBF > 500,000 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 INFORMATION

Box Dimensions (W x D x H):	567 x 392 x 93 mm
Gross Weight:	5.5kg
Carton Dimensions (W x D x H):	585 x 206 x 412 mm
Total Weight:	12.1kg
Quantity:	2pcs per carton