

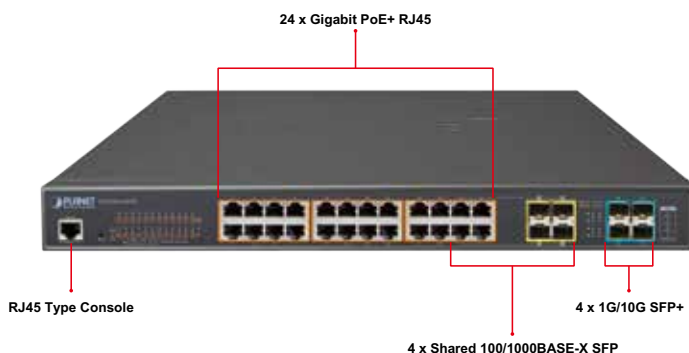
## L2+ 24-Port 10/100/1000T 802.3at PoE+ 4-Port 10G SFP+ Managed Switch



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

PLANET GS-5220-24P4X and GS-5220-24P4XR 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-5220-24P4X 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-5220-24P4XR 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-5220-24P4XR is able to act as a telecom-level device that can be located in the electronic room.

### 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
- 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



#### 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-5220-24P4X and GS-5220-24P4XR 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-5220-24P4X 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 400W 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-5220-24P4X 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-5220-24P4X 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

- 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

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.

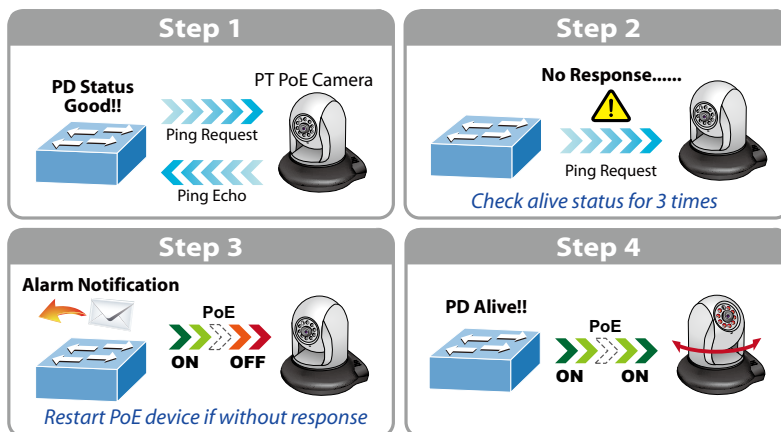
**Built-in Unique PoE Functions for Surveillance Management**

As a managed PoE Switch for surveillance network, the GS-5220-24P4X series features four special PoE management functions:

- PD Alive Check
- Scheduled Power Recycling
- PoE Schedule
- PoE usage monitoring

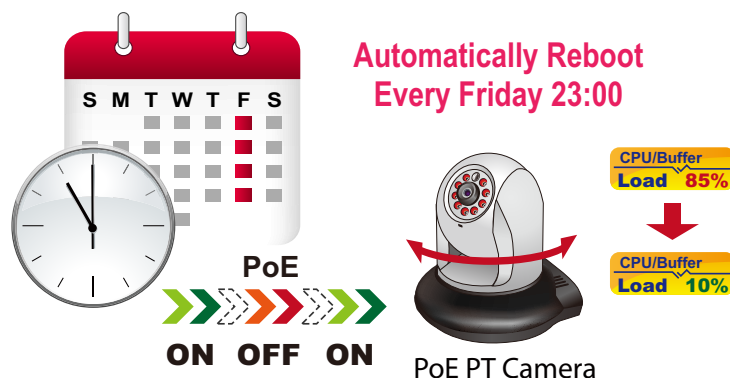
**Intelligent Powered Device Alive Check**

The GS-5220-24P4X 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-5220-24P4X 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-5220-24P4X 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.



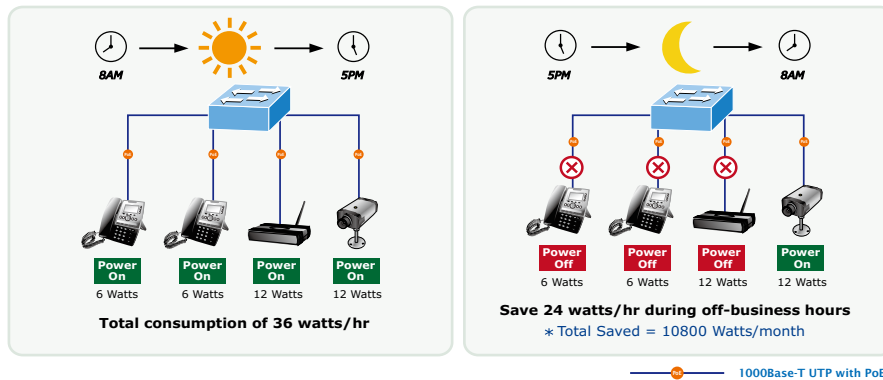
- Four RMON groups (history, statistics, alarms and events)
- IPv6 address, NTP and DNS management
- Built-in Trivial File transfer Protocol (TFTP) client
- DHCP client
- Firmware upload/download via HTTP/TFTP
- DHCP Relay
- DHCP Option 82
- Customer Privilege levels control
- NTP (network time protocol)
- 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-5220-24P4XR)**

- 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

**PoE Schedule for Energy Saving**

Besides IP surveillance, the GS-5220-24P4X 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-5220-24P4X 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 and IPv6 VLAN Routing for Secure and Flexible Management**

To help customer stay on top of business, the GS-5220-24P4X 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**

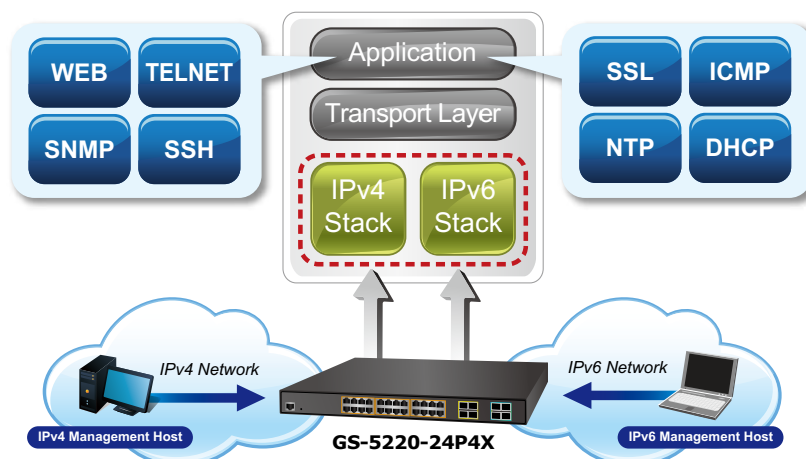
The GS-5220-24P4X series can be programmed for advanced switch management functions such as dynamic port link aggregation, Q-in-Q VLAN, private VLAN, Multiple Spanning Tree Protocol (MSTP), Layer 2/4 QoS, bandwidth control and IGMP/MLD snooping. The GS-5220-24P4X series provides 802.1Q tagged VLAN, and the VLAN groups allowed will be maximally up to 256. Via aggregation of supporting ports, the GS-5220-24P4X 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-5220-24P4X 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**

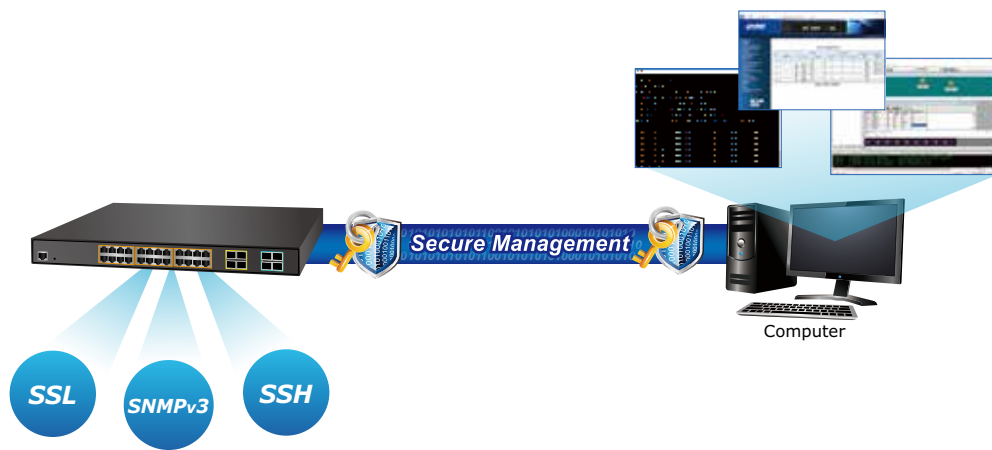
As the GS-5220-24P4X series supports the IPv6 Protocol that is backward compatible with IPv4, the GS-5220-24P4X helps SMBs and enterprises to step in the IPv6 era with the lowest investment, meaning the existing network facilities need not be replaced.



*Efficient and Secure Management*

For efficient management, the GS-5220-24P4X Managed PoE Switch series is equipped with console, Web and SNMP management interfaces. With the built-in Web-based management interface, the GS-5220-24P4X series offers an easy-to-use, platform-independent management and configuration facility. The GS-5220-24P4X series supports standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For text-based management, the GS-5220-24P4X series can be accessed via Telnet and the console port. Moreover, the GS-5220-24P4X series offers secure remote management by supporting SSH, SSL and SNMP v3 connection which encrypt the packet content at each session.

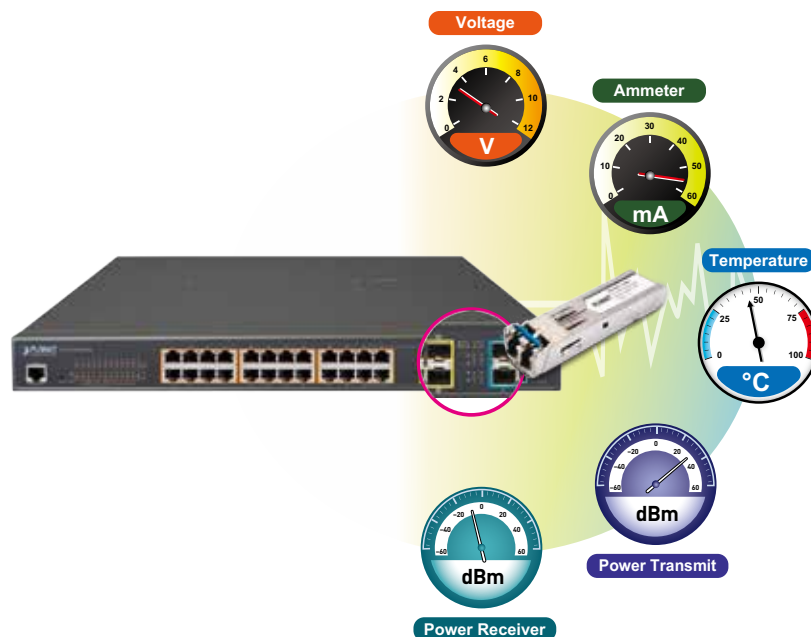
More and more engineers or administrators use Cisco command to manage Ethernet switch. For reducing product learning time, the GS-5220-24P4X series offers Cisco-like command and customers do not need to learn new command. With easy and friendly management interfaces and plenty of management functions included, the GS-5220-24P4X 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-5220-24P4X 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.

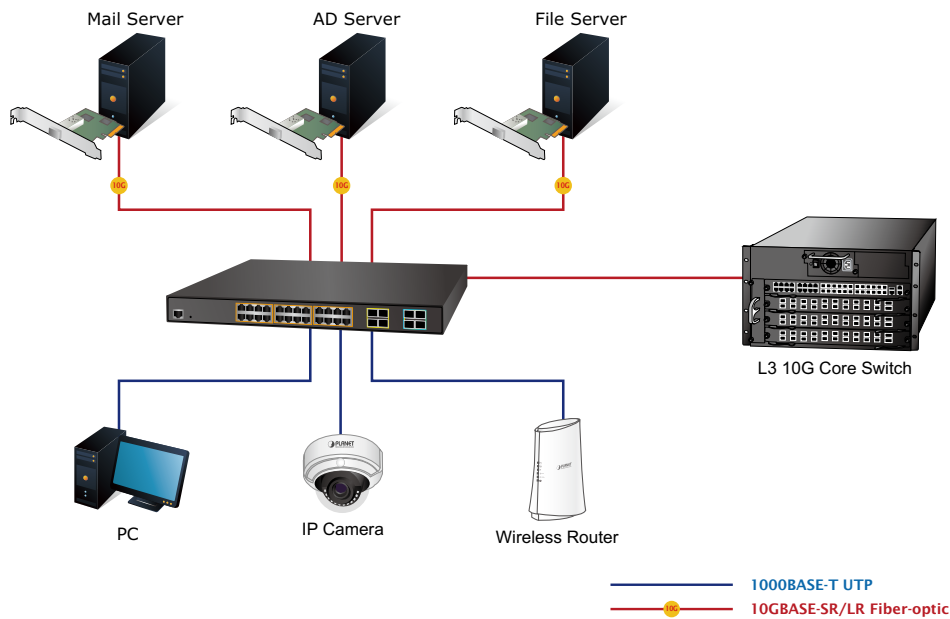
*Digital Diagnostic Monitor (DDM)*



## Applications

### Excellent 10Gbps High Bandwidth Solution to Core Network

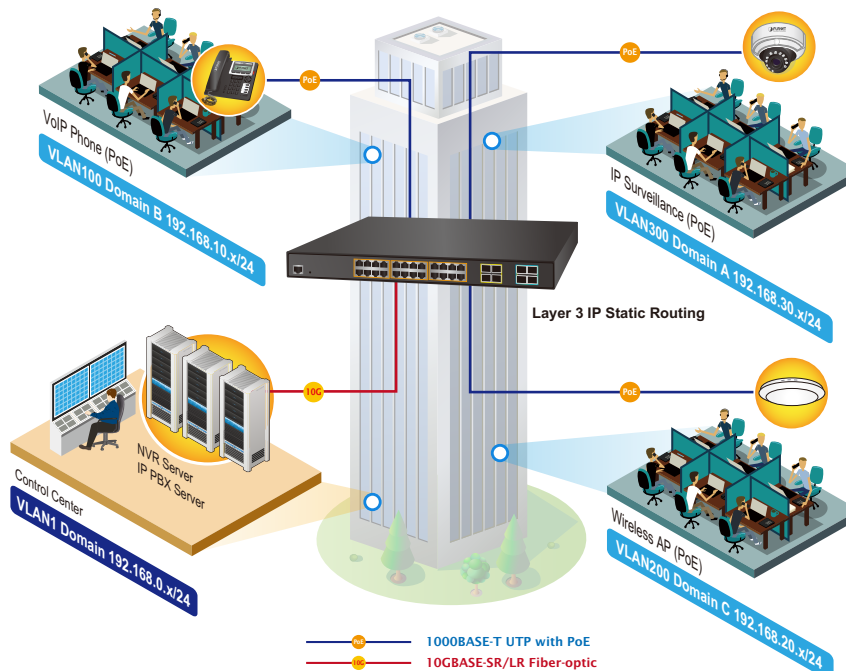
The GS-5220-24P4X series performs 128Gbps non-blocking switch fabric, so it can easily provide a local 10Gbps high bandwidth Ethernet network for the backbone of your department. With the four built-in SFP+ ports, the GS-5220-24P4X series provides the uplink to the backbone network through the 10G Ethernet SR/LR SFP+ modules. It further improves the network efficiency and protects the network clients by offering the security and QoS features.



### Layer 2+ VLAN Static Routing and PoE Application

The GS-5220-24P4X series features IEEE 802.3at PoE+ that combines up to 36-watt power output per port, and PoE budget is up to 400 watts which can deploy up to 24 PoE PD devices. With the built-in robust IPv4/IPv6 Layer 3 traffic routing protocol, the GS-5220-24P4X series ensures reliable routing between VLANs and network segments. The routing protocols can be applied by VLAN interface with up to 128 routing entries. The GS-5220-24P4X series is certainly a cost-effective and ideal solution for enterprises.

## VLAN Routing + PoE Applications



## Specifications

Product	GS-5220-24P4X	GS-5220-24P4XR
<b>Hardware Specifications</b>		
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 Supports 100/1000Mbps dual mode and DDM	
10Gbps Fiber Uplink Ports	4 1/10GBASE-SR/LR SFP+ slots 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	4M bytes	
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	
LED	System: SYS (Green) PWR (Green) (GS-5220-24P4XR showed AC) DC (Green) (GS-5220-24P4XR Only) FAN1 (Red), FAN2 (Red), FAN3 (Red), PoE PWR (Red) Ethernet Interfaces (Port 1 to Port 24): 1000 LNK/ACT (Green), 10/100 LNK/ACT (Orange) PoE Ethernet Interfaces (Port 1 to Port 24): PoE-in-Use (af/at-Orange) 100/1000Mbps SFP Combo Interfaces (Port-21 to Port-24): 1000 (Green), 100 (Orange) 1/10G SFP+ Interfaces (Port-25 to Port-28): 1000 (Green), 10G (Orange)	
<b>Power over Ethernet</b>		
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	400 watts max.	
PoE Ability	PD @ 7 watts	24 units
	PD @ 15.4 watts	24 units
	PD @ 30.8 watts	12 units
Power Requirements - AC	100~240V AC, 50/60Hz, 7A	
Power Requirements - DC	Range: 36 ~ 60V	
Power Consumption (Full Loading)	AC 110V: Max. 26.7 watts/91.6BTU (Power on without any connection) Max. 447 watts/1533.6BTU (Full loading with PoE function)	
	AC 220V: Max. 27.7 watts/95.03BTU (Power on without any connection) Max. 452 watts/1550.8BTU (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	4546g (GS-5220-24P4X)	4570g (GS-5220-24P4XR)
<b>Layer 2 Function</b>		
Basic Management Interfaces	Console, Telnet, Web browser and SNMP v1/v2c	
Secure Management Interfaces	SSH, SSL, SNMP v3	
Port Configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full or 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, up to 256 VLAN groups 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 256 VLAN groups, out of 4094 VLAN IDs
Link Aggregation	IEEE 802.3ad LACP/static trunk 14 groups of 8-port trunk supported
QoS	Traffic classification based, strict priority and WRR 8-level priority for switching - Port number - 802.1p priority - 802.1Q VLAN tag - DSCP 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
<b>Layer 3 Function</b>	
IP Interfaces	Max. 8 VLAN interfaces
Routing Table	Max. 32 routing entries
Routing Protocols	IPv4 software static routing IPv6 software static routing
<b>Management</b>	
Basic Management Interfaces	Console, Telnet, Web browser, and SNMP v1/v2c
Secure Management Interfaces	SSH/SSL, SNMP v3
SNMP MIBs	RFC 1213 MIB-II IF MIB RFC 1493 Bridge MIB RFC 1643 Ethernet MIB RFC 2863 Interface MIB RFC 2665 Ether-Like MIB RFC 2819 RMON MIB (Groups 1 and 2) RFC 2737 Entity MIB RFC 2618 RADIUS Client MIB RFC 3411 SNMP-Frameworks-MIB IEEE 802.1x PAE LLDP MAU MIB
<b>Standards Conformance</b>	
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 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus IEEE 802.1ab LLDP 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
<b>Environment</b>	
Operating	Temperature: 0 ~ 50 degrees C Relative Humidity: 5 ~ 95% (non-condensing)
Storage	Temperature: -10 ~ 70 degrees C Relative Humidity: 5 ~ 95% (non-condensing)



## Ordering Information

GS-5220-24P4X	L2+ 24-Port 10/100/1000T 802.3at PoE+ 4-Port 10G SFP+ Managed Switch
GS-5220-24P4XR	L2+ 24-Port 10/100/1000T 802.3at PoE+ 4-Port 10G SFP+ Managed Switch with System Redundant Power

## Related Products

GS-5220-16UP4S2X	L2+ 16-Port 10/100/1000T Ultra PoE + 4-Port 100/1000X SFP + 2-Port 10G SFP+ Managed Switch
GS-5220-16UP4S2XR	L2+ 16-Port 10/100/1000T Ultra PoE + 4-Port 100/1000X SFP + 2-Port 10G SFP+ Managed Switch with System Redundant Power
GS-5220-24UP4X	L2+ 24-Port 10/100/1000T Ultra PoE + 4-Port 10G SFP+ Managed Switch
GS-5220-24UP4XR	L2+ 24-Port 10/100/1000T Ultra PoE + 4-Port 10G SFP+ Managed Switch with System Redundant Power
GS-5220-24P4XV	L2+ 24-Port 10/100/1000T 802.3at PoE+ 4-Port 10G SFP+ Managed Switch with LCD Touch Screen
GS-5220-24P4XVR	L2+ 24-Port 10/100/1000T 802.3at PoE+ 4-Port 10G SFP+ Managed Switch with LCD Touch Screen and Redundant Power
GS-5220-24UP4XV	L2+ 24-Port 10/100/1000T Ultra PoE + 4-Port 10G SFP+ Managed Switch with LCD Touch Screen
GS-5220-24UP4XVR	L2+ 24-Port 10/100/1000T Ultra PoE + 4-Port 10G SFP+ Managed Switch with LCD Touch Screen and Redundant Power

## Available 10Gbps Modules

CB-DASFP-0.5M	10G SFP+ Directly-attached Copper Cable (0.5m in length)
CB-DASFP-2M	10G SFP+ Directly-attached Copper Cable (2m in length)
MTB-SR	10GBASE-SR mini-GBIC module - 300m
MTB-LR	10GBASE-LR mini-GBIC module - 10km
MTB-LA20	10GBASE-LX (WDM,TX:1270nm) mini-GBIC module - 20km
MTB-LB20	10GBASE-LX (WDM,TX:1330nm) mini-GBIC module - 20km
MTB-LA40	10GBASE-LX (WDM,TX:1270nm) mini-GBIC module - 40km
MTB-LB40	10GBASE-LX (WDM,TX:1330nm) mini-GBIC module - 40km
MTB-LA60	10GBASE-LX (WDM,TX:1270nm) mini-GBIC module - 60km
MTB-LB60	10GBASE-LX (WDM,TX:1330nm) mini-GBIC module - 60km

## Available 1000Mbps Modules

MGB-GT	SFP-Port 1000BASE-T Module
MGB-SX	SFP-Port 1000BASE-SX mini-GBIC module - 220/550m
MGB-LX	SFP-Port 1000BASE-LX mini-GBIC module - 10km
MGB-L30	SFP-Port 1000BASE-LX mini-GBIC module - 30km
MGB-L50	SFP-Port 1000BASE-LX mini-GBIC module - 50km
MGB-L70	SFP-Port 1000BASE-LX mini-GBIC module - 70km
MGB-L120	SFP-Port 1000BASE-LX mini-GBIC module - 120km
MGB-LA10	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 10km
MGB-LB10	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 10km
MGB-LA20	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 20km
MGB-LB20	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 20km
MGB-LA40	SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module - 40km
MGB-LB40	SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module - 40km

## Available 100Mbps Modules

MFB-FX	SFP-Port 100BASE-FX Transceiver (1310nm) - 2km
MFB-F20	SFP-Port 100BASE-FX Transceiver (1310nm) - 20km
MFB-F40	SFP-Port 100BASE-FX Transceiver (1310nm) - 40km
MFB-F60	SFP-Port 100BASE-FX Transceiver (1310nm) - 60km
MFB-FA20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1310nm) - 20km
MFB-FB20	SFP-Port 100BASE-BX Transceiver (WDM,TX:1550nm) - 20km