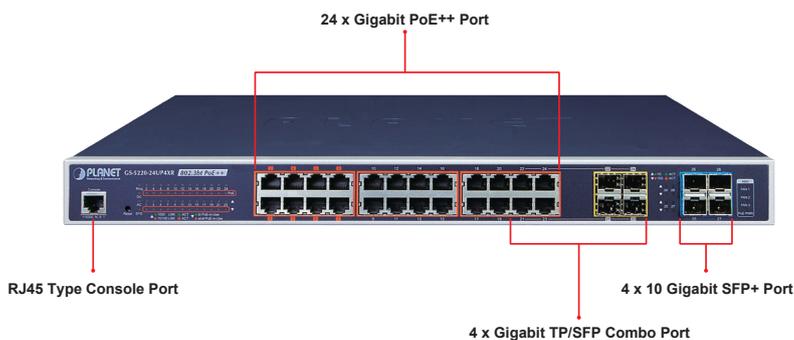


L3 24-Port 10/100/1000T 802.3bt PoE + 4-Port 10G SFP+ Managed Switch



Amazing 802.3bt PoE++ Managed Switches with Layer 3 Switching and Security

PLANET GS-5220-24UP(L)4X(R) Cost-optimized, 1U, Gigabit PoE Managed Switch Series features PLANET **intelligent PoE** functions to improve the availability of critical business applications. They provide IPv6/IPv4 dual stack management and built-in **Layer 3 OSPF/static routing** Gigabit switching along with **24 10/100/1000BASE-T** ports featuring **60 to 95 watt 802.3bt PoE++** and **4 additional 10Gigabit SFP+ ports**. With a total power budget of up to 400/600 watts for different kinds of PoE applications, the GS-5220-24UP(L)4X(R) PoE Series provides a quick, safe and cost-effective PoE network solution for small businesses and enterprises.



802.3bt PoE++ – 60~95-watt Power over 4-pair UTP Solution

As the GS-5220 PoE++ Series adopts the IEEE 802.3bt PoE++ standard and PoH technology, it is capable of sourcing up to 95 watts of power by using all the four pairs of standard Cat5e/6 Ethernet cabling to deliver power and full-speed data to each remote PoE compliant powered device (PD). It possesses triple amount of power capability than the conventional 802.3at PoE+ and is an ideal solution to satisfy the growing demand for higher power consuming network PDs, such as:

- PoE PTZ speed dome cameras
- Network devices
- Thin clients
- AIO (all-in-one) touch PCs, point of sale (POS) and information kiosks
- Remote digital signage displays
- PoE lightings

Physical Port

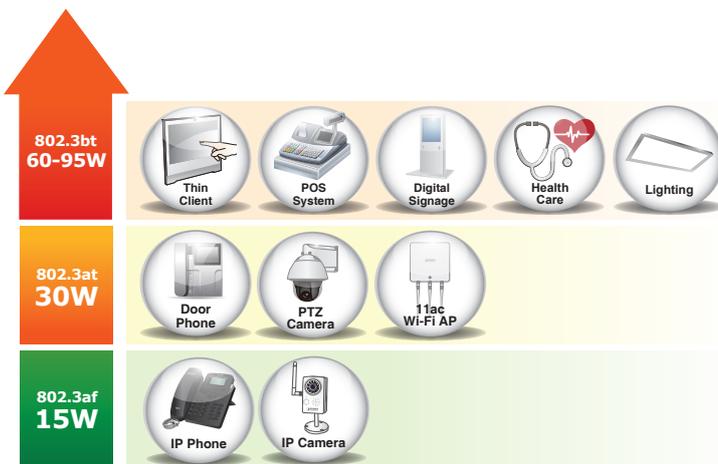
- **24 10/100/1000BASE-T** Gigabit RJ45 copper ports with **IEEE 802.3bt PoE++** injector function
- **4 100/1000BASE-X SFP** slots, shared with port-21 to port-24 compatible with 100BASE-FX SFP
- **4 10GBASE-SR/LR SFP+** slots, compatible with 1000BASE-SX/LX/BX SFP
- RJ45 console interface for switch basic management and setup

802.3bt Power over Ethernet

- Complies with IEEE 802.3bt Power over Ethernet Plus Plus standard PSE
- Backward compatible with IEEE 802.3at Power over Ethernet Plus
- Up to 24 ports of IEEE 802.3af/IEEE 802.3at/IEEE 802.3bt PoE devices powered
- 8 PoE ports with built-in 802.3bt PoE++ Type-4 90W injector function (Port-1 to Port-8)
- 16 PoE ports with built-in 802.3bt PoE++ Type-3 60W injector function (Port-9 to Port-24)
- 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
- Intelligent PoE features
 - Temperature threshold control
 - PD alive check
 - PoE schedule

Layer 3 Features

- IP dynamic routing protocol supports OSPFv2
- IPv4/IPv6 hardware static routing



802.3bt PoE++ and Advanced PoE Power Output Mode Management

To meet the demand of various powered devices consuming stable PoE power, the GS-5220 PoE++ Switch series provides six different PoE power output modes for selection.

- 95W UPoE/PoH Power Output Mode
- 90W 802.3bt PoE++ Power Output Mode
- 60W 802.3bt PoE++ Power Output Mode
- 60W Force Power Output Mode
- 30W End-span PoE Power Output Mode
- 30W Mid-span PoE Power Output Mode

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 PoE++ Series 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 to the switch series, making the deployments of surveillance and other devices easy for planning and inspection purposes. Moreover, clients can get real-time surveillance's information and online/offline status. They allow PoE reboot control from the GUI.



Built-in Unique PoE Functions for Powered Devices Management

Being the managed PoE switches for surveillance, wireless and VoIP networks, the GS-5220 PoE++ Series features the following special PoE management functions:

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

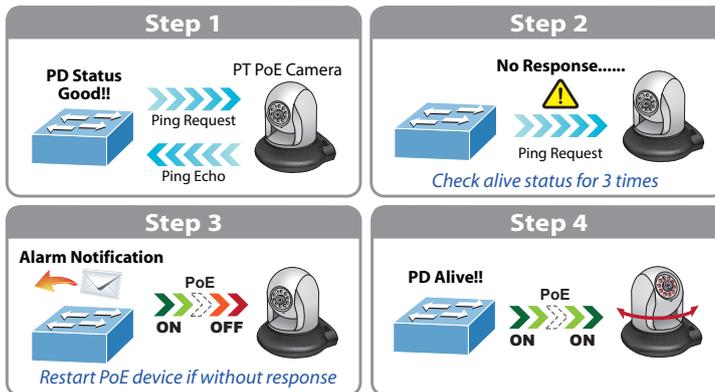
- Routing interface provides per VLAN routing mode
- IP interfaces (Max. 128 VLAN interfaces)
- Routing table (Max. 128 routing entries)

Layer 2 Features

- 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
 - GVRP (GARP VLAN Registration Protocol)
- 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 40Gbps bandwidth (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
- Supports ERPS (Ethernet Ring Protection Switching)
- Compatible with Cisco uni-directional link detection(UDLD) that monitors a link between two switches and blocks the ports on both ends of the link if the link fails at any point between the two devices
- Link Layer Discovery Protocol (LLDP)

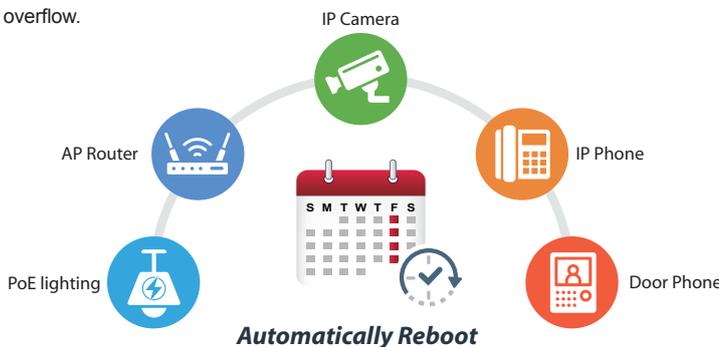
Intelligent Powered Device Alive Check

The GS-5220 PoE++ Series can be configured to monitor connected PD status in real time via ping action. Once the PD stops working and responding, the GS-5220 PoE++ Series will resume the PoE port power and bring the PD back to work. They will greatly enhance the network reliability through the PoE port resetting the PD's power source and reducing administrator management burden.



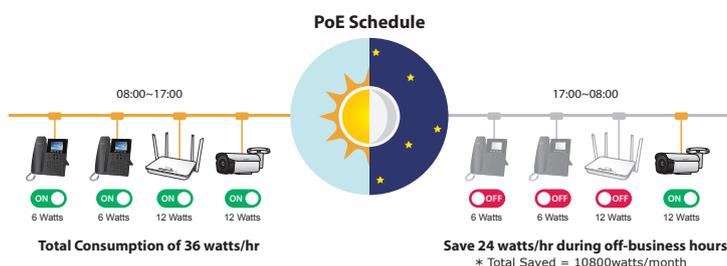
Scheduled Power Recycling

The GS-5220 PoE++ Series allows each of the connected PoE IP cameras or PoE wireless access points to reboot at a specified time each week. Therefore, they will reduce the chance of IP camera or AP crash resulting from buffer overflow.



PoE Schedule for Energy Saving

Under the trend of energy saving worldwide and contributing to environmental protection, the GS-5220 PoE++ Series can effectively control the power supply besides their capability of giving high watts power. The "PoE schedule" function helps you to enable or disable PoE power feeding for each PoE port during specified time intervals and it is a powerful function to help SMBs or enterprises save power and money. It also increases security by powering off PDs that should not be in use during non-business hours.



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 IPv4 IGMP snooping v1, v2 and v3
- Supports IPv6 MLD snooping v1 and v2
- Querier mode support
- IPv4 IGMP snooping port filtering
- IPv6 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
 - Guest VLAN assigns clients to a restricted VLAN with limited services
- 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

PoE Usage Monitoring

Via the power usage chart in the web management interface, the GS-5220 PoE++ Series enables the administrator to monitor the status of the power usage of the connected PDs in real time. Thus, they greatly enhance the management efficiency of the facilities.

Layer 3 Routing Support

The GS-5220 PoE++ Series 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 Layer 3 switches, and then uses the Shortest Path First algorithm to generate a route table based on that database.

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 PoE++ Series 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.

Redundant AC/DC Power Supply to Ensure Continuous Operation

The GS-5220-24UP(L)4XR are 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-5220-24UP(L)4XR are 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 PoE++ Series features a 19-inch metal housing, a low noise design and an effective ventilation system. They support the smart fan technology that automatically controls the speed of the built-in fan to reduce noise and maintain the temperature of the PoE switch for optimal power output capability. The GS-5220 PoE++ Series is able to operate reliably, stably and quietly in any environment without affecting its performance.

Management

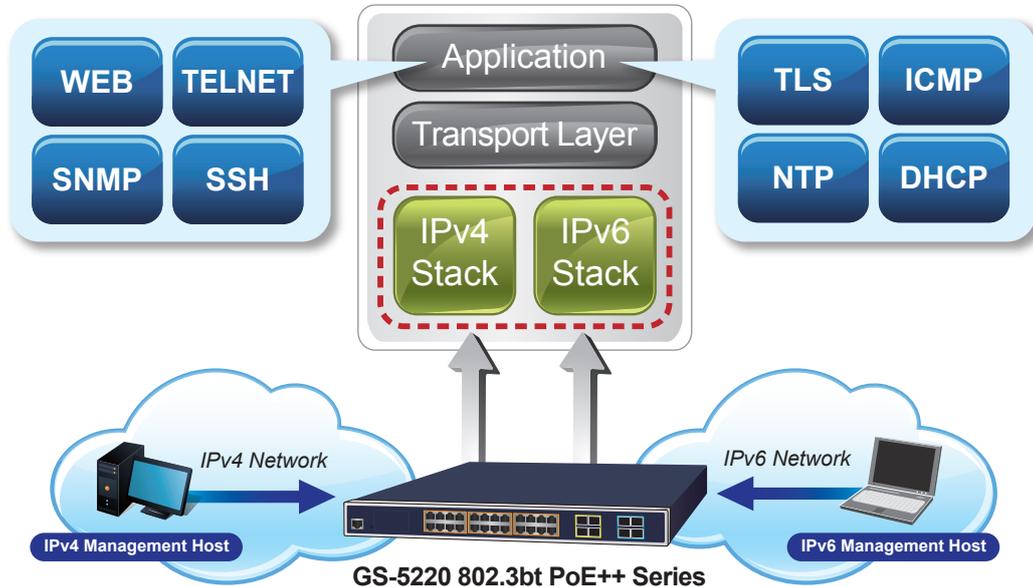
- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
 - Console/Telnet Command Line Interface
 - Web switch management
 - SNMP v1, v2c, and v3 switch management
 - SSH, TLS, SSL and SNMPv3 secure access
- SNMP Management
 - Four RMON groups (history, statistics, alarms and events)
 - SNMP trap for interface Link Up and Link Down notification
- 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
 - SFP-DDM (Digital Diagnostic Monitor)
 - ICMPv6/ICMPv4 remote ping
 - Cable diagnostic technology provides the mechanism to detect and report potential cabling issues
- SMTP/Syslog remote alarm
- System Log
- PLANET UNI-NMS (Universal Network Management) and Smart Discovery Utility for deployment management
- Smart fan with speed control

Redundant Power System (GS-5220-24UP(L)4XR)

- 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

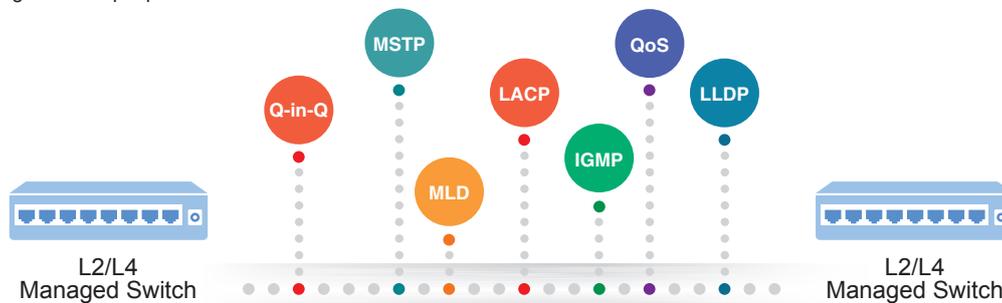
Solution for IPv6 Networking

By supporting IPv6/IPv4 dual stack and plenty of management functions with easy and friendly user interfaces, the GS-5220 PoE++ Series is the best choice for IP surveillance, VoIP and wireless service providers to deploy the IPv6 network. They also help the SMBs to step in the IPv6 era with the lowest investment and without having to replace the network facilities while the ISPs construct the IPv6 FTTx edge network.



Robust Layer 2 Features

The GS-5220 PoE++ 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 GS-5220 PoE++ Series allows the operation of a high-speed trunk combining with multiple ports.



Powerful Security

The GS-5220 PoE++ 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 PoE++ 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

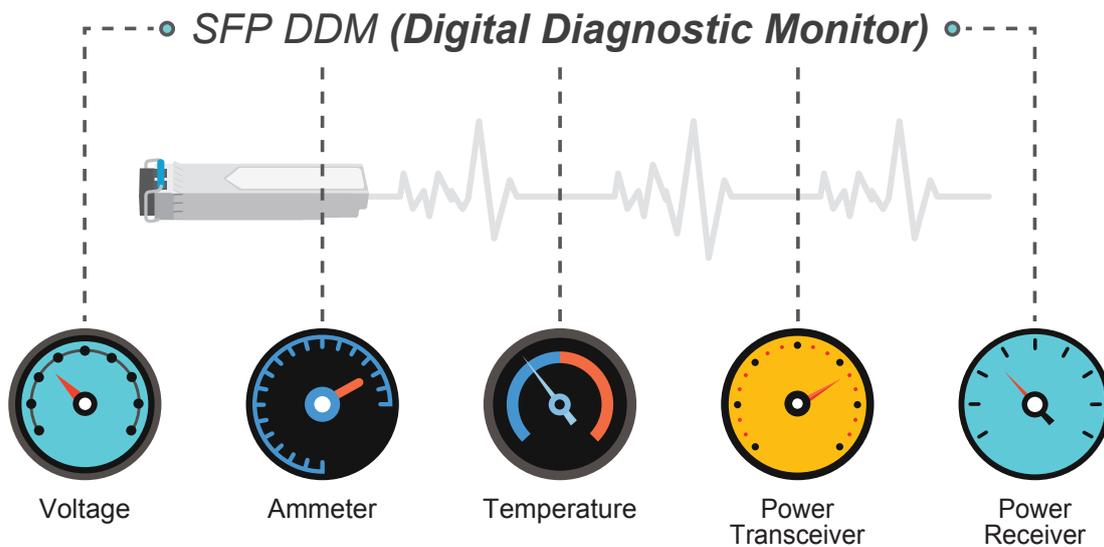
For efficient management, the GS-5220 PoE++ Series is equipped with console, web and SNMP management interfaces. With the built-in web-based management interface, it offers an easy-to-use, platform independent management and configuration facility. The GS-5220 PoE++ Series supports SNMP and it can be managed via any management software based on the standard SNMP v1 or v2 Protocol. For reducing product learning time, the GS-5220 PoE++ 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 PoE++ 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 PoE++ Series 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 10/20/40/60/80/120 km (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

Intelligent SFP/SFP+ Diagnosis Mechanism

The GS-5220 PoE++ Series supports **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.

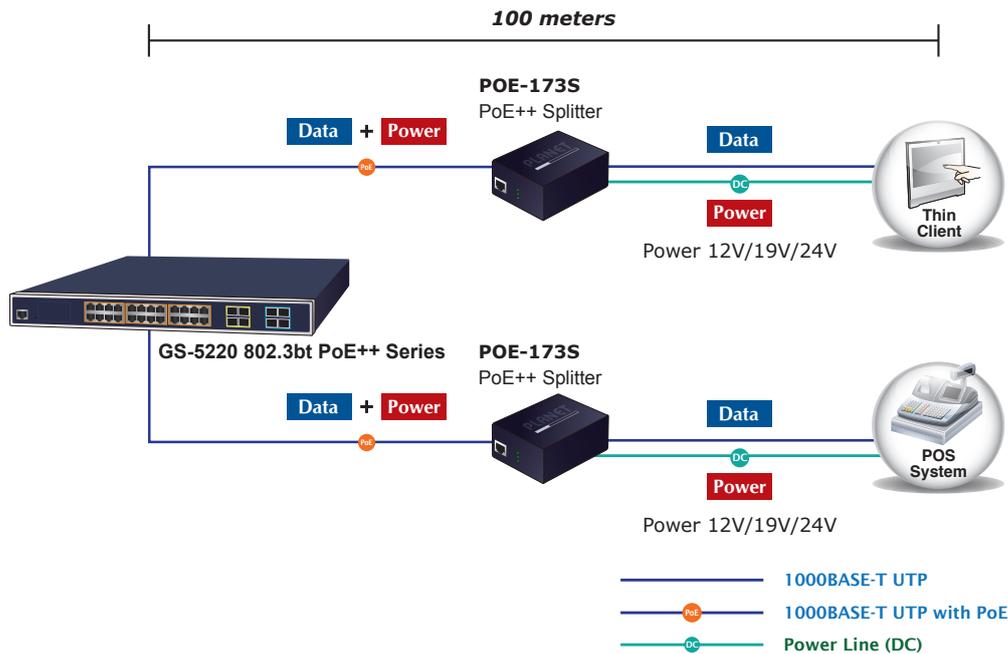


Applications

Latest 802.3bt PoE++ Networking Solution

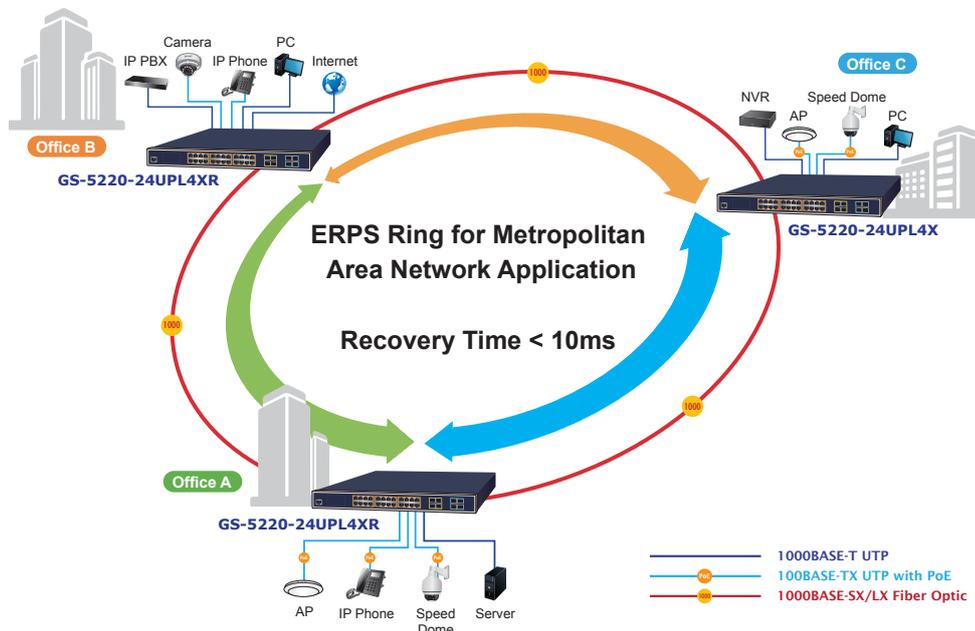
The GS-5220 PoE++ Series provides the easiest way to power your Ethernet devices such as IP camera on the ceiling and the wireless access point installed on the top of the building. With 24 10/100/1000BASE-T Gigabit Ethernet ports, the GS-5220 PoE++ Series supports full 54V DC power for any remote IEEE 802.3at/IEEE 802.3bt powered device (PD).

To control the power system of your networking devices, the GS-5220 PoE++ Series can directly co-work with network devices such as PoE IP phone to build VoIP telephony network in the office. The 802.3bt PoE++ injector hub can be directly connected to any third-party IEEE 802.3bt and 802.3at PoE compliant devices installed within 100 meters. Furthermore, the GS-5220 PoE++ Series can extend much longer distance by using PLANET PoE Extender for powering up the PoE PD which can be installed over more than 100 meters away.



Optimal Redundant Ring for Faster Recovery of Managed Network

The GS-5220 PoE++ Series 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 10ms** to quickly bring the network back, thus enabling the management network to keep on operating.



Specifications

Product	GS-5220-24UP4X	GS-5220-24UP4XR	GS-5220-24UPL4X	GS-5220-24UPL4XR
Hardware Specifications				
Hardware Version	3			
Copper Ports	24 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports			
SFP Slots	4 100/1000BASE-X SFP interfaces, shared with Port-21 to Port-24 Compatible with 100BASE-FX SFP transceiver			
SFP+ Slots	4 10GBASE-SR/LR SFP+ interfaces (Port-25 to Port-28) Compatible with 1000BASE-SX/LX/BX SFP transceiver			
Console	1 x RS232-to-RJ45 serial port (115200, 8, N, 1)			
Switch Architecture	Store-and-Forward			
Switch Fabric	128Gbps/non-blocking			
Throughput	95.23Mpps@64Bytes			
Address Table	16K entries, automatic source address learning and aging			
Shared Data Buffer	32M bits			
SDRAM	512Mbytes			
Flash Memory	64Mbytes			
Jumbo Frame	10K bytes			
Flow Control	IEEE 802.3x pause frame for full duplex Back pressure for half duplex			
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	4551g	4588g	5082g	5119g
Power Consumption	Max. 446.6 watts/1522.9 BTU	AC: Max. 446.6 watts/1522.9 BTU DC: Max. 33.9 watts/115.5 BTU	Max. 659.9 watts/2249.2 BTU	AC: Max.659.9 watts/2249.2 BTU DC: Max. 35.1 watts/119.7 BTU
Power Requirements – AC	AC 100~240V, 50/60Hz, 7A		AC 100~240V, 50/60Hz, 10A	
Power Requirements – DC	--	DC 36~60V, 2A	--	DC 36~60V, 2A
ESD Protection	6KV DC			
Fan	3 smart fans			
LED	System: SYS (Green) AC/PWR (Green) DC (Green) (GS-5220-24UP(L)4XR Only) Ring (Green) Fan1/2/3 Alert (Red) PoE PWR Alert (Red) PoE Ethernet Interfaces (Port-1 to Port-24): bt PoE (Green) , af/at PoE (Amber) Ethernet Interfaces (Port-1 to Port-24): 1000 LNK/ACT (Green), 10/100 LNK/ACT (Amber) 100/1000Mbps SFP Combo Interfaces (Port 21 to Port 24): 1000 (Green), 100 (Amber) 1/10G SFP+ Interfaces (Port-25 to Port-28) : 1G (Green), 10G (Amber)			
Power over Ethernet				
PoE Standard	802.3bt PoE++ PSE Type-4 and Type-4 PSE Backward compatible with IEEE 802.3af/802.3at PoE PSE			
PoE Power Supply Type	<ul style="list-style-type: none"> ■ 802.3bt PoE++ ■ UPoE ■ End-span ■ Mid-span ■ Force 			
PoE Power Output	Per port 52~54V DC - 802.3bt Type-4 mode, Port-1 to Port-8: maximum 90 watts - 802.3bt Type-3 mode, Port-9 to Port-24: maximum 60 watts - UPoE mode, Port-1 to Port-8: maximum 95 watts - UPoE-mode, Port-9 to Port-24: maximum 72 watts - End-span mode: maximum 36 watts - Mid-span mode: maximum 36 watts - Force mode: maximum 60 watts			

Power Pin Assignment	<ul style="list-style-type: none"> ■ 802.3bt : 1/2(-), 3/6(+),4/5(+), 7/8(-) ■ UPoE : 1/2(-), 3/6(+),4/5(+), 7/8(-) ■ End-span : 1/2(-), 3/6(+) ■ Mid-span : 4/5(+), 7/8(-) 	
PoE Power Budget	400 watts (max.)	600 watts (max.)
PoE Ability PD @ 15 watts	24 units	24 units
PoE Ability PD @ 30 watts	13 units	20 units
PoE Ability PD @ 60 watts	6 units	10 units
PoE Management Functions		
Active PoE Device Detection	Yes	
PoE Recycled Power	Yes, daily or predefined schedule	
PoE Schedule	4 schedule profiles	
PoE System Management	System PoE Admin control PoE Legacy mode Over-temperature threshold alarm PoE usage threshold alarm	
PoE Port Management	Port Enable/Disable/Schedule PoE mode control - 802.3bt - UPoE - 802.3at End-span - 802.3at Mid-span Force mode Port Priority	
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) GVRP Up to 255 VLAN groups, out of 4095 VLAN IDs	
Link Aggregation	IEEE 802.3ad LACP/static trunk 14 groups with 8 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)	
IGMP Snooping	IPv4 IGMP (v1/v2/v3) snooping IPv4 IGMP querier mode support Up to 255 multicast groups	
MLD Snooping	IPv6 MLD (v1/v2) snooping IPv6 MLD querier mode support Up to 255 multicast groups	
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	

Bandwidth Control	Per port bandwidth control Ingress: 100Kbps~1000Mbps Egress: 100Kbps~1000Mbps	
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	
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	
Management		
Basic Management Interfaces	Console; Telnet; Web browser; SNMP v1, v2c	
Secure Management Interfaces	SSHv2, TLSv1.2, 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	
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	IEEE 802.3bt 4-pair Power over Ethernet IEEE 802.3ah OAM IEEE 802.1ag Connectivity Fault Management (CFM) 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 G.8032 ERPS Ring 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)	

Ordering Information

GS-5220-24UP4X	L3 24-Port 10/100/1000T 802.3bt PoE + 4-Port 10G SFP+ Managed Switch (400W)
GS-5220-24UP4XR	L3 24-Port 10/100/1000T 802.3bt PoE + 4-Port 10G SFP+ Managed Switch with System Redundant Power (400W)
GS-5220-24UPL4X	L3 24-Port 10/100/1000T 802.3bt PoE + 4-Port 10G SFP+ Managed Switch (600W)
GS-5220-24UPL4XR	L3 24-Port 10/100/1000T 802.3bt PoE + 4-Port 10G SFP+ Managed Switch with System Redundant Power (600W)

Related Products

GS-5220-16UP4S2X	L3 16-Port 10/100/1000T 802.3bt PoE + 4-Port 100/1000X SFP + 2-Port 10G SFP+ Managed Switch
GS-5220-16UP4S2XR	L3 16-Port 10/100/1000T 802.3bt PoE + 4-Port 100/1000X SFP + 2-Port 10G SFP+ Managed Switch with system redundant power
GS-4210-16UP4C	16-Port 10/100/1000T 802.3bt PoE + 4-Port Gigabit TP/SFP Combo Managed Switch (400W)
GS-4210-24UP4C	24-Port 10/100/1000T 802.3bt PoE + 4-Port Gigabit TP/SFP Combo Managed Switch (600W)
UPOE-800G	8-Port 10/100/1000T 802.3bt PoE Managed Injector Hub (400W)
UPOE-1600G	16-Port 10/100/1000T 802.3bt PoE Managed Injector Hub (600W)
UPOE-2400G	24-Port 10/100/1000T 802.3bt PoE Managed Injector Hub (800W)
POE-171A-60	Single-Port 10/100/1000Mbps 802.3bt PoE++ Injector (60 watts, external power supply)
POE-171A-95	Single-Port 10/100/1000Mbps 802.3bt PoE++ Injector (95 watts, external power supply)
POE-173S	Single-Port 10/100/1000Mbps 802.3bt PoE++ Splitter (12V/19V/24V)
IPOE-173S	Industrial Single-Port 10/100/1000Mbps 802.3bt PoE++ Splitter (12V/24V, -40~75 degrees C)

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-RJ	Mini GBIC 10G TP Module - 30m
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

Gigabit Ethernet Transceiver (1000BASE-X SFP)

Model	DDM	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MGB-GT	--	1000	Copper	--	100m	--	0 ~ 60 degrees C
MGB-SX(V2)	YES	1000	LC	Multi Mode	550m	850nm	0 ~ 60 degrees C
MGB-SX2(V2)	YES	1000	LC	Multi Mode	2km	1310nm	0 ~ 60 degrees C
MGB-LX(V2)	YES	1000	LC	Single Mode	20km	1310nm	0 ~ 60 degrees C
MGB-L40	YES	1000	LC	Single Mode	40km	1310nm	0 ~ 60 degrees C
MGB-L80	YES	1000	LC	Single Mode	80km	1550nm	0 ~ 60 degrees C
MGB-L120(V2)	YES	1000	LC	Single Mode	120km	1550nm	0 ~ 60 degrees C

Gigabit Ethernet Transceiver (1000BASE-BX, Single Fiber Bi-directional SFP)

Model	DDM	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MGB-LA10(V2)	YES	1000	WDM(LC)	Single Mode	10km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB10(V2)		1000	WDM(LC)	Single Mode	10km	1550nm	1310nm	0 ~ 60 degrees C
MGB-LA20(V2)	YES	1000	WDM(LC)	Single Mode	20km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB20(V2)		1000	WDM(LC)	Single Mode	20km	1550nm	1310nm	0 ~ 60 degrees C
MGB-LA40(V2)	YES	1000	WDM(LC)	Single Mode	40km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB40(V2)		1000	WDM(LC)	Single Mode	40km	1550nm	1310nm	0 ~ 60 degrees C
MGB-LA80	YES	1000	WDM(LC)	Single Mode	80km	1490nm	1550nm	0 ~ 60 degrees C
MGB-LB80		1000	WDM(LC)	Single Mode	80km	1550nm	1490nm	0 ~ 60 degrees C