

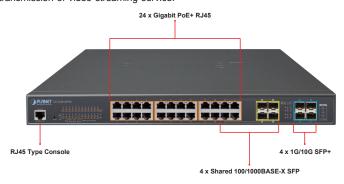
L2+ 24-Port 10/100/1000T 802.3at PoE + 4-Port 10G SFP+ Managed Switch (600W)



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

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

The GS-5220-24PL4X and GS-5220-24PL4XR 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-5220-24PL4XR is particularly equipped with one 100~240V AC power supply unit and one 36~60V DC power supply unit to provide an enhanced reliable and scalable redundant power supply. The continuous power system is specifically designed to fulfill the demands of high-tech facilities requiring the highest power integrity. With the 36~60V DC power supply, the GS-5220-24PL4XR is able to act as a telecom-level device that can be located in the electronic room.



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 interfaces 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



Convenient and Smart ONVIF Devices with Detection Feature

PLANET has newly developed an awesome feature -- ONVIF Support -- which is specifically designed for co-operating with Video IP Surveillances. From the GS-5220-24PL4X and GS-5220-24PL4XR GUI, clients just need one click to search and show all of the ONVIF devices via network application. In addition, clients can upload floor images into switch and 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-5220-24PL4X and GS-5220-24PL4XR provide IPv6/IPv4 management and built-in L2/L4 Gigabit Switching engine along with 24 10/100/1000BASE-T ports featuring 36-watt 802.3at PoE+, and 4 10Gbps SFP+ fiber slots. With a total power budget of up to 600W for different kinds of PoE applications, it provides a quick, safe and cost-effective Power over Ethernet network solution to IP security surveillance for small businesses and enterprises.

Flexible and Extendable 10Gbps Ethernet Solution

10Gbps Ethernet is a big leap in the evolution of Ethernet. Each of the SFP+ slot supports dual speed and 10GBASE-SR/LR, meaning the administrator now can flexibly choose the suitable SFP+ transceiver according to the transmission distance or the transmission speed required to extend the network efficiently. With their 4-port, 10Gbps Ethernet link capability, the GS-5220-24PL4X and GS-5220-24PL4XR provide broad bandwidth and powerful processing capacity.

Centralized Power Management for Gigabit Ethernet PoE Networking

To fulfill the needs of higher power required PoE network applications with Gigabit speed transmission, the GS-5220-24PL4X and GS-5220-24PL4XR feature 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 standard, it allows more flexibility in power requirement for a variety of PDs.

Built-in Unique PoE Functions for Surveillance Management

As managed PoE Switches for surveillance network, the GS-5220-24PL4X and GS-5220-24PL4XR feature four special PoE management functions:

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

Intelligent Powered Device Alive Check

The GS-5220-24PL4X and GS-5220-24PL4XR can be configured to monitor connected PD status in real time via ping action. Once the PD stops working and has no response, the GS-5220-24PL4X and GS-5220-24PL4XR 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 reduces administrator management burden.

- · Supports Spanning Tree Protocol
 - IEEE 802.1D Spanning Tree Protocol
 - IEEE 802.1w Rapid Spanning Tree Protocol
 - IEEE 802.1s Multiple Spanning Tree Protocol, spanning tree by VLAN
 - BPDU Guard
- · Supports Link Aggregation
 - 802.3ad Link Aggregation Control Protocol (LACP)
 - Cisco ether-channel (static trunk)
 - Maximum 10 trunk groups, up to 16 ports per trunk group
 - Up to 32Gbps bandwidth in duplex mode
- Provides port mirror (many-to-1)
- Port mirroring to monitor the incoming or outgoing traffic on a particular port
- · Loop protection to avoid broadcast loops

Layer 3 IP Routing Features

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

Quality of Service

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

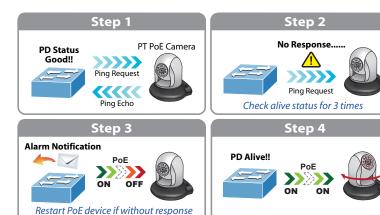
Multicast

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

Security

- IEEE 802.1x port-based/MAC-based network access authentication
- Built-in RADIUS client to cooperate with the RADIUS servers
- RADIUS/TACACS+ customers access authentication





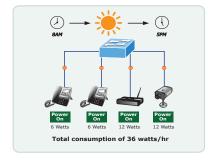
Scheduled Power Recycling

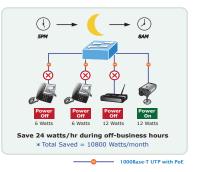
The GS-5220-24PL4X and GS-5220-24PL4XR allow each of the connected PoE IP cameras to reboot in a specific time each week. Therefore, this feature will reduce the chance of IP camera crash resulting from buffer overflow.



PoE Schedule for Energy Saving

Besides IP surveillance, the GS-5220-24PL4X and GS-5220-24PL4XR are certainly applicable for constructing any PoE network including VoIP and wireless LAN. Under the trend of energy saving worldwide and contributing to environment protection on the Earth, the GS-5220-24PL4X and GS-5220-24PL4XR 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.





IPv4 and IPv6 VLAN Routing for Secure and Flexible Management

To help customer stay on top of business, the GS-5220-24PL4X and GS-5220-24PL4XR not only offer 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.

- · IP-based access control List (ACL)
- · MAC-based access control list
- DHCP snooping to filter distrusted DHCP messages
- Dynamic ARP inspection discards ARP packets with invalid MAC address to IP address binding
- · IP source guard prevents IP spoofing attacks
- IP address access management to prevent unauthorized intruder

Management

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

Redundant Power System (GS-5220-24PL4XR)

- Redundant 100~240V AC/36~60V DC dual power
- · Active-active redundant power failure protection
- · Backup of catastrophic power failure on one supply
- · Fault tolerance and resilience



Robust Layer 2 Features

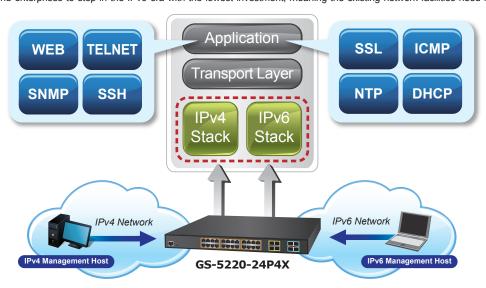
The GS-5220-24PL4X and GS-5220-24PL4XR can be programmed for advanced switch management functions such as dynamic port link aggregation, Q-in-Q VLAN, private VLAN, Multiple Spanning Tree Protocol (MSTP), Layer 2/4 QoS, bandwidth control and IGMP/MLD snooping. The GS-5220-24PL4X and GS-5220-24PL4XR provide 802.1Q tagged VLAN, and the VLAN groups allowed will be maximally up to 256. Via aggregation of supporting ports, the GS-5220-24PL4X and GS-5220-24PL4XR allow the operation of a high-speed trunk combining multiple ports. Supporting 14 trunk groups, they enable a maximum of 8 ports per trunk and support connection fail-over as well.

Enhanced Security

The GS-5220-24PL4X and GS-5220-24PL4XR offer comprehensive Layer 2 to Layer 4 Access Control List (ACL) for enforcing security to the edge. They 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-5220-24PL4X and GS-5220-24PL4XR also provide functions of DHCP snooping, IP source guard and dynamic ARP inspection so as to prevent IP from attacking and discarding ARP packets with invalid MAC address. The network administrators can now construct a highly-secure corporate network with considerably less time and effort than before.

IPv6/IPv4 Dual Stack

As the GS-5220-24PL4X and GS-5220-24PL4XR support the IPv6 Protocol that is backward compatible with IPv4, the GS-5220-24PL4X and GS-5220-24PL4XR 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 Managed PoE Switch series is equipped with console, Web and SNMP management interfaces. With the built-in Web-based management interface, the GS-5220-24PL4X and GS-5220-24PL4XR offer an easy-to-use, platform-independent management and configuration facility. The GS-5220-24PL4X and GS-5220-24PL4XR support standard Simple Network Management Protocol (SNMP) and can be managed via any standard-based management software. For text-based management, the GS-5220-24PL4X and GS-5220-24PL4XR can be accessed via Telnet and the console port. Moreover, the GS-5220-24PL4X and GS-5220-24PL4XR offer secure remote management by supporting SSH, SSL and SNMP v3 connection which encrypt the packet content at each session.

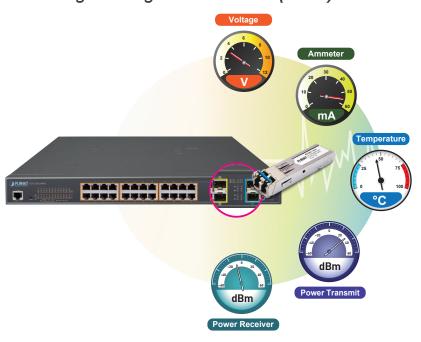




Intelligent SFP Diagnosis Mechanism

The GS-5220-24PL4X and GS-5220-24PL4XR support 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.

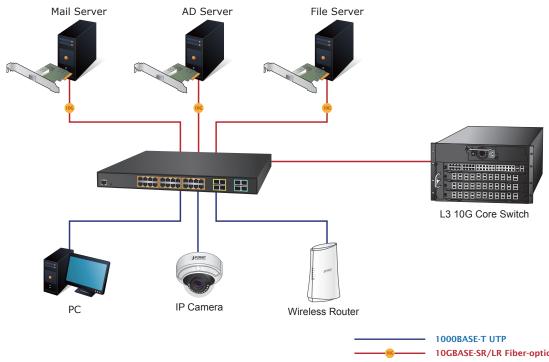
Digital Diagnostic Monitor (DDM)



Applications

Excellent 10Gbps High Bandwidth Solution to Core Network

The GS-5220-24PL4X and GS-5220-24PL4XR perform 128Gbps non-blocking switch fabric, so they 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-5220-24PL4X and GS-5220-24PL4XR provide the uplink to the backbone network through the 10G Ethernet SR/LR SFP+ modules. They further improve the network efficiency and protect the network clients by offering the security and QoS features.

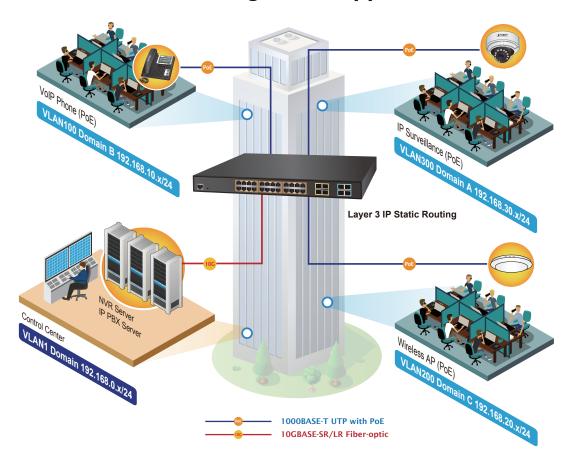




Layer 2+ VLAN Static Routing and PoE Application

The GS-5220-24PL4X and GS-5220-24PL4XR feature IEEE 802.3at PoE+ that combines up to 36-watt power output per port, and PoE budget is up to 600 watts which can deploy up to 24 PoE PD devices. With the built-in robust IPv4/IPv6 Layer 3 traffic routing protocol, the GS-5220-24PL4X and GS-5220-24PL4XR ensure reliable routing between VLANs and network segments. The routing protocols can be applied by VLAN interface with up to 32 routing entries. The GS-5220-24PL4X and GS-5220-24PL4XR are certainly a cost-effective and ideal solution for enterprises.

VLAN Routing + PoE Applications





Specifications

Product		GS-5220-24PL4X	GS-5220-24PL4XR	
Hardware Specificati	ons			
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				
Address Table		95 Mpps@64 bytes 16K entries, automatic source address learning and aging		
		32M bytes	, and aging	
Shared Data Buffer 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-5220-24PL4XR showed ACDC (Green) (GS-5220-24PL4XR Only) FAN1 (Red), FAN2 (Red), FAN3 (Red), POE PEthernet Interfaces (Port 1 to Port 24): 1000 LNK/ACT (Green), 10/100 LNK/ACT (OraPoE Ethernet Interfaces (Port 1 to Port 24): POE-in-Use (af/at-Orange) 100/1000Mbps SFP Combo Interfaces (Port-2:1000 (Green), 100 (Orange) 1/10G SFP+ Interfaces (Port-25 to Port-28): 1000 (Green), 10G (Orange)	WR (Red)	
PoE Standard		IEEE 802.3at PoE Plus PSE		
PoE Power Supply T	уре	End-span		
PoE Port Power Out	put Ability	Max. 36 watts		
Power Pin Assignme	ent	1/2(-), 3/6(+)		
PoE Power Budget		600 watts max.		
	PD @ 7 watts	24 units		
PoE Ability	PD @ 15.4 watts	24 units		
~_·,	PD @ 30.8 watts	20 units		
Power Requirements		100~240V AC, 50/60Hz,10A		
		36 ~ 60V,2A		
Power Requirements-DC Power Consumption (Full Loading)		AC 110V: Max. 45.8 watts/157.1BTU (Power on without any connection) Max. 657.9 watts/2257.2BTU (Full loading with PoE function)	AC 220V: Max. 45.5 watts/198.6BTU (Power on without any connection) Max. 660.3 watts/2265.5BTU (Full loading with PoE function)	
ESD Protection		6KV DC	,	
Dimensions (W x D)	(H)	440 x 300 x 44.5 mm, 1U height		
Enclosure	,	Metal		
Fan		3 x smart fan		
Weight		5040g (GS-5220-24PL4X)	5071g (GS-5220-24PL4XR)	
_ayer 2 Function		55.0g (56 52E5 2T1 ETA)	307 19 (30 0220 241 E47AV)	
Port Configuration		Port disable/enable Auto-negotiation 10/100/1000Mbps full or half Flow control disable/enable	duplex mode selection	
Port Status		Display each port's speed duplex mode, link status, flow control status, auto-negotiation status, trunk status		
		. p	,	
		TX/RX/Both		



Link Aggregation	IEEE 802.3ad LACP/static trunk	
QoS	10 groups of 16-port trunk supported 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	
Layer 3 Function		
IP Interfaces	Max. 8 VLAN interfaces	
Routing Table		
Routing Protocols	Max. 32 routing entries IPv4 software static routing IPv6 software static routing	
Management		
Basic Management Interfaces	Console, Telnet, Web browser, and SNMP v1/v2c	
Secure Management Interfaces	SSH/SSL. SNMP v3	
Coouro Management Internaceo		
ONVIF	ONVIF device discovery ONVIF device monitoring Floor Map	
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	
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 802.3ab Gigabit 1000T IEEE 802.3x flow control and back pressure IEEE 802.3x flow control and back pressure IEEE 802.3d 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 FRC 3810 MLD v2
Environment	OZ. IX port addictitionation fietwork control	. 110 00 10 11125 12
Packet Contents	Temperature: 0 ~ 50 degrees C for AC power input Relative Humidity: 5 ~ 95% (non-condensing)	
Storage	Temperature: -40 ~ 80 degrees C Relative Humidity: 5 ~ 95% (non-condensing)	



Ordering Information

GS-5220-24PL4X	L2+ 24-Port 10/100/1000T 802.3at PoE+ 4-Port 10G SFP+ Managed Switch (600W)
GS-5220-24PL4XR	L2+ 24-Port 10/100/1000T 802.3at PoE+ 4-Port 10G SFP+ Managed Switch with Redundant Power System (600W)

Related Products

GS-5220-24P4X	L2+ 24-Port 10/100/1000T 802.3at PoE+ 4-Port 10G SFP+ Managed Switch (400W)
GS-5220-24P4XR	L2+ 24-Port 10/100/1000T 802.3at PoE+ 4-Port 10G SFP+ Managed Switch with Redundant Power System (400W)
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 Redundant Power System
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 Redundant Power System
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

10G SFP+ Directly-attached Copper Cable (0.5m in length)
10G SFP+ Directly-attached Copper Cable (2m in length)
10GBASE-SR mini-GBIC module 300m
10GBASE-LR mini-GBIC module 10km
10GBASE-LX (WDM,TX:1270nm) mini-GBIC module 20km
10GBASE-LX (WDM,TX:1330nm) mini-GBIC module 20km
10GBASE-LX (WDM,TX:1270nm) mini-GBIC module 40km
10GBASE-LX (WDM,TX:1330nm) mini-GBIC module 40km
10GBASE-LX (WDM,TX:1270nm) mini-GBIC module 60km
10GBASE-LX (WDM,TX:1330nm) mini-GBIC module 60km

Available 1000Mbps Modules

SFP-Port 1000BASE-T Module
SFP-Port 1000BASE-SX mini-GBIC module – 220/550m
SFP-Port 1000BASE-LX mini-GBIC module 10km
SFP-Port 1000BASE-LX mini-GBIC module 30km
SFP-Port 1000BASE-LX mini-GBIC module 50km
SFP-Port 1000BASE-LX mini-GBIC module 70km
SFP-Port 1000BASE-LX mini-GBIC module 120km
SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module 10km
SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module 10km
SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module 20km
SFP-Port 1000BASE-LX (WDM,TX:1550nm) mini-GBIC module 20km
SFP-Port 1000BASE-LX (WDM,TX:1310nm) mini-GBIC module 40km
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

PLANET Technology Corporation

Tel: 886-2-2219-9518 Email: sales@planet.com.tw Fax: 886-2-2219-9528 www.planet.com.tw

