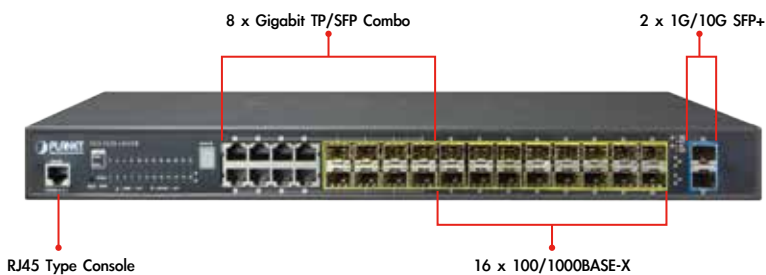


## L2+ 24-Port 100/1000BASE-X SFP with 8-Port Shared TP + 2-Port 10G SFP+ Stackable Managed Switch



### High-density, Resilient Deployment Switch Solution for Gigabit Networks of Enterprises, Campuses and Data Centers

For the growing Gigabit network and IoT (Internet of Things) demand, PLANET has launched a new-generation, stackable Gigabit switch solution, the SGS-5220 switch series, to meet the needs of enterprises, telecoms and campuses for a large-scale network deployment. The SGS-5220-24S2XR is a Layer 2+ Stackable Managed Gigabit Switch, which supports both IPv4 and IPv6 protocols and hardware Layer 3 static routing capability, and provides **24 100/1000BASE-X slots, 8 shared Gigabit RJ45 ports, 2 10G SFP+ uplink slots** and another **2 dedicated 10G SFP+ stacked interfaces** for stacking with the series of switches. Up to 16 units, 384 Gigabit SFP slots and 32 10Gbps SFP+ slots can be managed by a stacking group and you can add ports and functionality as needed.



### Redundant AC/DC Power Supply to Ensure Continuous Operation

The SGS-5220-24S2XR 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 installation. 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 SGS-5220-24S2XR is able to act as a telecom-level device that can be located in the electronic room.



### Physical Port

- **24 100/1000BASE-X** mini-GBIC/SFP slots, compatible with 100BASE-FX SFP
- **8-port 10/100/1000BASE-T** RJ45, shared with Port-1 to Port-8
- **2 10GBASE-SR/LR** SFP+ slots, compatible with 1000BASE-SX/LX/BX SFP
- **2 10GBASE-SR/LR** SFP+ stackable slots
- RJ45 console interface for basic management and setup

### Stacking Features

- Physical stacking up to 16 units, 384 Gigabit ports, 32 10G ports
- **Single IP address stack management**
- Stacking architecture supports Chain and Ring mode
- Plug and Play connectivity
- Mirror across stack
- Link Aggregation groups spanning multiple switches in a stack
- Physical MAC address learning with MAC table synchronization across stack

### 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 and Unknown unicast
- Supports **VLAN**
  - IEEE 802.1Q tagged VLAN
  - Up to 255 VLANs groups, out of 4094 VLAN IDs
  - Supports provider bridging (VLAN Q-in-Q, IEEE 802.1ad)
  - Private VLAN Edge (PVE)
  - Protocol-based VLAN
  - MAC-based VLAN
  - Voice VLAN
- Supports Spanning Tree Protocol
  - STP, IEEE 802.1D Spanning Tree Protocol
  - RSTP, IEEE 802.1w Rapid Spanning Tree Protocol
  - MSTP, IEEE 802.1s Multiple Spanning Tree Protocol, spanning tree by VLAN
  - BPDU Guard

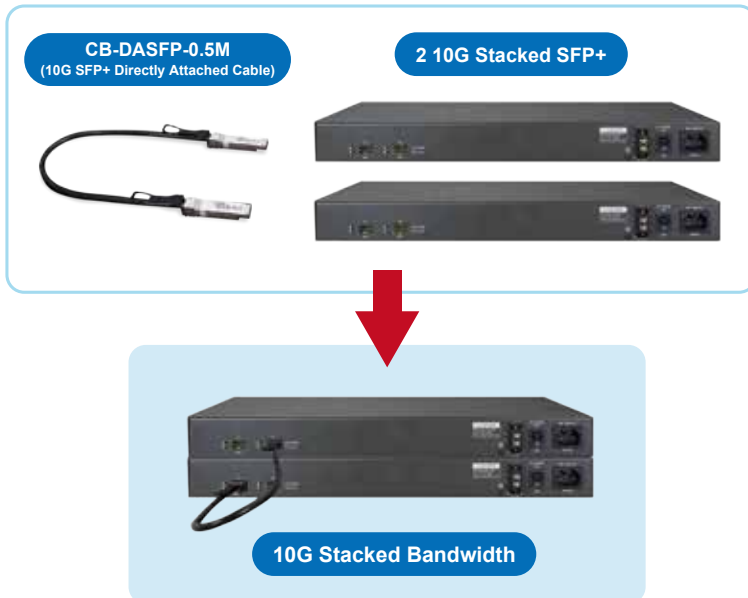
### Efficient Single IP Management

The SGS-5220 stackable managed switch series applies the advantage of the stacking technology to managing the stack group with one single IP address, which helps network managers to easily manage a stack of switches instead of connecting and setting each unit one by one. The stacking technology also enables the chassis-based switches to be integrated into the SGS-5220 series at an inexpensive cost.



### Highly-reliable Stacking Ability

Through its up to 40Gbps, bi-directional high bandwidth tunnel and stacking technology, the SGS-5220-24S2XR gives the enterprises, service providers and telecoms flexible control over port density, uplinks and switch stack performance. The stack redundancy of the SGS-5220-24S2XR ensures that data integrity is retained even if one switch in the stack fails. You can even hot-swap switches without disrupting the network, which greatly simplifies the tasks of upgrading the LAN for catering to increasing bandwidth demands.



- 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 40Gbps 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 IP Routing Features

- Supports maximum 128 static routes and route summarization

### 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 and IPv6 packets
  - IP TCP/UDP port number
  - Typical network application
- Strict priority and Weighted Round Robin (WRR) CoS policies
- Supports QoS and In and Out bandwidth control on each port
- Traffic-policing policies on the switch port
- DSCP remarking

### Multicast

- Supports IGMP Snooping v1, v2 and v3
- Supports MLD Snooping v1 and v2
- Querier mode support
- IGMP Snooping port filtering
- MLD Snooping port filtering
- Multicast VLAN registration (MVR) support

### Security

- Authentication
  - IEEE 802.1x Port-based and MAC-based network access authentication
  - Built-in RADIUS client to co-operate with the RADIUS servers
- TACACS+ login users access authentication
- RADIUS and TACACS+ users access authentication

### Cost-effective 10Gbps Uplink Capacity

10G Ethernet is a big leap in the evolution of Ethernet. The two 10G SFP+ slots of the SGS-5220-24S2XR 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 10Gbps high performance in a cost-effective way because 10GbE interface usually could be available in Layer 3 Switch but Layer 3 Switch could be too expensive to SMBs.

### Solution for IPv6 Networking

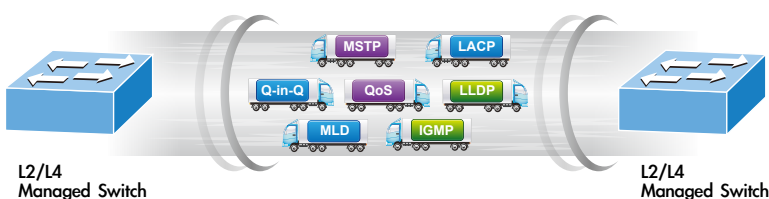
With the support for IPv6/IPv4 protocol, and easy and friendly management interfaces, the SGS-5220 series is the best choice for IP surveillance, VoIP and wireless service providers to connect with the IPv6 network. It also helps the SMBs to step in the IPv6 era with the lowest investment but not necessary to replace the network facilities while the ISP constructs the IPv6 FTTx edge network.

### IPv4 and IPv6 VLAN Routing for Secure and Flexible Management

To help customers stay on top of their businesses, the SGS-5220 switch series not only provides ultra high transmission performance and excellent Layer 2 technologies, but also IPv4/IPv6 VLAN routing feature which allows to crossover different VLANs and different IP addresses for the purpose of having a highly-secure, flexible management and simpler networking application.

### Robust Layer2 Features

The SGS-5220 series can be programmed for advanced switch management function, such as dynamic port link aggregation, **Q-in-Q VLAN**, **Multiple Spanning Tree Protocol (MSTP)**, Layer 2/4 QoS, bandwidth control and **IGMP/MLD snooping**. The SGS-5220 series allows the operation of a high-speed trunk combining multiple ports. Supporting 10 trunk groups, it enables a maximum of up to 16 ports per trunk and supports connection fail-over as well.



### Powerful Security

The SGS-5220 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 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 SGS-5220 series also provides **DHCP Snooping**, **IP Source Guard** and **Dynamic ARP Inspection** functions to prevent IP snooping from attack and discard ARP packets with invalid MAC address. The network administrator can now construct highly-secure corporate networks with considerably less time and effort than before.

- Access Control List
  - IP-based Access Control List (ACL)
  - MAC-based Access Control List
- Source MAC/IP address binding
- **DHCP Snooping** to filter un-trusted DHCP messages
- **Dynamic ARP Inspection** discards ARP packets with invalid MAC address to IP address binding
- **IP Source Guard** prevents IP spoofing attacks
- Auto DoS rule to defend DoS attack
- IP address access management to prevent unauthorized intruder

### Management

- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  - Console and Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c, and v3 switch management
  - SSH and SSL secure access
- **IPv6** IP Address, NTP and DNS management
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- System Maintenance
  - Firmware upload and download via HTTP or TFTP
  - Reset button for system reboot or reset to factory default
  - Dual Images
- DHCP Relay
- DHCP Option82
- User Privilege levels control
- NTP (Network Time Protocol)
- Link Layer Discovery Protocol (LLDP) and LLDP-MED
- Network Diagnostic
  - ICMPv6 and 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

### Redundant Power System

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

**User-friendly, Secure Management**

For efficient management, the SGS-5220 managed switch series is equipped with console, web and SNMP management interfaces. With the built-in web-based management interface, the SGS-5220 series offers an easy-to-use, platform independent management and configuration facility. The SGS-5220 series supports SNMP and it can be managed via any management software based on the standard SNMP v1 and v2 protocols. For reducing product learning time, the SGS-5220 series offers Cisco-like command via Telnet or console port and customer doesn't need to learn new command from these switches. Moreover, the SGS-5220 series offers remote secure management by supporting **SSH, SSL and SNMP v3** connection which can encrypt the packet content at each session.

**Flexible and Extendable Solution**

The 24 mini-GBIC SFP slots built in the SGS-5220-24S2XR 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 meters to 2km (multi-mode fiber) and up to 10/20/30/40/50/70/120 kilometers (single-mode fiber or WDM fiber). They are well suited for applications within the enterprise data centers and distributions.

**Intelligent SFP Diagnosis Mechanism**

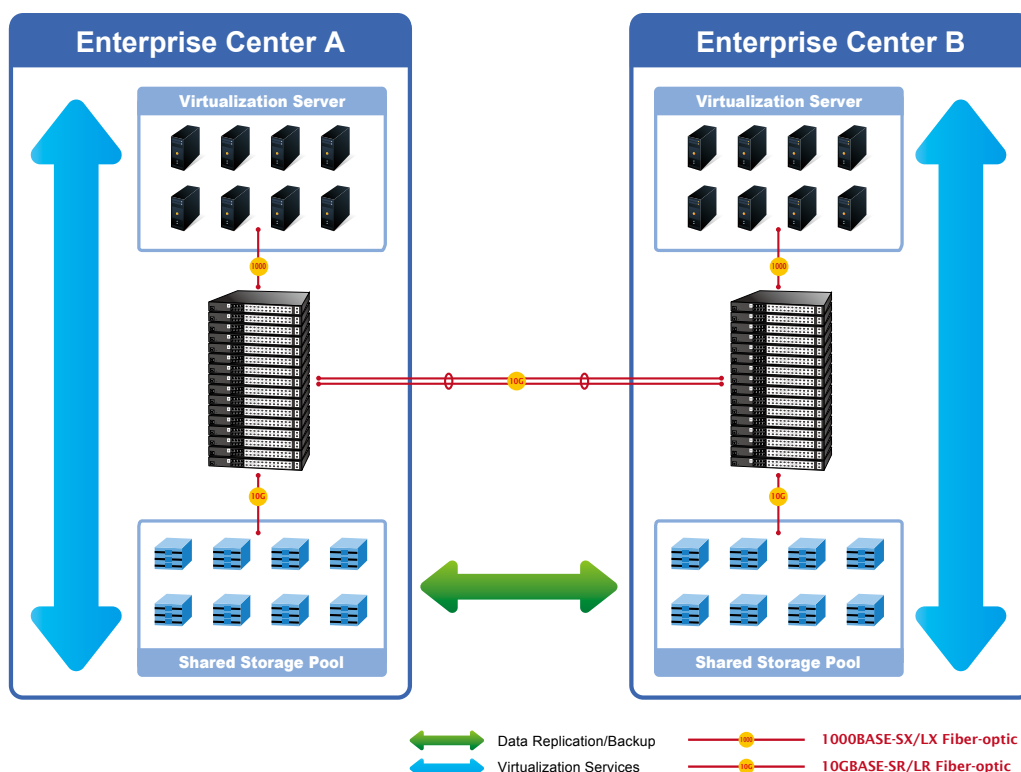
The SGS-5220-24S2XR supports **SFP-DDM (Digital Diagnostic Monitor)** function that greatly helps network administrator to easily monitor real-time parameters of the SFP and SFP+ transceivers, such as optical output power, optical input power, temperature, laser bias current, and transceiver supply voltage.

## Applications

**Good Scalability and Reliability Solution for Virtualization and Data Replication/Backup**

For high-volume Virtualization and Data Replication/Backup for enterprises and campuses, PLANET SGS-5220-24S2XR Stackable Managed switches allow an affordable and scalable network deployment. **Up to 40Gbps of stacking backplane fiber-optic connections** allow stacked switches to be placed in multiple physical locations, supporting remote or branch offices. **Up to 16 units, 256 Gigabit SFP slots, 128 Gigabit TP/SFP ports and 32 high-capacity 10G SFP+ ports** can be managed by a stacking group with one single IP address. Furthermore, it is available for remote uplink connectivity in a stacking group and provides the uplink to the edge network through SFP/SFP+ modules. The SGS-5220-24S2XR stackable switching system gives you the flexibility to expand small area network when needed.

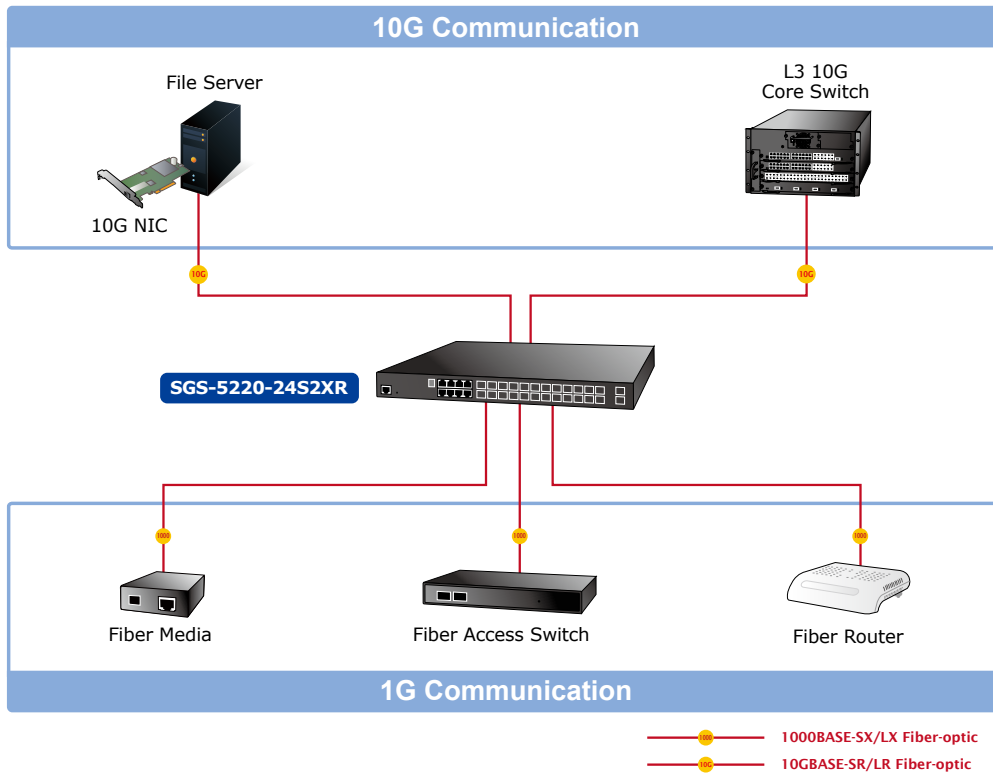
### Virtualization and Data Replication/Backup Solution



*Excellent Solution to Core/Data Center Security and QoS Switch*

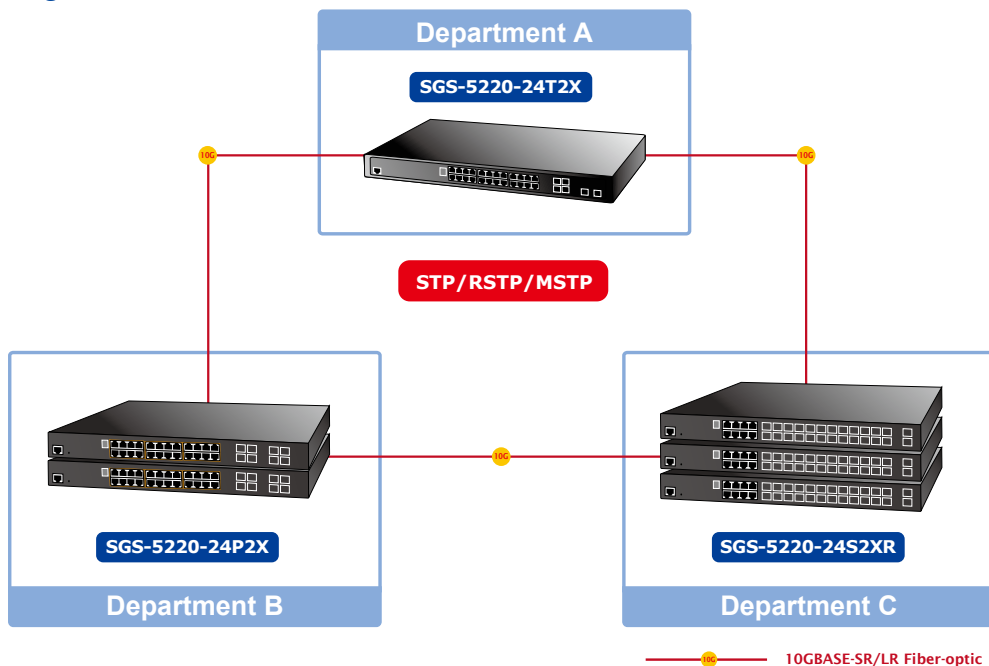
The SGS-5220-24S2XR performs 128 Gigabits per second non-blocking switch fabric so it can easily provide a local 10Gbps high bandwidth Ethernet network for the backbone of your department. With the two built-in SFP+ ports, the SGS-5220-24S2XR provides the uplink to the backbone network through the 10G Ethernet LR/SR SFP+ modules. It further improves the network efficiency and protects the network clients by offering the security and QoS features.

### High Performance Server Service



By means of improving the technology of Optical Fiber Ethernet with highly-flexible, highly-extendable and easy-to-install features, the SGS-5220 series offers up to 10Gbps data exchange speed via optical fiber interface and the transmission distance can be extended to 10km. The SGS-5220 series is the ideal solution for SMBs/enterprises to build redundant connection and establish high bandwidth for server farm.

### High Bandwidth Redundant Connection



## Specifications

Product	SGS-5220-24S2XR
<b>Hardware Specifications</b>	
Copper Ports	8 10/100/1000BASE-T RJ-45 auto-MDI/MDI-X ports, shared with Port-1 to Port-8
SFP/mini-GBIC Slots	24 100/1000BASE-X SFP interfaces Compatible with 100BASE-FX SFP transceiver
SFP+ Slots	2 10GbBASE-SR/LR SFP+ interfaces (Port-25 to Port-26) Compatible with 1000BASE-SX/LX/BX SFP transceiver
10Gbps Fiber Uplink Ports	2 1/10GBASE-SR/LR SFP+ slots
10Gbps Fiber Stackable Ports	2 10GBASE-SR/LR SFP+ slots
Console	1 x RJ45 serial port (115200, 8, N, 1)
Switch Architecture	Store-and-Forward
Switch Fabric	128Gbps/non-blocking
Throughput	95.2Mpps@64Bytes
Address Table	32K entries, automatic source address learning and ageing
Shared Data Buffer	32 megabits
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	<b>System:</b> PWR (Green), Master (Green), STX1 (Green), STX2 (Green) <b>Gigabit Ethernet Interfaces (Port-1 to Port-24):</b> 1000Mbps LNK/ACT (Green), 10/100Mbps LNK/ACT (Orange) <b>1/10Gbps SFP+ Interfaces (Port-25 to Port-26):</b> 10Gbps LNK/ACT (Green), 1Gbps LNK/ACT (Orange) <b>10G Stackable Interfaces (Port-27 to Port-28):</b> Stack (Green), LNK/ACT (Orange)
Power Requirements	100~240V AC, 50/60Hz, 1A max. 36~60V DC, 2A max.
Power Consumption (Full Loading)	59 watts/601 BTU max.
ESD Protection	Contact discharge of 4KV DC Air discharge of 8KV DC
Dimensions (W x D x H)	440 x 200 x 44.5 mm, 1U height
Weight	2990g
<b>Stacking Functions</b>	
Stacking Ports	2 SFP+ slots
Stacking Numbers	16
Stacking Bandwidth	40Gbps full duplex
Stack ID Display	7-Segment LED display (1~9, A~F, 0)
Stack Topology	Ring/chain/back-to-back
<b>Layer2 Management Function</b>	
Basic Management Interfaces	Console, Telnet, Web browser, SNMP v1, v2c
Secure Management Interfaces	SSH, SSL, SNMP v3
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, up to 255 VLAN groups 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 4094 VLAN IDs
Link Aggregation	IEEE 802.3ad LACP/static trunk Supports 10 groups of 16-port trunk

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	
Access Control List	IP-based ACL/MAC-based ACL Up to 256 entries	
Bandwidth Control	Per port bandwidth control Ingress: 100Kbps~1000Mbps Egress: 100Kbps~1000Mbps	
SNMP MIBs	RFC 1213 MIB-II RFC 2863 IF-MIB RFC 1493 Bridge MIB RFC 1643 Ethernet MIB RFC 2863 Interface MIB RFC 2665 Ether-Like MIB RFC 2737 Entity MIB	RFC 2819 RMON MIB (Group 1, 2, 3 and 9) RFC 2618 RADIUS Client MIB RFC 3411 SNMP-Frameworks-MIB IEEE 802.1X PAE LLDP MAU-MIB
<b>Layer 3 Function</b>		
IP Interfaces	Max. 128 VLAN interfaces	
Routing Table	Max. 32 routing entries	
Routing Protocols	IPv4 hardware static routing IPv6 hardware static routing	
<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 1000BASE-SX/LX IEEE 802.3ab 1000BASE-T 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
<b>Environments</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

SGS-5220-24S2XR	L2+ 24-port 100/1000BASE-X SFP with 8-port Shared TP + 2-port 10G SFP+ Stackable Managed Switch
-----------------	---

## Related Products

SGS-5220-24T2X	L2+ 24-port 10/100/1000T + 4-port Shared SFP + 2-port 10G SFP+ Stackable Managed Switch
SGS-5220-24P2X	L2+ 24-port 10/100/1000Mbps 802.3at PoE + 4-port 10G SFP+ Stackable Managed Switch
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)
MFB-Series Transceiver	100BASE-FX SFP Transceiver
MGB-Series Transceiver	1000BASE-SX/LX SFP Transceiver
MTB-Series Module	10GBASE-LR/SR Module

## Available Modules for SGS-5220-24S2XR series

### 10Gigabit Ethernet Transceiver (10GBASE-X SFP+)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MTB-SR	10G	LC	Multi Mode	300m	850nm	0 ~ 60 degrees C
MTB-LR	10G	LC	Single Mode	10km	1310nm	0 ~ 60 degrees C

### 10Gigabit Ethernet Transceiver (10GBASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MTB-LA20	10G	WDM(LC)	Single Mode	20km	1270nm	1330nm	0 ~ 60 degrees C
MTB-LB20	10G	WDM(LC)	Single Mode	20km	1330nm	1270nm	0 ~ 60 degrees C
MTB-LA40	10G	WDM(LC)	Single Mode	40km	1270nm	1330nm	0 ~ 60 degrees C
MTB-LB40	10G	WDM(LC)	Single Mode	40km	1330nm	1270nm	0 ~ 60 degrees C
MTB-LA60	10G	WDM(LC)	Single Mode	60km	1270nm	1330nm	0 ~ 60 degrees C
MTB-LB60	10G	WDM(LC)	Single Mode	60km	1330nm	1270nm	0 ~ 60 degrees C

### Gigabit Ethernet Transceiver (1000BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MGB-GT	1000	Copper	--	100m	--	0 ~ 60 degrees C
MGB-SX	1000	LC	Multi Mode	550m	850nm	0 ~ 60 degrees C
MGB-SX2	1000	LC	Multi Mode	2km	1310nm	0 ~ 60 degrees C
MGB-LX	1000	LC	Single Mode	10km	1310nm	0 ~ 60 degrees C
MGB-L30	1000	LC	Single Mode	30km	1310nm	0 ~ 60 degrees C
MGB-L50	1000	LC	Single Mode	50km	1550nm	0 ~ 60 degrees C
MGB-L70	1000	LC	Single Mode	70km	1550nm	0 ~ 60 degrees C
MGB-L120	1000	LC	Single Mode	120km	1550nm	0 ~ 60 degrees C
MGB-TSX	1000	LC	Multi Mode	550m	850nm	-40 ~ 75 degrees C
MGB-TLX	1000	LC	Single Mode	10km	1310nm	-40 ~ 75 degrees C
MGB-TL30	1000	LC	Single Mode	30km	1310nm	-40 ~ 75 degrees C
MGB-TL70	1000	LC	Single Mode	70km	1550nm	-40 ~ 75 degrees C

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

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MGB-LA10	1000	WDM (LC)	Single Mode	10km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB10					1550nm	1310nm	
MGB-LA20	1000	WDM (LC)	Single Mode	20km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB20					1550nm	1310nm	
MGB-LA40	1000	WDM (LC)	Single Mode	40km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB40					1550nm	1310nm	
MGB-LA60	1000	WDM (LC)	Single Mode	60km	1310nm	1550nm	0 ~ 60 degrees C
MGB-LB60					1550nm	1310nm	
MGB-TLA10	1000	WDM (LC)	Single Mode	10km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TLB10					1550nm	1310nm	
MGB-TLA20	1000	WDM (LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TLB20					1550nm	1310nm	
MGB-TLA40	1000	WDM (LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TLB40					1550nm	1310nm	
MGB-TLA60	1000	WDM (LC)	Single Mode	60km	1310nm	1550nm	-40 ~ 75 degrees C
MGB-TLB60					1550nm	1310nm	

### Fast Ethernet Transceiver (100BASE-X SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (nm)	Operating Temp.
MFB-FX	100	LC	Multi Mode	2km	1310nm	0 ~ 60 degrees C
MFB-F20	100	LC	Single Mode	20km	1310nm	0 ~ 60 degrees C
MFB-F40	100	LC	Single Mode	40km	1310nm	0 ~ 60 degrees C
MFB-F60	100	LC	Single Mode	60km	1310nm	0 ~ 60 degrees C
MFB-F120	100	LC	Single Mode	120km	1310nm	0 ~ 60 degrees C
MFB-TFX	100	LC	Multi Mode	2km	1310nm	-40 ~ 75 degrees C
MFB-TF20	100	LC	Single Mode	20km	1310nm	-40 ~ 75 degrees C



Fast Ethernet Transceiver (100BASE-BX, Single Fiber Bi-directional SFP)

Model	Speed (Mbps)	Connector Interface	Fiber Mode	Distance	Wavelength (TX)	Wavelength (RX)	Operating Temp.
MFB-FA20	100	WDM(LC)	Single Mode	20km	1310nm	1550nm	0 ~ 60 degrees C
MFB-FB20	100	WDM(LC)	Single Mode	20km	1550nm	1310nm	0 ~ 60 degrees C
MFB-TFA20	100	WDM(LC)	Single Mode	20km	1310nm	1550nm	-40 ~ 75 degrees C
MFB-TFB20	100	WDM(LC)	Single Mode	20km	1550nm	1310nm	-40 ~ 75 degrees C
MFB-TFA40	100	WDM(LC)	Single Mode	40km	1310nm	1550nm	-40 ~ 75 degrees C
MFB-TFB40	100	WDM(LC)	Single Mode	40km	1550nm	1310nm	-40 ~ 75 degrees C