Layer 2+ Multiple Gigabit + 4-Port 10G SFP+ Stackable Managed Switch


PLANET SGS-5240 series is a Layer 2+ Stackable Managed Gigabit Switch that provides high-density performance, **Layer 3 static routing** with **10Gbps uplink** interfaces delivered in a rugged, strong case.

The administrator can flexibly choose the suitable SFP/SFP+ transceiver according to the transmission distance or the transmission speed required to extend the 10G network efficiently. Besides, with **128/178Gbps switching** fabric, the SGS-5240 series can handle extremely large amounts of data in a secure topology linking to backbone or high capacity servers for ISP and enterprise VoIP, video streaming, and multicast applications.

High Reliability Hardware Stacking

Two of the 10G SFP+ ports are used to connect several SGS-5240 series, enabling to build a virtually logical facility. The SGS-5240 series gives the enterprises, service providers and telecoms flexible control over port density, uplinks and switch stack performance. The SGS-5240 series can be connected as a ring for redundancy and 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.

Master
Slave
Slave
Slave
Slave
Slave
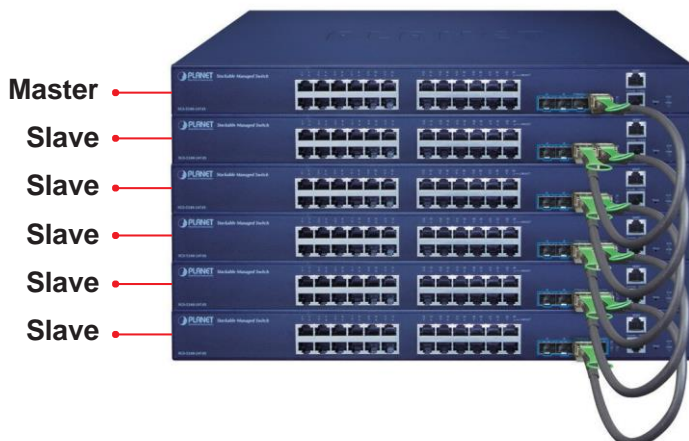
Physical Ports

- 24/48 10/100/1000BASE-T RJ45 copper ports
- 24 100/1000BASE-X SFP slots (SGS-5240-20S4C4XR)
- 4 10GBASE-SR/LR SFP+ slots, compatible with 1000BASE-SX/LX/BX SFP
- RJ45 to DB9 console interface for switch basic management and setup
- One 10/100BASE-TX Management port

Stacking Features

- IP Stacking
  - Connects with stack member via Gigabit TP, SFP and 10G SFP+ interfaces
  - Single IP address management, supporting up to 16 IP units stacked together
- Hardware Stacking
  - Virtualized multiple SGS-5240 switch series stacked into one logical device
  - Connects with stack member via assigned 10G SFP+ interfaces
  - Single IP address stack management, supporting up to 6 hardware units stacked together
  - Stacking architecture supports redundant ring mod

IP Routing Features

- IPv4/IPv6 hardware static routing
- Routing interface provides per VLAN routing mode

Layer 2 Features

- Supports VLAN
  - IEEE 802.1Q tag-based VLAN
  - Provider Bridging (VLAN Q-in-Q, IEEE 802.1ad) supported
  - GVRP for dynamic VLAN management
  - Protocol-based VLAN
  - MAC-based VLAN
  - IP subnet-based VLAN
  - Voice VLAN
- Supports Link Aggregation
  - 802.3ad Link Aggregation Control Protocol (LACP)
  - Cisco ether-channel (static trunk)
- Supports Spanning Tree Protocol
  - STP, IEEE 802.1D (Classic Spanning Tree Protocol)
  - RSTP, IEEE 802.1w (Rapid Spanning Tree Protocol)

Central IP Stacking Management

Positioned as the distribution or aggregation layer switch for large networks, the SGS-5240 series supports IP stacking function that helps network managers to easily configure up to 16 switches in the same series via one single IP address instead of connecting and setting each unit one by one. The IP Stacking technology groups PLANET SGS-5240 switch series together to enable centralized management through a single unit, regardless of physical location or switch type, as long as they are connected to the same local network.

### IP Stacking/Cluster
Up to 16 units with SGS-5240 Series
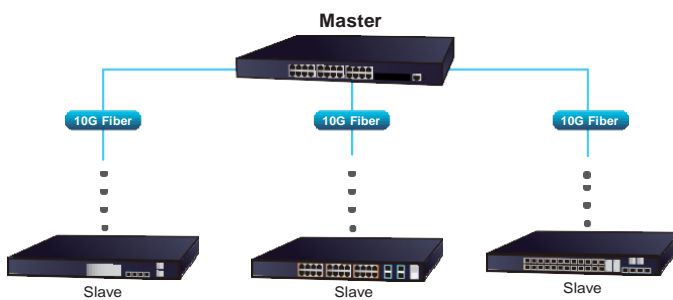
High Performance 10Gbps Ethernet Capacity

The four SFP+ slots built in the SGS-5240 series support **dual speed** and **10GBASE-SR/LR or 1000BASE-SX/LX**. With its 4 ports, 10Gbps and 1Gbps Ethernet link capability, 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. The SGS-5240 Series provides broad bandwidth and powerful processing capacity.

Redundant Ring, Fast Recovery for Critical Network Applications

The SGS-5240 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** (802.1s MSTP) 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 50ms to quickly bring the network back to normal operation.
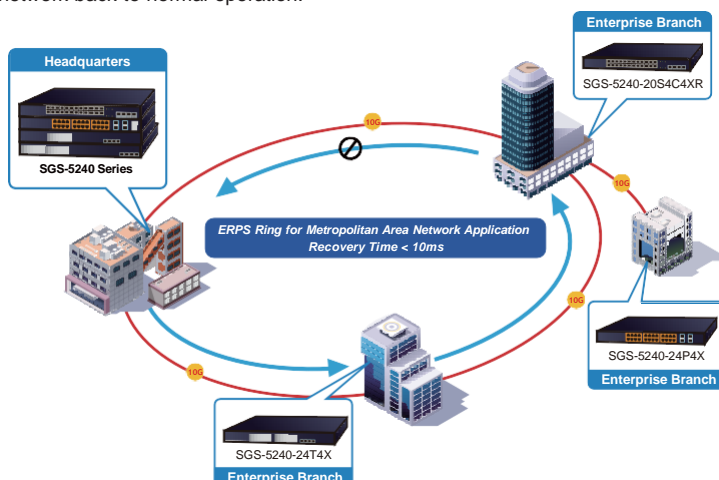
- – MSTP, IEEE 802.1s (Multiple Spanning Tree Protocol, spanning tree by VLAN)
- – Supports BPDU & root guard
- Port mirroring to monitor the incoming or outgoing traffic on a particular port (many to one)
- Supports G.8032 ERPS (Ethernet Ring Protection Switching)
- Loop protection to avoid broadcast loops
- Link Layer Discovery Protocol (LLDP)
- 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

Quality of Service
- Input and output rate limit per port bandwidth control
- 8 priority queues on all switch ports
  - – IEEE 802.1p CoS/DSCP/IP Precedence
  - – VLAN ID
  - – ACL
  - – Policy-based ingress and egress QoS

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
- MVR (Multicast VLAN Registration)

Security
- Authentication
  - – IEEE 802.1x port-based/MAC-based network access authentication
  - – IEEE 802.1x authentication with guest VLAN
  - – Built-in RADIUS client to cooperate with the RADIUS servers
  - – 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 (ACL)
  - – Time-based ACL
- 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

### Layer 3 IPv4 and IPv6 VLAN Routing for Secure and Flexible Management

The SGS-5240 series supports IPv4/IPv6 VLAN routing feature which allows to cross over different VLANs and different IP addresses for the purpose of having a highly-secure, flexible management and simpler networking application.

Strong Multicast

The SGS-5240 series supports abundant multicast features. In Layer 2, it features IPv4 IGMPv1/v2/v3 snooping and IPv6 MLD v1/v2 snooping. With Multicast VLAN Register (MVR), multicast receiver/sender control and illegal multicast source detection functions, the SGS-5240 series provides great application experience for customers.

Robust Layer 2 Features

The SGS-5240 series can be programmed for basic switch management functions such as port speed configuration, port aggregation, VLAN, Multiple Spanning Tree Protocol and bandwidth control. This switch provides 802.1Q tagged VLAN, Q-in-Q, voice VLAN and GVRP Protocol functions. By supporting port aggregation, the SGS-5240 series allows the operation of a high-speed trunk combined with multiple ports.
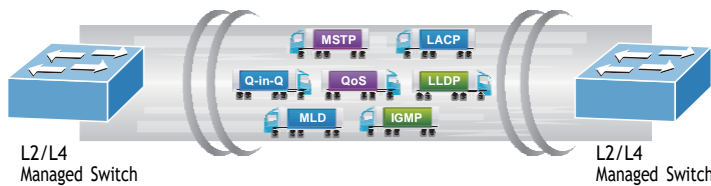
Powerful Network Security

The SGS-5240 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 applications. Its protection mechanism also comprises 802.1x Port-based, MAC-based and web-based user and device authentications.

Advanced IP Network Protection

The SGS-5240 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 administrators can now construct highly-secure corporate networks with considerably less time and effort than before.

Efficient and Secure Management

For efficient management, the SGS-5240 series is equipped with console, Web and SNMP management interfaces.

SGS-5240 Series

- IP address access management to prevent unauthorized intruder

Management

- IPv4 and IPv6 dual stack management
- Switch Management Interfaces
  - Console and Telnet Command Line Interface
  - HTTP web switch management
  - SNMP v1 and v2c switch management
  - SSHv2, SSLv3 and SNMP v3 secure access
- SNMP Management
  - Four RMON groups (history, statistics, alarms, and events)
  - SNMP trap for interface Link Up and Link Down notification
- Built-in Trivial File Transfer Protocol (TFTP) client
- BOOTP and DHCP for IP address assignment
- System Maintenance
  - Firmware upload/download via HTTP
  - Reset button for system reboot or reset to factory default
  - Dual images
- DHCP Functions:
  - DHCP Relay
  - DHCP Option 82
  - DHCP Server
- User Privilege levels control
- Network Time Protocol (NTP) and SNTP
- Network Diagnostic
  - SFP-DDM (Digital Diagnostic Monitor)
  - Cable diagnostic technology provides the mechanism to detect and report potential cabling issues
  - ICMPv6/ICMPv4 remote ping
- Syslog remote alarm
- System Log

Power over Ethernet (SGS-5240-24P4X)

- Complies with IEEE 802.3at Power over Ethernet Plus
- Up to 24 ports of IEEE 802.3at PoE devices powered
- 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 port power feeding priority
  - PD classification detection

Specifications

Product	SGS-5240-24T4X	SGS-5240-24P4X	SGS-5240-20S4C4XR	SGS-5240-48T4X
Hardware Specifications				
10/100/1000BASE-T RJ45 Ports	24	24	4 (combo)	48
1000BASE-X SFP Slots	-	-	20+4	-
10GBASE-X SFP+ Slots	4 10GBASE-SR/LR SFP+ interfaces Compatible with 1000BASE-SX/LX/BX SFP transceiver			
Console	1 x RJ45-to-RS232 serial port (115200, 8, N, 1)			
CPU	ARM A9 800MHz			
RAM	512Mbytes			
Flash Memory	64Mbytes			
Dimensions (W x D x H)	440 x 280 x 44 mm	440 x 280 x 44 mm	440 x 280 x 44 mm	440 x 330 x 44 mm
Weight	3.0 kg	4.1 kg	3.3 kg	4.0 kg
Power Consumption	21 watts/71.65 BTU	432 watts/1474 BTU	43 watts/146.72 BTU	45 watts/153.55 BTU
Power Requirements - AC	AC 100~240V, 50/60Hz	AC 100~240V, 50/60Hz	AC 100~240V, 50/60Hz	AC 100~240V, 50/60Hz
Power Requirements - DC	-	-	DC 36-72V	-
Fan	-	2	1	1
Switching				
Switch Architecture	Store-and-forward			
Switch Fabric	128Gbps/non-blocking	128Gbps/non-blocking	128Gbps/non-blocking	176Gbps/non-blocking
Switch Throughput	95.23Mpps	95.23Mpps	95.23Mpps	130.95Mpps
Address Table	16K MAC address table with auto learning function			
ARP Table	1024			
ACL Table	900			
Shared Data Buffer	1.5MB			
Jumbo Frame	9KB			
Flow Control	Back pressure for half duplex IEEE 802.3x pause frame for full duplex			
Power over Ethernet Specifications				
PoE Standard	-	IEEE 802.3at Power over Ethernet Plus PSE Backward compatible with IEEE 802.3af PoE	-	-
PoE Power Supply Type	-	End-span	-	-
PoE Power Output	-	Per port 54V DC, maximum 30 watts	-	-
Power Pin Assignment	-	1/2(+), 3/6(-)	-	-
PoE Power Budget	-	370 watts (max.)	-	-
Layer 3 Functions				
IP Interfaces	Max. 32 VLAN interfaces			
Routing Table	IPv4 256 entries IPv6 128 entries			
Routing Protocols	IPv4 hardware static routing IPv6 hardware static routing			
Layer 2 Functions				
Port Configuration	Port disable/enable Auto-negotiation 10/100/1000Mbps full and half duplex mode selection Flow control disable/enable Port loopback detect			
Port Status	Display each port's speed duplex mode, link status, flow control status and auto negotiation status			
Port Mirroring	TX/RX/Both Remote port mirror (RSPAN) Many-to-1 monitor			
VLAN	IEEE 802.1Q tagged based VLAN, up to 4K VLAN groups IEEE 802.1ad Q-in-Q VLAN stacking/tunneling IEEE 802.1v Protocol-based VLAN Port-based VLAN MAC-based VLAN IP Subnet-based VLAN Voice VLAN GVRP for VLAN management, up to 256 VLAN			

6

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) BPDU Guard, BPDU filtering and BPDU transparent Root Guard STP-based loopback detection
Multicast	IPv4 IGMP v1/v2/v3 snooping IPv4 Querier mode support IGMP Filtering and IGMP Throttling IGMP Proxy reporting IGMP mroute-forward mode Up to 255 multicast groups IPv6 MLD v1/v2 snooping Up to 255 multicast groups Multicast VLAN Register (MVR), supports 5 multicast VLANs

Link Aggregation	IEEE 802.3ad Ling Aggregation Control Protocol (LACP)
	Static trunk link aggregation
	Supports 26 groups with 8 ports per trunk group
	Up to 80Gbps bandwidth (full duplex mode)
	Load Balance Algorithm:
	  - Source IP/destination IP/Source + destination IP
	  - Source MAC/destination MAC/Source + destination MAC

Storm Control	Broadcast/Multicast/Unicast storm control Rate: 64Kbpss-10,000Mbps
Bandwidth Control	Input/Output/Both Per port bandwidth control Gigabit port: 64Kbpss-1,000Mbps 10Gigabit port: 64Kbpss-10,000Mbps

QoS	8 priority queues on all switch ports
	Scheduling for priority queues
	  - Weighted Round Robin (WRR)
	  - Strict priority
	  - Hybrid (DRR/WRR + strict)
	Traffic classification:
	  - IEEE 802.1p CoS/DSCP/IP Precedence
	  - VLAN ID
	  - ACL
	  - Policy-based ingress and egress QoS

Ring	ITUT G.8032 ERPS v1 and v2
Security Functions	

Access Control List	Supports Standard and Expanded ACL
	  - P-based ACL
	  - MAC-based ACL
	  - ARP ACL
	  - Time-based ACL
	ACL based on:
	  - MAC Address
	  - IPv4/IPv6 IP Address
	  - Ethertype
	  - Protocol-number/UDP
	  - sport/dport
	  - DSCP
	  - 802.1p Priority
	Up to 900 entries

Security	Port security Supports static MAC + port binding Defend against DoS or TCP attacks DHCP Snooping, DHCP Option 82 IP source guard Dynamic ARP inspection Command line authority control based on user levels
AAA	RADIUS client TACACS+ client

Network Access Control	IEEE 802.1x port-based network access control MAC-based authentication Web authentication Local/RADIUS authentication
Management Functions	
System Configuration	Console and Telnet Web browser SNMP v1, v2c
Secure Management Interfaces	IPv4/IPv6 SSHv2, SSLv3, SNMPv3 Maximum 8 sessions for SSH and telnet connection
System Management	IPv4 and IPv6 dual stack management SNMP MIB and TRAP SNMP RMON 1, 2, 3, 9 four groups Firmware upgrade by HTTP/TFTP/FTP protocol through Ethernet network Configuration upload/download through HTTP/TFTP/FTP protocol Supports dual images and multiple configuration files Supports IEEE 802.1ab LLDP protocol NTP/SNTP client RADIUS authentication for IPv4/IPv6 login user name and password Security IP safety net management function: avoid unlawful landing at nonrestrictive area
Event Management	Remote Syslog System log SMTP
IP Clustering	16 members
IP Clustering Compatibility List	SGS-5240-24T4X SGS-5240-24P4X SGS-5240-20S4C4XR SGS-5240-48T4X
Hardware Stacking	6 members max. Last 2 10G SFP+ slots are functioned as Stacking Up and Down interfaces
Hardware Stacking Compatibility List	Require the same models for hardware stacking
SNMP MIBs	RFC 1213 MIB-II RFC 1215 Internet Engineering Task Force RFC 1271 RMON RFC 1354 IP-Forwarding MIB RFC 1493 Bridge MIB RFC 1643 Ether-like MIB RFC 1907 SNMP v2 RFC 2011 IP/ICMP MIB RFC 2012 TCP MIB RFC 2013 UDP MIB RFC 2096 IP forward MIB RFC 2233 if MIB RFC 2452 TCP6 MIB RFC 2454 UDP6 MIB RFC 2465 IPv6 MIB RFC 2466 ICMP6 MIB RFC 2573 SNMP v3 notify RFC 2574 SNMP v3 vacm RFC 2674 Bridge MIB Extensions (IEEE 802.1Q MIB) RFC 2674 Bridge MIB Extensions (IEEE 802.1P MIB)
Standard Conformance	
Regulatory Compliance	FCC Part 15 Class A, CE