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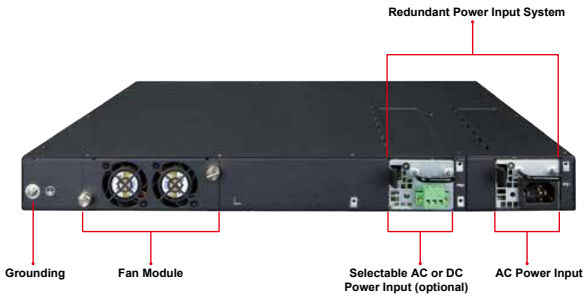
# SG-24242M

## Layer 3 Enterprise Stackable Managed Switch




## Overview

Shogun Layer 3 Stackable Managed Gigabit Switch supports multi-layer IPv6/IPv4 Gigabit Ethernet Routing, and provides 24 100/1000Mbps SFP slots, 16 shared 10/100/1000Mbps Ethernet ports, 4 extra 1/10G SFP+ uplink slots and 2 20G QSFP+ slots for Hardware stacking to meet the bandwidth requirements and protect network investment for enterprises. The XGS3-24242 is implemented with the following advanced technologies:

- IPv6/IPv4 Routing and Management
- 10G Ethernet Switching
- Single IP Address Management
- Redundant Power System
- QSFP+ slots for Hardware Stacking

## Features

### Physical Port

- 24-port 100/1000BASE-X mini-GBIC/SFP slots
- 16 10/100/1000BASE-T RJ45 copper ports, shared with port 1 to 16
- 4 10GBASE-SR/LR SFP+ slots, compatible with 1000BASE SX/LX/BX SFP
- 2 20Gbps Hardware Stacking ports
- RJ45 to DB9 console interface for switch basic management and setup
- 1 RJ45 Ethernet management port for switch management and setup
- 1 USB 2.0 for backup/upload configuration and firmware upgrade

### IP Stacking

- Connects with stack member via both Gigabit TP/SFP interface and 10G SFP+ slot
- Single IP address management, supporting up to 24 units stacked together

### Hardware Stacking

- Connects with stack member via QSFP+ slots
- Supporting up to 6 units stacked together

### IP Routing Features

- IP routing protocol supports RIPv1/v2, RIPng, OSPFv2/v3, BGP4/4+
- Routing interface provides per VLAN routing mode
- VRRPv1/v3 protocol for redundant routing deployment
- Supports route redistribution

### Multicast Routing Features

- Supports PIM-DM, PIM-SM and PIM-SSM
- Supports DVMRP (Distance Vector Multicast Routing Protocol)
- Supports IGMP v1/v2/v3 and MLD v1/v2

### Hardware Stacking

- Complies with the IEEE 802.3, IEEE 802.3u, IEEE 802.3ab, IEEE 802.3z Gigabit Ethernet and IEEE 802.3ae 10Gb/s Ethernet standard
- Supports auto-negotiation and half-duplex/full-duplex modes for all 10BASE-T, 100BASE-TX and 1000BASE-T port
- Auto-MDI/MDI-X detection on each RJ45 port
- Prevents packet loss flow control
  - IEEE 802.3 x pause frame flow control in full-duplex mode
  - Back-pressure flow control in half-duplex mode
- High performance Store-and-Forward architecture, broadcast storm control, port loopback detect
- 32K MAC address table, automatic source address learning and aging
- Supports VLAN
  - IEEE 802.1Q tag-based VLAN
  - GVRP for dynamic VLAN management
  - Up to 256 VLANs groups, out of 4041 VLAN IDs
  - Provider Bridging (VLAN Q-in-Q, IEEE 802.1ad) supported
  - Private VLAN Edge (PVE) supported
  - GVRP protocol for Management VLAN
  - Protocol-based VLAN
  - MAC-based VLAN
  - IP subnet VLAN
- Supports Link Aggregation
  - IEEE 802.1D Classic Spanning Tree Protocol (STP)
  - IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
  - IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) spanning tree by VLAN
  - BPDU & root guard
- Port mirroring to monitor the incoming or outgoing traffic on a particular port (many to many)
- Provides port mirror (many-to-1)

### Quality of Service

- 8 priority queues on all switch ports
- Supports strict priority and WRR (Weighted Round Robin CoS policies
- Traffic classification
  - IEEE 802.1p CoS/ToS
  - IPv4/IPv6 DSCP
  - Port-based WRR
- Strict priority and WRR CoS policie

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### Multicast

- Supports IPv4 IGMP snooping v1, v2 and v3, and IPv6 MLD v1 and v2 snooping
- Querier mode supports
- Supports Multicast VLAN Register (MVR)

### Security

- IEEE 802.1x port-based network access authentication
- MAC-based network access authentication
- Built-in RADIUS client to cooperate with the RADIUS server for IPv4 and IPv6
- TACACS+ login users access authentication
- IP-based Access Control List (ACL)
- MAC-based Access Control List
- Supports DHCP snooping
- Supports ARP inspection
- IP Source Guard prevents IP spoofing attacks
- Dynamic ARP Inspection discards ARP packets with invalid MAC address to IP address binding
- Supports URPF to avoid IP address clone
- IPv6 ND snooping

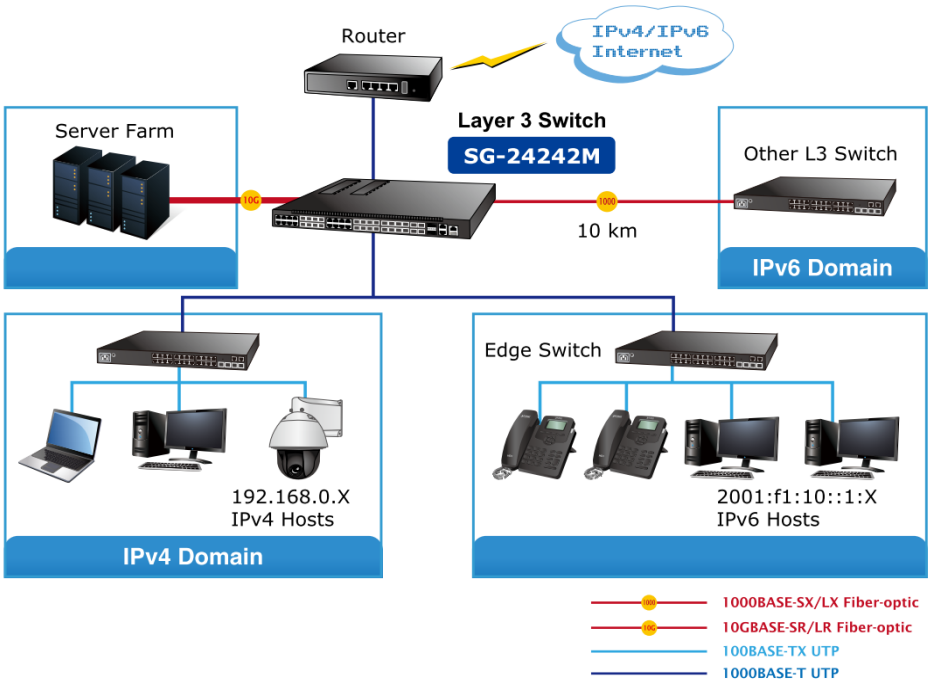
### Management

- Management IP for IPv4 and IPv6
- Switch Management Interface
  - Console/Telnet Command Line Interface
  - Web switch management
  - SNMP v1, v2c and v3 switch management
  - SSH/SSL secure access
- BOOTP and DHCP for IP address assignment
- DHCP relay and option 82 , Discovery Switchs ,APs and Gateways
- Firmware upload/download via TFTP or HTTP Protocol for IPv4&IPV6
- SNTP (Simple Network Time Protocol) for IPv4 and IPv6
- User privilege levels control
- Syslog server for IPv4 and IPv6
- Four RMON groups 1, 2, 3, 9 (history, statistics, alarms and event)
- Supports ping, trace route function for IPv4 and IPv6
- User Privilege levels control
- Link Layer Discovery Protocol (LLDP) and LLDP-MED

### Redundant Power System

- 100~240V AC, -40V~-60V DC (optional) dual redundant power

## Applications



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## Layer 3 Enterprise Stackable Managed Switch

| | |
|---|---|
| Product | SG-24242M |
| Hardware Version | 2.0 |
| Hardware Specifications | |
| SFP/Mini-GBIC Slots | 24 1000BASE- X SFP interface<br>Compatible with 100BASE-X SFP transceiver |
| Copper Ports | 16 10/100/1000BASE-T RJ45 auto-MDI/MDI-X ports,<br>shared with Port-1 to Port-16 |
| SFP+/Mini-GBIC Slots | 4 10GBASE-SR/LR SFP+ interface (Port-25 to Port-28)<br>Compatible with 1000BASE-X SFP transceiver |
| QSFP+ Stacking Slots | 2 20Gbps Hardware Stacking ports via QSFP+ Interface |
| Switch Processing Scheme | Store-and-Forward |
| Switch Fabric | 208Gbps |
| Throughput | 154Mpps@64bytes |
| Address Table | 32K entries |
| Shared Data Buffer | 32Mbits |
| VLAN Table | 4K |
| Routing Table | IPv4 for 16K<br>IPv6 for 6K |
| Layer 3 Interface | 1K |
| Port Queues | 8 |
| Flow Control | IEEE 802.3x pause frame for full-duplex<br>Back pressure for half-duplex |
| Jumbo Frame | 16Kbytes |
| LED | System:<br>PWR1, PWR2, Mode, SYS<br>Ports:<br>Link/Act |
| Dimensions (W x D x H) | 440 x 350 x 44.5 mm, 1U height |
| Weight | 4.78kg |
| Power Requirements | AC: 100 ~ 240VAC, 50/60Hz, auto-sensing<br>DC: -48 ~ -60V DC (optional) |
| Power Consumption | 53 watts (max.) |
| IPv4 Layer 3 functions | |
| IP Routing Protocol | Static route, RIPv1/v2, OSPFv2, BGPv4<br>Policy-based routing (PBR)<br>LPM routing (MD5 authentication) |
| Multicast Routing Protocol | IGMP v1/v2/v3, DVMRP, PIM-DM/SM, PIM-SSM |
| Layer 3 Protocol | VRRP v1/v3, ARP, ARP Proxy |
| Routing Interface | Per VLAN |
| IPv6 Layer 3 functions | |
| IP Routing Protocol | RIPng, OSPFv3, BGPv4+ |
| Multicast Routing Protocol | IM-SM/DM for IPv6<br>MLD for IPv6 (v1)<br>MLDv1/v2<br>MLD Snooping, 6 to 4 Tunnels<br>Multicast receive control<br>Illegal multicast source detect |
| Layer 3 Protocol | Configured Tunnels, ISATAP, CIDR |

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## Layer 3 Enterprise Stackable Managed Switch

| Layer 2 Functions | |
|---|---|
| Port Configuration | Port disable/enable<br>Auto-negotiation 10/100/1000Mbps full and half duplex mode selection<br>Bandwidth control on each port<br>Port Loopback detect |
| VLAN | 802.1Q tagged based VLAN, up to 4K VLAN groups<br>Q-in-Q<br>GVRP<br>Private VLAN<br>Voice VLAN<br>MAC-based VLAN<br>Protocol-based VLAN |
| Spanning Tree Protocol | IEEE 802.1D Spanning Tree Protocol (STP)<br>IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)<br>IEEE 802.1s Multiple Spanning Tree Protocol (MSTP), Spanning Tree by VLAN<br>Multiple Rapid Spanning Tree Protocal<br>BPDU Guard ,Root Guard |
| Link Aggregation | Static trunk<br>IEEE 802.3ad LACP<br>Supports 128 groups with 8 ports per trunk group |
| QoS | Traffic classification based, strict priority, SWRR, WRR, DWRR, SDWRR, WRED<br>8-level priority for switching<br>- Port number<br>- 802.1p priority<br>- DSCP/TOS field in IP packet<br>Policy-based DiffServ |
| Multicast | IGMP v1/v2/v3 snooping<br>IGMP proxy<br>IGMP querier mode support<br>MLD v1/v2, MLD v1/v2 snooping |
| Access Control List | Support standard and expanded ACL<br>IP-based ACL/MAC-based ACL<br>Time-based ACL<br>ACL pool can be used for QoS classification |
| Security | Supports MAC+ port binding<br>IPv4/IPv6 + MAC+ port binding<br>IPv4/IPv6 + port binding<br>Supports MAC filter<br>ARP spoofing prevention<br>ARP scanning prevention<br>IP source guard<br>IPv6 ND snooping |
| Authentication | IEEE 802.1x Port-based network access control<br>AAA Authentication: IPv4/IPv6 over TACACS+/RADIUS |
| SNMP MIBs | RFC-1213 MIB-II, IF-MIB<br>RFC-1493 Bridge MIB<br>RFC-1643 Ethernet MIB<br>RFC-2863 Interface MIB<br>RFC-2665 Ether-Like MIB<br>RFC-2674 Extended Bridge MIB<br>RFC-2819 RMON MIB (Group 1, 2, 3 and 9)<br>RFC-2737 Entity MIB<br>RFC-2618 RADIUS Client MIB<br>RFC-2933 IGMP-STD-MIB<br>RFC-3411 SNMP-Frameworks-MIB<br>IEEE 802.1X PAE<br>LLDP<br>MAU-MIB |

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## Layer 3 Enterprise Stackable Managed Switch

| | |
|---|---|
| **Management Functions** | |
| System Configuration | Console, Telnet, SSH, Web browser, SSL, SNMPv1, v2c and v3 |
| Management | Supports the unit for IPv4/IPv6 HTTP and SSL<br>Supports the user IP security inspection for IPv4/IPv6 SNMP<br>Supports MIB and TRAP<br>Supports IPv4/IPv6 FTP/TFTP<br>Supports IPv4/IPv6 NTP<br>Supports RMOM 1, 2, 3, 9 four group<br>Supports the RADIUS authentication for IPv4/IPv6 Telnet user name and password<br>Supports IPv4/IPv6 SSH<br>The right configuration for users to adopt RADIUS server's shell management<br>Supports the function for timing-reset bases needs<br>Supports CLI, Console (RS232), Telnet<br>Supports SNMPv1/v2c/v3<br>Supports Security IP safety net management function: avoid unlawful landing at nonrestritive area<br>Supports TACACS+ |
| **Standards Conformance** | |
| Regulatory Compliance | FCC Part 15 Class A, CE |
| Standards Compliance | IEEE 802.3 10BASE-T<br>IEEE 802.3u 100BASE-TX<br>IEEE 802.3z Gigabit SX/LX<br>IEEE 802.3ab Gigabit 1000BASE-T<br>IEEE 802.3ae 10 Gigabit Ethernet<br>IEEE 802.3x flow control and back pressure<br>IEEE 802.3ad port trunk with LACP<br>IEEE 802.1D Spanning Tree Protocol<br>IEEE 802.1w Rapid Spanning Tree Protocol<br>IEEE 802.1s Multiple Spanning Tree Protocol<br>IEEE 802.1p Class of Service<br>IEEE 802.1Q VLAN tagging<br>IEEE 802.1x Port Authentication Network Control<br>IEEE 802.1ab LLDP |
| **Environment** | |
| Operating | Temperature: 0 ~ 50 degrees C<br>Relative Humidity: 5 ~ 90% (non-condensing) |
| MTBF (hours) | 712,300 (81.3 years) |

FC CE