Ruijie RG-S6100 Series
Multi-GE Switches

Datasheet
V1.8

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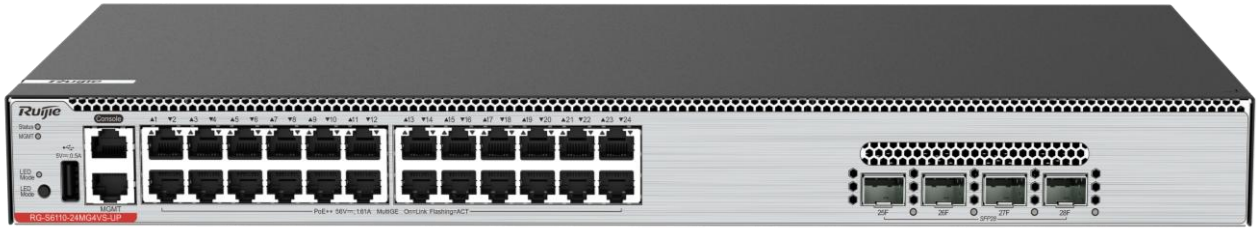
1. Product Overview

RG-S6100 series switches are next-generation multi-GE switches developed by Ruijie. With an advanced hardware architecture and Ruijie modular operating system, the RG-S6100 delivers fast hardware processing and good operation experience. They lay a foundation for high-performance networks that support IoT service lifecycle management, mobility applications, and cloud applications.

The RG-S6100 offers flexible multi-GE access (10GE/5GE/2.5GE/1GE) and high-performance 10GE/40GE uplink ports, catering for demands of high-density access and high-performance aggregation. It provides high-power PoE++ power with a maximum of 90 W PoE output to cope with power needs of different terminals.

2. Product Appearance

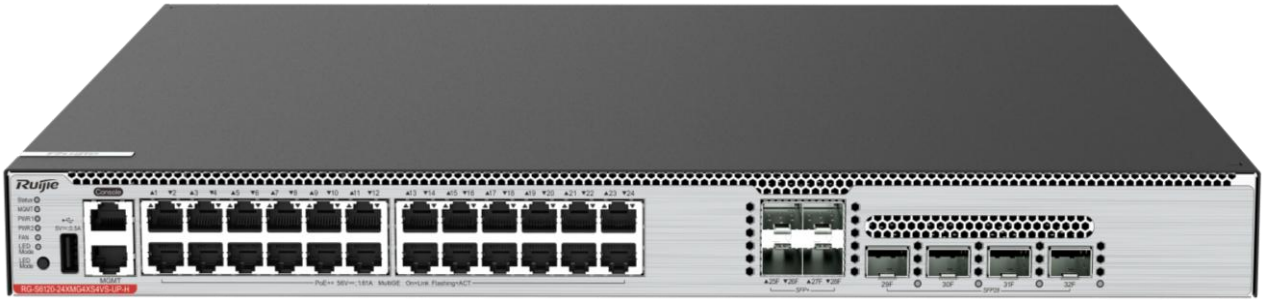
RG-S6110-24MG4VS-UP



Front View of the RG-S6110-24MG4VS-UP

Rear View of the RG-S6110-24MG4VS-UP

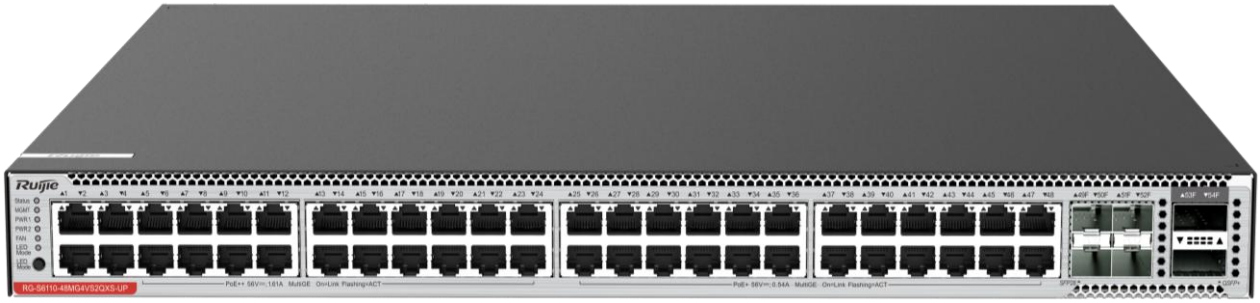
RG-S6120-24XMG4XS4VS-UP-H



Front View of the RG-S6120-24XMG4XS4VS-UP-H

Rear View of the RG-S6120-24XMG4XS4VS-UP-H

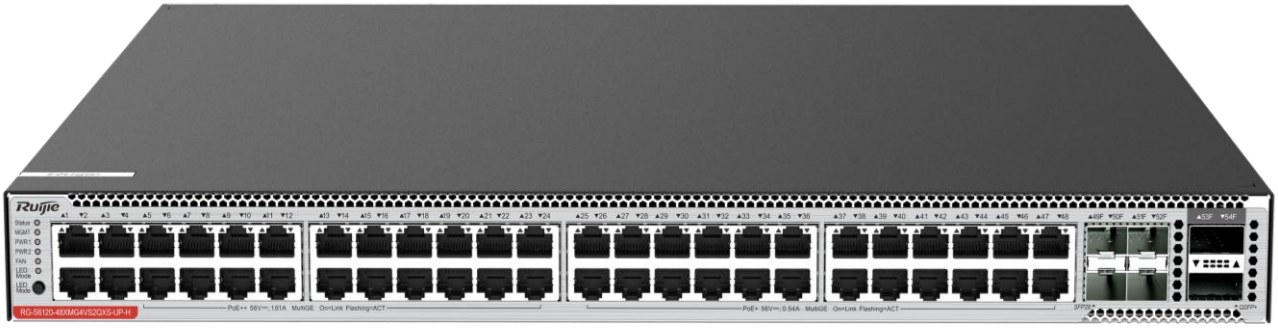
RG-S6110-48MG4VS2QXS-UP



Front View of the RG-S6110-48MG4VS2QXS-UP

Rear View of the RG-S6110-48MG4VS2QXS-UP

RG-S6120-48XMG4VS2QXS-UP-H



Front View of the RG-S6120-48XMG4VS2QXS-UP-H

Rear View of the RG-S6120-48XMG4VS2QXS-UP-H

3. Product Highlights

- **Supports a variety of port types, including 100/1000/2.5G/5GBASE-T ports and 100/1000/2.5G/5G/10GBASE-T ports, auto-negotiation Ethernet ports, to better adapt to Wi-Fi 7 access points (APs).**
- **Provides high-power PoE++ power supply with a maximum of 90 W PoE output to cope with power needs of different terminals, meeting demands for high bandwidth in large campuses.**
- **Supports multiple PoE allocation modes, achieving more efficient power management and energy saving.**
- **Supports VSU, delivering flexible networking and high performance.**
- **Intelligently adjusts the fan speed and supports automatic port sleeping, saving energy and reducing noise.**
- **Provides multiple network management methods, achieving simple and easy network maintenance.**
- **Offers hardware-level protection, ensuring continuous device operation and nonstop services.**
- **Uses two flash chips to store BOOT software (system boot program), achieving hardware-level BOOT redundancy and avoiding switch startup failures caused by flash chip failures.**
- **Uses RGOS modular operating system to provide more entries, faster hardware processing, and better operation experience.**
- **Provides open and programmable RGOS modular operating system. Basic functions are incorporated into the main version, and custom functions are released in app mode, ensuring stability of the basic functions.**
- **Supports the x86 platform, which supports containers, allows third-party management applications to be installed, and makes it easy for customizing functions.**
- **Rectifies faults related to processes online in seconds, without interrupting network operation.**
- **Supports Python that allows applications across platforms.**
- **Supports high-speed access to northbound interfaces, with the performance of up to thousands of operations. It can associate with the controller to upgrade the man-machine interface to machine-machine interface.**
- **Upgrades and extends functions online to ensure nonstop services.**

4. Product Features

Multi-GE Access

In recent years, Ethernet interface standards have rapidly evolved from 10BASE-T and 100BASE-T to 1000BASE-T (IEEE 802.3ab), leading to widespread adoption across devices such as PCs and APs. However, as the Wi-Fi 6 technology has been introduced, APs can now deliver uplink rates of 10 Gbps, which poses a growing challenge for GE network devices. The RG-S6100 addresses this issue by offering 100/1000/2.5G/5GBASE-T ports and 100/1000/2.5G/5G/10GBASE-T ports, Ethernet ports in auto-negotiation mode, providing better adaptability to Wi-Fi 6 APs.

High-Power PoE Power Supply

Previously, PoE remote power supply scenarios only have access to PoE (IEEE 802.3af) and PoE+ (IEEE 802.3at) standards. However, if the power exceeds 30 W, users are unable to use PoE for power supply, opting instead for mains-powered cables or even high-voltage power deployment. This presents significant challenges related to deployment costs and timelines, maintenance, and security. By adhering to the IEEE802.3bt standard, the RG-S6100 offers high-power PoE power supply capabilities and achieves a maximum PoE output of 90 W through a single Ethernet port, providing a significantly improved user experience.

IPv4/IPv6 Dual-Stack Multi-Layer Switching

The RG-S6100 hardware supports both IPv4 and IPv6 dual stacks, as well as multi-layer line-rate switching in order to differentiate and process packets of each protocol effectively. With flexible IPv6 network communication solutions, the RG-S6100 can meet various IPv6 network demands such as planning or maintenance. The RG-S6100 supports a wide range of IPv4 routing protocols, covering IPv4 static routing, RIP, OSPFv2, IS-ISv4, and BGP4. Fitting for different network environments, one can select appropriate routing protocols for flexible network building. Additionally, the RG-S6100 also supports abundant IPv6 routing protocols such as IPv6 static routing, RIPng, OSPFv3, IS-ISv6, and BGP4+. These protocols can be flexibly selected to either upgrade an existing network to IPv6 or establish a new one.

VSU

The RG-S6100 supports Virtual Switching Unit (VSU). VSU enables multiple physical devices to be connected through aggregate links and virtualized into one logical device. By using the same IP address, Telnet process, and CLI for management, along with automatic version check and configuration, network administrators can manage just one logical device, thereby enhancing work efficiency.

Simplified management: The network administrator can manage multiple switches uniformly because there is no need to connect separately to each switch for configuring and managing them.

Simplified network topology: A VSU serves as a switch within a network and eliminates Layer 2 loops and MSTP configurations by connecting peripheral devices through aggregate links. Various control protocols can run on the VSU.

Fault rectification within milliseconds: A VSU connects to peripheral devices through aggregate links. If a fault occurs on one device or member link in the VSU, data and services can be switched to another member link within 30 ms.

High scalability: Devices can be added to or removed from a virtualized network, without affecting normal operation of other devices.

Sound Security Protection Policies

The RG-S6100 can effectively defend against virus spread and hacker attacks through multiple inherent mechanisms, such as DoS attack defense, IP scanning attack defense, validity check of ARP packets, and multiple hardware-based ACLs.

The hardware-based IPv6 ACL can easily control the access of IPv6 users at the network edge even if there are IPv6 users on an IPv4 network. The RG-S6100 allows IPv4 and IPv6 users to coexist and can control access permissions of IPv6 users, for example, restricting access to sensitive resources on the network.

The RG-S6100 provides a unique hardware CPU protection mechanism: CPU Protection Policy (CPP). CPP enables the RG-S6100 to classify data traffic sent to the CPU, process the traffic by queue priority, and apply the rate limit to traffic as required. CPP fully protects the CPU from being occupied by unauthorized traffic, malicious attacks, and resource consumption, which ensures the security of the CPU and the switch.

The RG-S6100 and its ports can be flexibly bound to a user's IP address and MAC address, which strictly restricts the access of users connected to the ports or the switch.

DHCP snooping enables the RG-S6100 to receive DHCP Response messages only from trusted ports, preventing spoofing from unauthorized DHCP servers. With DHCP snooping, the RG-S6100 dynamically monitors ARP packets, checks users' IP addresses, and discards unauthorized packets that do not match binding entries. This effectively prevents ARP spoofing and source IP address spoofing.

The RG-S6100 also supports access control through source IP address-based Telnet, which can prevent unauthorized users and hackers from maliciously attacking and controlling the switch, and enhance the network management security of the switch.

Through the Secure Shell (SSH) and Simple Network Management Protocol version 3 (SNMPv3), the RG-S6100 can encrypt management information in Telnet and SNMP processes. This ensures information security of management devices and prevents hackers from attacking and controlling the devices.

The RG-S6100 rejects unauthorized network access and enables authorized network access by employing multi-element binding, port security, time-based ACL, and data stream-based rate limiting. It can strictly control user access to enterprise networks and campus networks and restrict the communication of unauthorized users.

The RG-S6100 supports the Network Foundation Protection Policy (NFPP) to enhance its security. By isolating attack sources, NFPP can protect the processor and channel bandwidth resources of the switch. This ensures normal packet forwarding and protocol status.

High Reliability

The RG-S6100 supports built-in redundant power modules and fan modules. The power and fan modules are hot swappable without affecting the normal operation of the switch. The switch also provides fault detection and alarms for power and fan modules. The fan speed can be automatically adjusted based on temperature changes to better adapt to various environments. The RG-S6100 adopts the front-to-rear airflow to enhance the cooling efficiency. By using overcurrent, overvoltage, and overheating protection technologies, the RG-S6100 achieves device-level and link-level reliability protection.

The RG-S6100 supports STP (IEEE 802.1D), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s) to achieve fast convergence, improve the fault tolerance capability, and ensure stable network operation and link

load balancing. The RG-S6100 effectively utilizes network channels to improve the usage of aggregate links.

The Virtual Router Redundancy Protocol (VRRP) ensures network stability for the switch.

With the Rapid Link Detection Protocol (RLDP), the RG-S6100 can quickly detect link connectivity and unidirectional optical links. Through port loop detection, the switch can prevent network failures caused by the loops that occur in the scenario where an unauthorized port is connected to hubs.

When STP is disabled, the Rapid Ethernet Uplink Protection Protocol (REUP) can still provide basic link redundancy and millisecond-level fault rectification faster than STP.

The RG-S6100 supports Bidirectional Forwarding Detection (BFD) for upper-level protocols (such as routing protocols), rapidly detecting connectivity of the forwarding path between two routing devices. BFD greatly shortens the convergence time for upper-level protocols upon link status changes.

Powerful Multi-Service Capability

The RG-S6100 supports IPv4 and IPv6 multicast functions as well as multiple multicast protocols, including IGMP snooping, IGMP, Multicast Listener Discovery (MLD), Protocol Independent Multicast (PIM), PIM for IPv6, and Multicast Source Discovery Protocol (MSDP). It provides multicast service support for IPv4 networks, IPv6 networks, and IPv4 and IPv6 networks.

IGMP source port check and source IP address check supported by the RG-S6100 can effectively eliminate unauthorized multicast sources and enhance network security.

Sound QoS Policies

The RG-S6100 can classify and control various flows, such as MAC flows, IP flows, and application flows, to implement different policies such as fine-grained bandwidth control and forwarding priority. In this way, it provides differentiated services based on applications and characteristics of service quality required by the applications.

It provides QoS guarantee based on the DiffServ model, and can filter traffic based on 802.1p priorities and IP ToS values, and from Layer 2 to Layer 7. It supports SP, WRR, and other QoS policies.

Energy Saving

The RG-S6100 adopts the next-generation hardware architecture, and advanced energy-efficient circuit design and components, to efficiently reduce energy consumption and noise. It is equipped with variable-speed axial fan modules to intelligently control the fan speed based on the ambient temperature. This reduces power consumption and noise while ensuring stable operation of the switch.

In the networking where PoE power supply is adopted, the RG-S6100 provides automatic and energy-saving modes.

Easy Network Maintenance

The RG-S6100 supports routine network diagnosis and maintenance based on SNMP, RMON, Syslog, and USB-based backup log and configuration. A network administrator can use various management and maintenance modes such as command line interface (CLI), web network management, and Telnet to facilitate device management.

A PoE button is available on the panel of the switch. You can press this button to check the

communication status and PoE status of all ports on the switch.

5. Product Specifications

Hardware Specifications

Port Specifications

Port specifications	RG-S6110-24MG4VS-UP	RG-S6120-24XMG4XS4VS-UP-H	RG-S6110-48MG4VS2QXS-UP	RG-S6120-48XMG4VS2QXS-UP-H
Fixed service port	24 x 100/1000/2.5G/5G BASE-T ports, supporting PoE/PoE+/PoE++ 4 x 10GE/25GE SFP28 ports	24 x 100/1000/2.5G/5G /10GBASE-T ports, supporting PoE/PoE+/PoE++ 4 x 1GE/10GE SFP+ ports 4 x 10GE/25GE SFP28 ports	48 x 100/1000/2.5G/5G BASE-T ports ● Ports 1 to 24 support PoE/PoE+/PoE ++ ● Ports 25 to 48 support PoE/PoE+ 4 x 10GE/25GE SFP28 ports 2 x 40GE QSFP+ ports	48 x 100/1000/2.5G/5G /10GBASE-T ports ● Ports 1 to 24 support PoE/PoE+/PoE ++ ● Ports 25 to 48 support PoE/PoE+ 4 x 10GE/25GE SFP28 ports 2 x 40GE QSFP+ ports
Module slot	Not Supported	2 x power module slots 3 x fan module slots		
Power module	Not Supported	RG-PA600I-P-F RG-PA1000I-P-F		
Fan module	Not Supported	M2SFAN I-F (pre-installed 3)		
Fixed management port	1 x RJ45 console port 1 x RJ45 MGMT port			
USB	1 x USB 2.0 port			

System Specifications

System specifications	RG-S6110-24MG4VS-UP	RG-S6120-24XMG4XS4VS-UP-H	RG-S6110-48MG4VS2QXS-UP	RG-S6120-48XMG4VS2QXS-UP-H
System packet forwarding rate *1	392 Mpps	678 Mpps	750 Mpps	982 Mpps

System specifications	RG-S6110-24MG4VS-UP	RG-S6120-24XMG4XS4VS-UP-H	RG-S6110-48MG4VS2QXS-UP	RG-S6120-48XMG4VS2QXS-UP-H
System switching capacity *2	528 Gbps	912 Gbps	1008 Gbps	1320 Gbps
CPU	Single-core CPU, with the clock speed of 1.2 GHz			
Real-time clock (RTC)	Supported			
BootROM	16 MB (storing boot software for 1+1 boot redundancy)			
Flash memory	1 GB (storing boot software for 1+1 boot redundancy)			
Memory	1 GB DDR4 (32-bit width, 4-bit ECC)	1 GB DDR4 (32-bit width, 4-bit ECC)	2 GB DDR4 (32-bit width, 4-bit ECC)	2 GB DDR4 (32-bit width, 4-bit ECC)
Switch buffer	4 MB			
Number of MAC addresses	Number of global MAC addresses: 32,768 Number of static MAC addresses: 1,000			
ARP table size	16,000			
ND table size	4,000			
Number of IPv4 unicast routes	16,000			
Number of IPv4 multicast routes	4,000			
Number of IPv6 unicast routes	16,000			
Number of IPv6 multicast routes	2,000			
Number of IGMP groups	4,000			
Number of MLD groups	1,000			
Number of ACEs	Ingress: 2,500 Egress: 1,000			
Number of VSU members	4			

*1 means the system's packet forwarding rate.

*2 means the system's switching capacity.

Power Supply and Consumption

Power supply and consumption	RG-S6110-24MG4VS-UP
Power supply	1 x fixed power supply
Power input	AC input: ● Rated input voltage: 100 V AC to 240 V AC, 50/60 Hz ● Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz ● Maximum input current: 6 A
Maximum output power	Fixed power supply: 460 W
PoE port	Ports 1 to 24 support PoE/PoE+/PoE++ (IEEE802.3af/at/bt) power supply
PoE power cable pairs	Four pairs (1-2, 3-6, 4-5, and 7-8 pairs)
PoE output power	Each PoE port provides up to 90 W of power. The maximum power is 370 W. Note: The maximum number of powered devices supported by the switch is determined by the available power of the switch and the actual power consumption of each device.
Maximum power consumption	90 W (without PoE) 460 W (full PoE load)

Power supply and consumption	RG-S6120-24XMG4XS4VS-UP-H	RG-S6110-48MG4VS2QXS-UP	RG-S6120-48XMG4VS2QXS-UP-H
Power supply	2 x pluggable power modules		
Power input	RG-PA600I-P-F (AC input): ● Rated input voltage: 100 V AC to 240 V AC, 50/60 Hz ● Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz ● Maximum input current: 8 A RG-PA1000I-P-F (AC input 1): ● Rated input voltage: 100 V AC to 130 V AC, 50/60 Hz ● Maximum input voltage: 90 V AC to 143 V AC, 47 Hz to 63 Hz ● Maximum input current: 12 A RG-PA1000I-P-F (AC input 2): ● Rated input voltage: 200 V AC to 240 V AC, 50/60 Hz ● Maximum input voltage: 180 V AC to 264 V AC, 47 Hz to 63 Hz ● Maximum input current: 8 A		

Power supply and consumption	RG-S6120-24XMG4XS4VS-UP-H	RG-S6110-48MG4VS2QXS-UP	RG-S6120-48XMG4VS2QXS-UP-H
Maximum output power	RG-PA600I-P-F: 600 W RG-PA1000I-P-F: ● 100 V AC to 130 V AC: 930 W ● 200 V AC to 240 V AC: 1000 W		
PoE port	Ports 1 to 24 support PoE/PoE+/PoE++ (IEEE802.3af/at/bt) power supply	Ports 1 to 24 support PoE/PoE+/PoE++ (IEEE802.3af/at/bt) power supply Ports 25 to 48 support PoE/PoE+ (IEEE 802.3af/at) power supply	
PoE power cable pairs	Four pairs (1-2, 3-6, 4-5, and 7-8 pairs)		
PoE output power	Each PoE port provides up to 90 W of power The maximum power depends on the configured power supply ● 1 x RG-PA600I-P-F：450 W ● 1 x RG-PA1000I-P-F: 760 W (100 V AC to 130 V AC) ● 1 x RG-PA1000I-P-F: 850 W (200 V AC to 240 V AC) ● 2 x RG-PA600I-P-F：930 W ● 1 x RG-PA600I-P-F + 1 x RG-PA1000I-P-F：1200 W (100 V AC to 130 V AC) ● 1 x RG-PA600I-P-F + 1 x RG-PA1000I-P-F：1290 W (200 V AC to 240 V AC) ● 2 x RG-PA1000I-P-F: 1470 W (100 V AC to 130 V AC) ● 2 x RG-PA1000I-P-F: 1650 W (200 V AC to 240 V AC)	Each port of ports 1 to 24 provides up to 90 W of power Each port of ports 25 to 48 provides up to 30 W of power The maximum power depends on the configured power supply ● 1 x RG-PA600I-P-F：400 W ● 1 x RG-PA1000I-P-F: 710 W (100 V AC to 130 V AC) ● 1 x RG-PA1000I-P-F: 800 W (200 V AC to 240 V AC) ● 2 x RG-PA600I-P-F：880 W ● 1 x RG-PA600I-P-F + 1 x RG-PA1000I-P-F：1150 W (100 V AC to 130 V AC) ● 1 x RG-PA600I-P-F + 1 x RG-PA1000I-P-F：1240 W (200 V AC to 240 V AC) ● 2 x RG-PA1000I-P-F: 1420 W (100 V AC to 130 V AC) ● 2 x RG-PA1000I-P-F: 1600 W (200 V AC to 240 V AC)	
Maximum power consumption	150 W (without PoE load) 1,800 W (full PoE load)	200 W (without PoE load) 1,800 W (full PoE load)	

Note: The maximum number of powered devices supported by the switch is determined by the available power of the switch and the actual power consumption of each device.

Dimensions and Weight

Dimensions and weight	RG-S6110-24MG4VS-UP	RG-S6120-24XMG4XS4VS-UP-H	RG-S6110-48MG4VS2QXS-UP	RG-S6120-48XMG4VS2QXS-UP-H
Unit dimensions (W x D x H)	442.0 mm x 220.0 mm x 43.6 mm (17.40 in. x 8.66 in. x 1.72 in.)	442.0 mm x 420.0 mm x 43.6 mm (17.40 in. x 16.54 in. x 1.72 in.)		
Shipping dimensions (W x D x H)	568 mm x 366 mm x 226 mm (22.36 in. x 14.41 in. x 8.90 in.)	563 mm x 563 mm x 210 mm (22.17 in. x 22.17 in. x 8.27 in.)		
Rack height	1 RU	1 RU		
Unit weight	3.71 kg (8.18 lbs)	5.86 kg (12.92 lbs, with 3 fan modules)	6.18 kg (13.62 lbs, with 3 fan modules)	6.18 kg (13.62 lbs, with 3 fan modules)
Shipping weight	5.37 kg (11.84 lbs)	8.12 kg (17.90 lbs, with 3 fan modules)	8.42 kg (18.56 lbs, with 3 fan modules)	8.42 kg (18.56 lbs, with 3 fan modules)

Environment and Reliability

Environment and reliability	RG-S6110-24MG4VS-UP	RG-S6120-24XMG4XS4VS-UP-H	RG-S6110-48MG4VS2QXS-UP	RG-S6120-48XMG4VS2QXS-UP-H
Temperature	Operating temperature: 0°C to 45°C (32°F to 113°F) Storage temperature: -40°C to +70°C (-40°F to +158°F) Note: At an altitude between 3,000 m (9,842.52 ft.) and 5,000 m (16,404.20 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F).			
Humidity	Operating humidity: 10% to 90% RH (non-condensing) Storage humidity: 5% to 95% RH (non-condensing)			
Altitude	Operating altitude: –500 m to +5,000 m (–1640.42 ft. to +16,404.20 ft.) Storage altitude: –500 m to +5,000 m (–1640.42 ft. to +16,404.20 ft.)			
Mean time between failure (MTBF)	194,296 hours (about 22 years)	194,296 hours (about 22 years)	236,695 hours (about 27 years)	236,695 hours (about 27 years)
Fan	2 x fixed fan modules	3 x pluggable fan modules		
Heat dissipation	Fan cooling, left-to-right and front-to-right airflow	Fan cooling, left-to-rear and front-to-rear airflow		

Environment and reliability	RG-S6110-24MG4VS-UP	RG-S6120-24XMG4XS4VS-UP-H	RG-S6110-48MG4VS2QXS-UP	RG-S6120-48XMG4VS2QXS-UP-H
Acoustic noise	27°C (80.6°F): 40 dB Maximum value: < 78 dB	27°C (80.6°F): 60 dB Maximum value: < 78 dB		
Power module redundancy	Not supported	1+1 redundancy	1+1 redundancy	1+1 redundancy
Fan redundancy	Not supported	2+1 redundancy	2+1 redundancy	2+1 redundancy
Power module hot swapping	Supported			
USB hot swapping	Supported			
Cable hot swapping	Supported			
Power supply monitoring	Not supported	Monitoring of the power supply model and status Power supply failure alarming		
Fan monitoring	Automatic speed adjustment Fan failure alarming			
Temperature monitoring	Supported			
ESD	ESD contact/air discharge: 6 kV/8 kV ESD susceptibility contact/air discharge: 8 kV/15 kV			
Surge protection	MGMT port: 4 kV Service port: 8 kV Power port: common mode 6 kV, differential mode 6 kV			

Certifications and Regulatory Compliance

Certifications and regulatory compliance	RG-S6110-24MG4VS-UP	RG-S6120-24XMG4XS4VS-UP-H	RG-S6110-48MG4VS2QXS-UP	RG-S6120-48XMG4VS2QXS-UP-H
Safety regulation	IEC 62368-1			
EMC regulation	EN 300386, EN 55032 Class A, EN 55035, EN IEC 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-11			
RoHS	European RoHS Directive 2011/65/EU & Amendment(EU) 2015/863			

Software Specifications

Feature	RG-S6100 Series
Ethernet switching	Jumbo frame (maximum length: 9,216 bytes)
	IEEE 802.1Q (supporting 4K VLANs)
	Maximum number of VLANs that can be created: 4,094
	Voice VLAN
	Super-VLAN and private VLAN
	MAC address-based, port-based, protocol-based, and IP subnet-based VLAN assignment
	GVRP
	Basic QinQ and selective QinQ
	STP (IEEE 802.1.d), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s)
	ERPS (G.8032)
	LACP (IEEE 802.3ad)
	LLDP/LLDP-MED
IP service	Static and dynamic ARP
	DHCP server, DHCP client, DHCP relay, and DHCP snooping
	DNS
	DHCPv6 server, DHCPv6 client, DHCPv6 relay, and DHCPv6 snooping
	Neighbor Discovery (ND) and ND snooping
IP routing	Static routing
	RIP and RIPng
	OSPFv2 and OSPFv3
	GR
	IS-ISv4 and IS-ISv6
	BGP4 and BGP4+
	Equal and Weighted Cost Multi-Path (ECMP)
	Packet-based and flow-based load balancing
	Stateless Auto Configuration
	IPv4/IPv6 VRF
	IPv4/IPv6 PBR
Multicast	IGMPv1/v2/v3 and IGMP proxy
	IGMPv1/v2/v3 snooping
	IGMP filtering and IGMP fast leave

Feature	RG-S6100 Series
	PIM-DM, PIM-SM, and PIM-SSM
	PIM-SSM for IPv4 and IPv6
	MSDP to achieve inter-domain multicast
	MLDv1/v2
	MLD snooping
	MSDP
	PIM-SMv6
	Multicast source IP address check Multicast source port check
	Multicast querier
ACL and QoS	Standard IP ACLs (hardware ACLs based on IP addresses)
	Extended IP ACLs (hardware ACLs based on IP addresses or TCP/UDP port numbers)
	Extended MAC ACLs (hardware ACLs based on source MAC addresses, destination MAC addresses, and optional Ethernet type)
	Expert-level ACLs (hardware ACLs based on flexible combinations of the VLAN ID, Ethernet type, MAC address, IP address, TCP/UDP port number, protocol type, and time range)
	Time-based ACLs
	ACL80 and IPv6 ACL
	Applying ACLs globally (hardware ACLs based on flexible combinations of the VLAN ID, Ethernet type, MAC address, IP address, TCP/UDP port number, protocol type, and time range)
	ACL redirection
	Port traffic identification
	Port traffic rate limiting
	802.1p/DSCP/ToS traffic classification
	Traffic classification based on 802.1p priorities, DSCP priorities, and IP precedences
	Traffic classification based on ToS values
	Congestion management: SP, WRR, DRR, WFQ, SP+WRR, SP+DRR, and SP+WFQ
	Congestion avoidance: tail drop, RED, and WRED
	Eight queues on each port
	Rate limiting in each queue
Security	Multi-AAA

Feature	RG-S6100 Series
	RADIUS and TACAS+
	Filtering of invalid MAC addresses Broadcast storm suppression Hierarchical management of administrators and password protection BPDU guard
	RADIUS authentication and authorization
	Port- and MAC address-based 802.1x authentication
	IEEE802.1X authentication, MAC address bypass (MAB) authentication, and interface-based and MAC address-based 802.1X authentication
	Web authentication
	Hypertext Transfer Protocol Secure (HTTPS)
	SSHv1 and SSHv2
	Global IP-MAC binding
	ICMPv6
	Port security
	IP source guard
	SAVI
	ARP spoofing prevention
	CPP and NFPP
	Various attack defense functions including NFPP, ARP anti-spoofing, DHCP/DHCPv6 attack defense, ICMP attack defense, ND attack defense, IP scanning attack defense, and customizing attack defense packet types
	Loose and strict RPF uRPF ignoring default routes
Reliability	REUP
	ERPS (G.8032)
	Rapid Link Detection Protocol (RLDP), Layer 2 link connectivity detection, unidirectional link detection, and VLAN-based loop control
	Data Link Detection Protocol (DLDP)
	IPv4 VRRP v2/v3 and IPv6 VRRP
	BFD
	GR for RIP, OSPF, and BGP
	Power modules in 1+1 redundancy mode
	Hot swapping of power modules and fan modules (not supported by the RG-S6110-24MG4VS-UP)

Feature	RG-S6100 Series
Device virtualization	VSU
NMS and maintenance	SPAN, RSPAN, and ERSPAN
	sFlow
	NTP and SNTP
	FTP and TFTP
	SNMP v1/v2/c3
	RMON (1, 2, 3, 9)
	Various types of RMON groups, including event groups, alarm groups, history groups, and statistics groups, as well as private alarm extension groups RMON used to implement Ethernet statistics, historical statistics, and alarm functions
	NETCONF
	Flow-based mirroring, and N:1 and 1:N port mirroring
	CWMP
	gRPC
	OpenFlow Special 1.3 Flow table analysis defined by all protocols Transmission of specified packets to the controller Configuring the controller's IP address and port Notifying port status changes to the controller
	CLI (Telnet/console), SSH, Syslog, SNMP over IPv6, Telnet v6, FTP/TFTP v6, DNS v6, and NTP for IPv6
	Ruijie Could-based management

Note: The item marked with the asterisk (*) will be available in the future.

6. Protocol Compliance

Organization	Standards and Protocol
IETF	RFC 1058 Routing Information Protocol (RIP) RFC 1157 A Simple Network Management Protocol (SNMP) RFC 1305 Network Time Protocol Version 3 (NTP) RFC 1349 Internet Protocol (IP) RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR RFC 1583 OSPF Version 2 RFC 1591 Domain Name System Structure and Delegation

Organization	Standards and Protocol
	RFC 1643 Ethernet Interface MIB RFC 1757 Remote Network Monitoring (RMON) RFC 1812 Requirements for IP Version 4 Router RFC 1901 Introduction to Community-based SNMPv2 RFC 1902-1907 SNMP v2 RFC 1918 Address Allocation for Private Internet RFC 1981 Path MTU Discovery for IP version 6 RFC 1997 BGP Communities Attribute RFC 2131 Dynamic Host Configuration Protocol (DHCP) RFC 2132 DHCP Options and BOOTP Vendor Extensions RFC 2236 IGMP RFC 2328 OSPF Version 2 RFC 2385 Protection of BGP Sessions via the TCP MD5 Signature Option RFC 2439 BGP Route Flap Damping RFC 2460 Internet Protocol, Version 6 (IPv6) RFC 2461 Neighbor Discovery for IP Version 6 (IPv6) RFC 2462 IPv6 Stateless Address Auto configuration RFC 2463 Internet Control Message Protocol for IPv6 (ICMPv6) RFC 2545 Use of BGP 4 Multiprotocol Extensions for IPv6 Inter Domain Routing RFC 2571 SNMP Management Frameworks RFC 2711 IPv6 Router Alert Option RFC 2787 Definitions of Managed Objects for the Virtual Router Redundancy Protocol RFC 2863 The Interfaces Group MIB RFC 2865 Remote Authentication Dial In User Service (RADIUS) RFC 2918 Route Refresh Capability for BGP 4 RFC 2925 Definitions of Managed Objects for Remote Ping, Traceroute, and Lookup Operations (Ping only) RFC 2934 Protocol Independent Multicast MIB for IPv4 RFC 3046 DHCP Option82 RFC 3065 Autonomous System Confederation for BGP RFC 3101 OSPF Not so stubby area option RFC 3137 OSPF Stub Router Advertisement sFlow RFC 3417 (SNMP Transport Mappings) RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP) RFC 3509 Alternative Implementations of OSPF Area Border Routers RFC 3513 IP Version 6 Addressing Architecture RFC 3575 IANA Considerations for RADIUS RFC 3579 RADIUS Support For EAP RFC 3623 Graceful OSPF Restart RFC 3768 VRRP RFC 3810 Multicast Listener Discovery Version 2 (MLDv2) for IPv6

Organization	Standards and Protocol
	RFC 3973 PIM Dense Mode RFC 4022 MIB for TCP RFC 4271 A Border Gateway Protocol 4 (BGP 4) RFC 4273 Definitions of Managed Objects for BGP 4 RFC 4360 BGP Extended Communities Attribute RFC 4456 BGP Route Reflection: An Alternative to Full Mesh Internal BGP (IBGP) RFC 4486 Subcodes for BGP Cease Notification Message RFC 4552 Authentication/Confidentiality for OSPFv3 RFC 4724 Graceful Restart Mechanism for BGP RFC 4750 OSPFv2 MIB partial support no SetMIB RFC 4760 Multiprotocol Extensions for BGP 4 RFC 4940 IANA Considerations for OSPF RFC 5065 Autonomous System Confederation for BGP RFC 5187 OSPFv3 Graceful Restart RFC 5340 OSPFv3 for IPv6 RFC 5492 Capabilities Advertisement with BGP 4 RFC 6620 FCFS SAVI RFC 768 User Datagram Protocol (UDP) RFC 783 TFTP Protocol (revision 2) RFC 792 Internet Control Message Protocol (ICMP) RFC 793 Transmission Control Protocol (TCP) RFC 813 Window and Acknowledgement Strategy in TCP RFC 815 IP datagram reassembly algorithms RFC 826 Ethernet Address Resolution Protocol (ARP) RFC 854 Telnet Protocol RFC 959 File Transfer Protocol (FTP)
IEEE	IEEE 802.2 Logical Link Control IEEE 802.1ab Link Layer Discovery Protocol IEEE 802.1ad Provider Bridges IEEE 802.1ax/IEEE802.3ad Link Aggregation IEEE 802.1D Media Access Control (MAC) Bridges IEEE 802.1D Spanning Tree Protocol IEEE 802.1Q Virtual Bridged Local Area Networks (VLAN) IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE Std 802.3x Full Duplex and flow control

7. Typical Applications

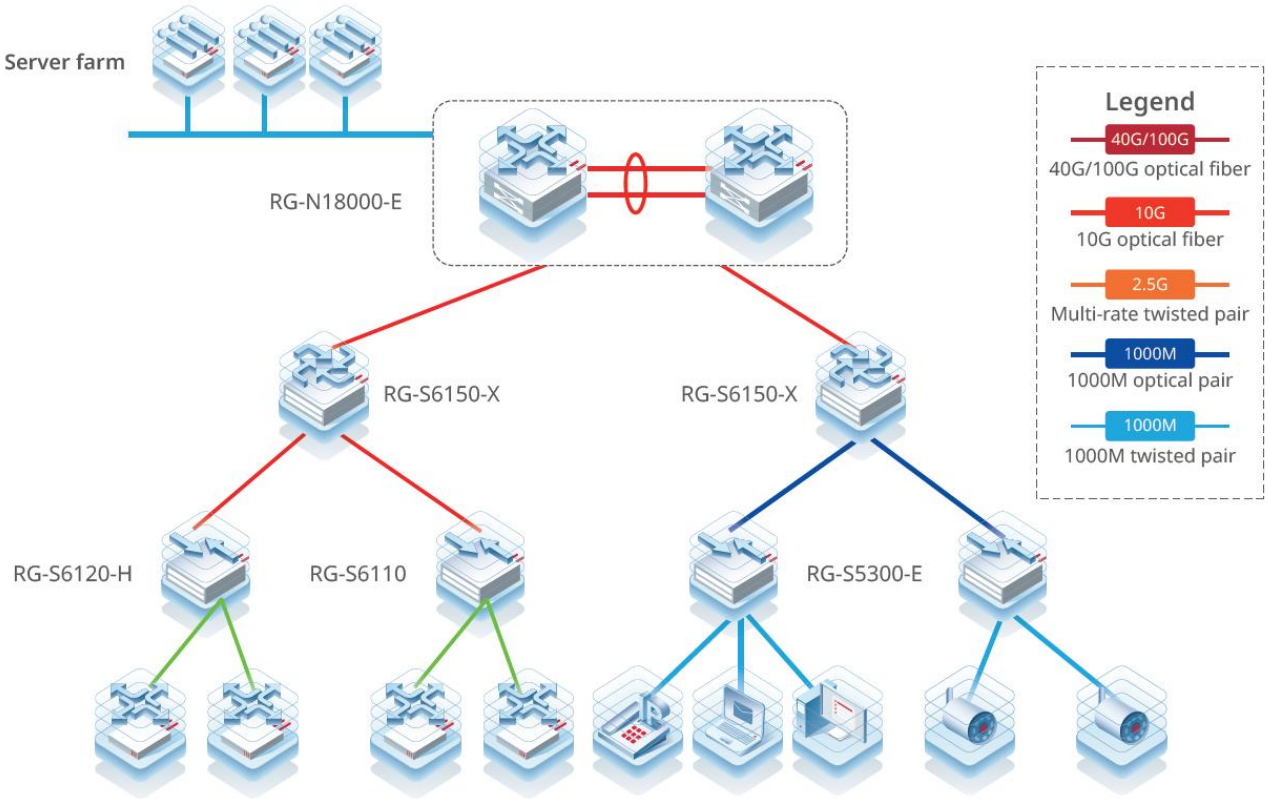
RG-S6100 series switches can be deployed at the access layer of a large-scale enterprise campus network to serve as the PSE for high-power APs.

RG-S6100 series switches provide abundant security management mechanisms to achieve robust network security defense and highly secure network access control.

RG-S6100 series switches adopt sound management policies for bandwidth management to guarantee the bandwidth required by voice, multicast audio and video services, video on demand (VoD), and other key services.

Scenario

RG-S6100 series switches can be deployed at the access or aggregation layer of a small- and medium-scale campus network. The 2.5GE/5GE/10GE Ethernet ports of the RG-S6100 can serve as member ports of a high-speed aggregate interface to achieve the link bandwidth of 10 Gbps or 25 Gbps at the aggregation layer and that of the 40 Gbps or 100 Gbps at the core layer. This meets the increasing needs for high-performance bandwidth.



8. Ordering Guide

Follow the steps to order an RG-S6100 multi-GE switch:

- Select a model of RG-S6100 series switches. The device is fully equipped with fan modules that do not need to be purchased separately.

- Select power modules based on switch models. At least one power module is required.
- Select optical modules based on optical interfaces of the switch.

9. Ordering Information

The switch, expansion module, power module, and other components can be ordered as needed. Before ordering an expansion module or power module, contact the online customer service personnel for the latest support information about the module.

Switches and Power Modules

Model	Description
RG-S6110-24MG4VS-UP	24 x 100/1000/2.5G/5GBASE-T ports, 4 x 10GE/25GE SFP28 ports
RG-S6120-24XMG4XS4VS-UP-H	24 x 100/1000/2.5G/5G/10GBASE-T ports, supporting PoE/PoE+/PoE++, 4 x 1GE/10GE SFP+ ports, 4 x 10GE/25GE SFP28 ports
RG-S6110-48MG4VS2QXS-UP	48 x 100/1000/2.5G/5GBASE-T ports, 4 x 10GE/25GE SFP28 ports, 2 x 40GE QSFP+ ports
RG-S6120-48XMG4VS2QXS-UP-H	48 x 100/1000/2.5G/5G/10GBASE-T ports, 4 x 10GE/25GE SFP28 ports, 2 x 40GE QSFP+ ports
RG-PA600I-P-F	600 W AC power module
RG-PA1000I-P-F	1000 W AC power module

Note:

- 4 x 1GE/10GE SFP+ ports support 1GE SFP transceivers, 10GE SFP+ transceivers.
- 4 x 10GE/25GE SFP28 ports support 10GE SFP+ transceivers and 25GE SFP28 transceivers. All 10GE/25GE SFP28 ports must work at the same rate, either 25G or 10G.
- 2 x 40GE QSFP+ ports support 40GE QSFP+ transceivers. The port can work in 4 x 10GE mode.

Optical Transceivers and Cables

1GE

Model	Description
Mini-GBIC-GT	1000BASE-X to 1000BASE-T, copper SFP transceiver, RJ45, 100 m over Cat 5e/6/6a The port needs to be configured with auto-negotiation
MINI-GBIC-SX-MM850	1000BASE-SX, SFP transceiver, 850 nm, Duplex LC, 500 m over MMF
MINI-GBIC-LX-SM1310	1000BASE-LX, SFP transceiver, 1310 nm, Duplex LC, 10 km over SMF
MINI-GBIC-LH40-SM1310	1000BASE-LH, SFP transceiver, 1310 nm, Duplex LC, 40 km over SMF

Model	Description
MINI-GBIC-ZX80-SM1550	1000BASE-ZX, SFP transceiver, 1550 nm, Duplex LC, 80 km over SMF
GE-SFP-LX20-SM1310-BIDI	1000BASE-LX, SFP transceiver, TX1310/RX1550, BiDi LC, 20 km over SMF
GE-SFP-LX20-SM1550-BIDI	1000BASE-LX, SFP transceiver, TX1550/RX1310, BiDi LC, 20 km over SMF
GE-SFP-LH40-SM1310-BIDI	1000BASE-LH, SFP transceiver, TX1310/RX1550, BiDi LC, 40 km over SMF
GE-SFP-LH40-SM1550-BIDI	1000BASE-LH, SFP transceiver, TX1550/RX1310, BiDi LC, 40 km over SMF
GE-SFP-LX03-SM1310-BIDI-I	1000BASE-LX, SFP transceiver, TX1310/RX1550, BiDi LC, 3 km over SMF
GE-SFP-LX03-SM1550-BIDI-I	1000BASE-LX, SFP transceiver, TX1550/RX1310, BiDi LC, 3 km over SMF

Note: BiDi transceivers must be used in pairs. If one end uses GE-SFP-LX20-SM1310-BIDI, the other end must use GE-SFP-LX20-SM1550-BIDI.

10GE

Model	Description
XG-SFP-SR-MM850	10GBASE-SR, SFP+ transceiver, 850nm, Duplex LC, 300 m over MMF
XG-SFP-LR-SM1310	10GBASE-LR, SFP+ transceiver, 1310nm, Duplex LC, 10 km over SMF
XG-SFP-ER-SM1550	10GBASE-ER, SFP+ transceiver, 1550nm, Duplex LC, 40 km over SMF
XG-SFP-ZR-SM1550	10GBASE-ZR, SFP+ transceiver, 1550nm, Duplex LC, 80 km over SMF
XG-SFP-LR10-SM1270-BIDI-I	10GBASE-LR, SFP+ transceiver, TX1270/RX1330, BiDi LC, 10 km over SMF
XG-SFP-LR10-SM1330-BIDI-I	10GBASE-LR, SFP+ transceiver, TX1330/RX1270, BiDi LC, 10 km over SMF
XG-SFP-AOC1M	10GBASE, SFP+ active optical cable (AOC), 1 m, including one cable and two optical transceivers
XG-SFP-AOC3M	10GBASE, SFP+ active optical cable (AOC), 3 m, including one cable and two optical transceivers
XG-SFP-AOC5M	10GBASE, SFP+ active optical cable (AOC), 5 m, including one cable and two optical transceivers

25GE

Model	Description
VG-SFP-SR-MM850	25GBASE-SR, SFP28 transceiver, 850 nm, Duplex LC, 100 m over OM4 MMF, 70 m over OM3 MMF
VG-SFP-AOC7M(M)	25GBASE, SFP28 active optical cable (AOC), 7 m, including one cable and two optical transceivers

40GE

Model	Description
40G-QSFP-LSR-MM850	40GBASE-LSR, QSFP+ transceiver, 850 nm, MPO 1 x 12, 400 m over OM4 MMF, 300 m over OM3 MMF
40G-QSFP-LR4-SM1310	40GBASE-LR4, QSFP+ transceiver, 1310 nm, Duplex LC, 10 km over SMF
40G-QSFP-iLR4-SM1310	40GBASE-iLR4, QSFP+ transceiver, 1310 nm, Duplex LC, 2 km over SMF
40G-QSFP-LX4-SM1310	40GBASE-LX4, QSFP+ transceiver, 1310 nm, Duplex LC, 150 m over OM3/OM4 MMF, 2 km over SMF
40G-AOC-5M	40GBASE, QSFP+ active optical cable (AOC), 5 m, including one cable and two optical transceivers

10. Package Contents

Item	RG-S6110-24MG4VS-UP	RG-S6110-48MG4VS2QXS-UP RG-S6120-24XMG4XS4VS-UP-H RG-S6120-48XMG4VS2QXS-UP-H
Chassis	1	1
Fan module	/	3 (M2SFAN I-F, pre-installed)
Power Cord	1	/
Grounding wire	1	1
Nylon buckle	1	/
Mounting bracket	2	6 (Includes a front Mounting bracket and a rear Mounting bracket and a slide rail)
Rubber pad	4	4
M4x8 cross recessed countersunk head screw, GB819-85	8	14

Item	RG-S6110-24MG4VS-UP	RG-S6110-48MG4VS2QXS-UP RG-S6120-24XMG4XS4VS-UP-H RG-S6120-48XMG4VS2QXS-UP-H
M6x16 screw	4	4
M6 Cage nut	4	4
RG-S61 Series Switchs User Manual	/	1
Mounting Bracket Installation Guide	1	/
Network Product Warranty Manual and Hazardous Substance Statement	1	1
Ruijie Networks Access Product Management Software	1 (pre-installed)	1 (pre-installed)

11. Warranty

For more information about warranty terms and period, contact your local sales agency:

- Warranty terms: https://www.ruijienetworks.com/support/servicepolicy
- Warranty period:https://www.ruijienetworks.com/support/servicepolicy/Service-SupportSummany/
- Note: The warranty terms are subject to the terms of different countries and distributors.

12. More Information

For more information about Ruijie Networks, visit the official Ruijie website or contact your local sales agency:

- Ruijie Networks official website: https://www.ruijienetworks.com/
- Online support: https://www.ruijienetworks.com/support
- Hotline support: https://www.ruijienetworks.com/support/hotline
- Email support: service_rj@ruijienetworks.com