Ruijie RG-S2910XS-E

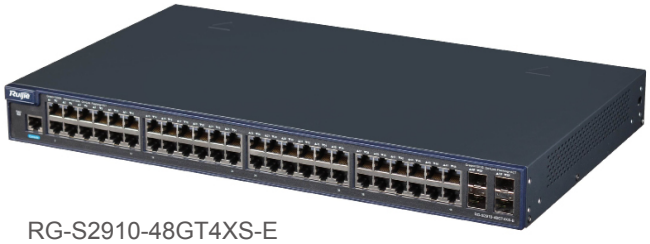
Switch Series Datasheet

Ruijie RG-S2910XS-E is a collection of next-gen Gigabit switches architected for superior security, performance and energy efficiency. The switch series delivers full Gigabit access and unparalleled scalability to 10GE performance. With all new hardware architecture and Ruijie's latest RGOS11.X modular operating system, the RG-S2910XS-E switches offer larger table capacity, faster hardware processing performance and better operation experience to achieve high-density access and demanding aggregation implementation. The PoE switch models enable all downlink ports running on PoE+ to fulfill access and 10GE uplink that require high bandwidth demand.

HIGHLIGHTS

- Network Virtualization (VSU) Support
- Dynamic Network Protection (CPP and NFPP Technologies)
- Basic Layer 3 Routing Support
- Power Redundancy Support
- Full 48-Port PoE+ Support

RG-S2910-24GT4XS-E



RG-S2910-48GT4XS-E

RG-S2910C-24GT2XS-HP-E

RG-S2910C-48GT2XS-HP-E

PRODUCT FEATURES

Premier Scalability

All the SFP+ and SFP ports in the RG-S2910XS-E series are backwards compatible with lower level modules. Models supporting PoE comply with 802.3af and 802.3at standards for remote power supply. The switches also provide dual modular power supplies to sustain all downlink PoE+ ports. With diverse quantities of expansion slots, the RG-S2910XS-E series is scalable to various Gigabit fiber and copper port densities allowing flexible customization.

Comprehensive Protection Policies

ARP virus and attacks are common network threats with significant negative impacts. The RG-S2910XS-E series supports multiple anti-ARP spoofing modes. No matter users automatically retrieve address via the DHCP server or use a fixed IP address, the switches can still record the true user IP and MAC addresses. Upon receiving ARP packets from the host, the packets will be compared with the IP and MAC addresses in the record. Only verified ARP packets can be forwarded while those malicious packets will be discarded. The RG-S2910XS-E series fully protects network users from ARP spoofing intrusion.

The RG-S2910XS-E switches proactively defend against different kinds of DDOS attacks. Open networks are susceptible to viruses. Network devices and servers are also vulnerable under attacks by malicious network users. All these will affect normal network operation. Commonly found problems are ARP flooding casing response failure in gateway, ICMP flooding overloading the network CPU and DHCP flooding attacks resulting in deficiency in DHCP server address and making users unable to obtain IP address for normal network access.

The RG-S2910XS-E switch series offers CPU Protect Policy (CPP), which is an industry-leading CPU protection mechanism. The CPP technology diverges traffic to CPU into different packet flows and organizes them based on priority. Bandwidth speed limitation can be implemented to protect the CPU from occupation by rogue traffic, malicious attacks and resources consumption.

Users can also find Network Foundation Protection Policy (NFPP) readily available in the RG-S2910XS-E switches. The NFPP technology can limit the number of packets that users issue (including ARP, ICMP, DHCP packets). It can discard any packet that exceeds the limit threshold and even isolate malicious attackers to protect the network from attacks and guarantee outstanding stability.

The switches also support DHCP snooping, allowing DHCP response only from the trusted ports to prevent DHCP server spoofing. Based on the DHCP protection feature, the switches can dynamically monitor ARP and check user's IP address. Packets inconsistent with the binding table will be labeled as rogue and hence discarded. The feature prevents attacks such as ARP spoofing and user source IP address spoofing.

Advanced Virtualization Technology

All the RG-S2910XS-E models support Virtual Switch Unit (VSU) technology. It enables interconnection of several physical devices and virtualizes them into one logical unit. The logical device uses one single IP address, Telnet process, command-line interface (CLI), and enables auto version inspection and configuration. From the user perspective, the benefits are multiplied work efficiency and enhanced user experience of several devices operating at the same. And they only have to manage one device. The VSU technology also offers multiple benefits below:

• **Easy management:** Administrators can centrally manage all the devices at the same time. It is no longer necessary to configure and manage the switches one by one.

• **Simplified typology:** The VSU is regarded as one switch in the network. By connection of aggregation link and peripheral network devices, MSTP protocol is unnecessary as there is no Layer 2 loop network. All protocols operate as one switch.

• **Millisecond failover:** The VSU and peripheral devices connected via the aggregation link. Upon failure event of any device or link, failover to another member link requires only 50 to 200ms.

• **Exceptional scalability:** The network is hot swappable, any devices leaving or joining the virtualized network cause zero impact on other devices.

• **Investment protection:** Connection formed by the VSU and peripheral devices via the aggregation link provides link redundancy and achieves load balancing. Such deployment fully utilizes all the network device and bandwidth resources. Random Gigabit ports and cables can form a VSU virtualized network system. No extra cables and expansion cards are required and there is no restriction on ports and cables. The switch series hence offers excellent investment protection for users.

Carrier-class Reliability

The 802.1D, 802.1w and 802.1s Spanning Tree Protocols guarantee fast convergence and improves fault tolerance. These also maintain stable network operation and link load balancing. The feature ensures optimal network channel usage and improves redundant link utilization.

Virtual Router Redundancy Protocol (VRRP) is also available for network stability.

Another method to guarantee smooth network operation is Rogue Location Discovery Protocol (RLDP). The technology quickly detects link interruption and fiber link unidirectionality. It also prevents loop failure caused by connecting a hub or other devices to the port.

Ethernet Ring Protection Switching (ERPS) (G.8032) implements loop blocking and link recovery on the master device. Other devices directly report link status to the master device. Without passing through other standby devices, the failover time of loop interruption and recovery is hence faster than STP. The ERSP's

link failover rate can be completed within milliseconds under ideal conditions.

With STP disabled, the basic link redundancy can still be maintained via Rapid Ethernet Uplink Protection Protocol (REUP). It also enables even faster millisecond failover protection than that of the STP.

The switches support Bidirectional Forwarding Detection (BFD). It provides a fast detection on the forwarding channel status between 2 routing devices for upper layer protocols. The feature greatly shortens the convergence time when changes are implemented in the upper link status.

Software-defined Networking (SDN)

The RG-S2910XS-E switch series fully supports OpenFlow 1.3. In collaboration with Ruijie's SDN controller, it forms a large-scale Layer 2 networking architecture with ease. Smooth upgrade of the whole network to a SDN one is also enabled. The RG-S2910XS-E series hence greatly simplifies the network management and minimizes network deployment savings.

Energy Efficiency

Ruijie has put unswerving research effort in solving noise and energy consumption problems of conventional switches. The new RG-S2910XS-E switch series offers a total solution for these problems, providing a more quiet work environment and resolving heavy energy use caused by the deployment of a large number of devices.

The RG-S2910XS-E switches adopt next-gen hardware architecture with an advanced energy-saving circuit design and component selection. The switch offers an overall energy deduction of more than 40% for maximized cost savings. Noise pollution level is also lowered. All models in the series deploy axial flow fans with speed adjustment available. The fans enable intelligent temperature control to adjust the speed based on current ambient temperature. The design totally ensures stable operation and minimizes power consumption and noise level at the same time.

Under the environment of PoE power supply, the RG-S2910XS-E switches offer auto, energy-saving and static modes to deal with various deployment challenges.

The auto-power-down mode is another feature highlight. When an interface is down for a certain period of time, the system will automatically power down that interface for extra energy efficiency.

The switch series also supports EEE energy saving function. The system will automatically turn an idle port into energy-saving mode. The system will regularly issue listening streams to the port. It will resume service upon receiving a new packet.

The RG-S2910XS-E switch series complies with RoHS standards adopted by the European Union on restricting the use of hazardous materials in the manufacture process. The series also fulfills SJ/T 11363/11364/11365 standards.

Simple and Easy Network Maintenance

The RG-S2910XS-E switch series supports abundant features such as SNMP V1/V2/V3, RMON, Syslog, and logs and configuration backup using USB for routine diagnosis and maintenance. Administrators can use a wide variety of methods for easier management and such include CLI, web management, Telnet, etc.

TECHNICAL SPECIFICATIONS

Model	RG-S2910-24GT4XS-E	RG-S2910-48GT4XS-E	RG-S2910C-24GT2XS-HP-E	RG-S2910C-48GT2XS-HP-E
Fixed Ports	24-Port 10/100/1000Base-T, 4-Port 1G/10G Base-X SFP+ (non-combo), AC	48-Port 10/100/1000Base-T, 4-Port 1G/10G Base-X SFP+ (non-combo), AC	24-Port 10/100/1000Base-T (PoE/PoE+), 2-Port 100/1000Base-X SFP (combo), 2-Port 1G/10G Base-X SFP+ (non-combo), 1 USB, 2 Slots for Power Supply, AC/DC	48-Port 10/100/1000Base-T (PoE/PoE+), 2-Port 100/1000Base-X SFP (combo), 2-Port 1G/10G Base-X SFP+ (non-combo), 1 USB, 2 Slots for Power Supply, AC/DC
Expansion Slots	N/A	N/A	2	2
Expansion Modules	N/A	N/A	M2910-01XS, M2910-01XT	
Switching Capacity	264Gbps			
Forwarding Rate	96Mpps	132Mpps	96Mpps	132Mpps

Model	RG-S2910-24GT4XS-E	RG-S2910-48GT4XS-E	RG-S2910C-24GT2XS-HP-E	RG-S2910C-48GT2XS-HP-E
Layer 2 Features				
802.1Q VLAN	4K 802.1Q VLAN Port-based VLAN MAC-based VLAN Protocol-based VLAN Private VLAN Voice VLAN Private VLAN IP subnet-based VLAN GVRP			
QinQ	Basic QinQ Flexible QinQ N:1 VLAN switching 1:1 VLAN switching			
ACL	Standard IP ACL (hardware ACL based on IP addresses) Extended IP ACL (based on IP addresses and TCP/UDP port number) MAC-extended ACL (based on source and destination MAC addresses and optional Ethernet type) Time-based ACL Expert ACL (based on the flexible combination of VLAN number, Ethernet type, MAC address, IP address, TCP/UDP port, protocol type, and time) ACL80 IPv6 ACL ACL logging ACL counter ACL remark Global ACL ACL redirect			
QoS	Port traffic identification Port traffic limit 802.1p/DSCP/TOS traffic classification 8 priority queues on each port SP, WRR, DRR, SP+WFQ, SP+WRR, SP+DRR, RED/WRED queue scheduling			
DHCP	DHCP server DHCP client DHCP snooping DHCP relay IPv6 DHCP snooping IPv6 DHCP client IPv6 DHCP relay			
L2 Protocols	IEEE802.3, IEEE802.3u, IEEE802.3z, IEEE802.3x, IEEE802.3ad, IEEE802.1p, IEEE802.1x, IEEE802.3ab, IEEE802.1Q (GVRP), IEEE802.1d, IEEE802.1w, IEEE802.1s, IGMP snooping v1 / v2 / v3			

Model	RG-S2910-24GT4XS-E	RG-S2910-48GT4XS-E	RG-S2910C-24GT2XS-HP-E	RG-S2910C-48GT2XS-HP-E
Security Features	IP address, MAC address and port binding IPv6 address, MAC address and port binding Illegal MAC addresses filtering 802.1X authentication based on ports and MAC addresses MAB Portal and portal 2.0 authentication ARP-check DAI ARP packet rate limit Gateway anti-ARP spoofing Suppression of broadcast storms Hierarchical management and password protection RADIUS and TACAS+ AAA (IPv4/IPv6) authentication for logon management SSH and SSH V2.0 BPDU guard IP source guard CPP, NFPP Port protection			
Cable Detection	Support			
EEE	Supports EEE of IEEE 802.3az standard. When EEE is enabled, the power consumption of ports is greatly reduced.			
Port Standby	Support			
PoE	Not Support		IEEE802.3af and 802.3at power supply standards Automatic, energy-saving and static power supply modes Hot startup and uninterrupted power supply Port priority PoE devices support stacking	
Layer 3 Features				
IP Route	IPv4/IPv6 static routing RIP, RIPng Routing policy			
IPv6 Basic Protocols	IPv6 addressing, Neighbor Discovery (ND), ICMPv6, IPv6 Ping and IPv6 Tracert			
VSU	Support (up to 9 stack members) Local and distant stacking Cross-chassis link aggregation in the stack Stacking via any 10G Ethernet ports			
Management Features	SNMPv1 / v2C / v3, CLI (Telnet / Console), RMON (1, 2, 3, 9), SSH, Syslog, NTP / SNTP, FTP, TFTP, Web			

Model	RG-S2910-24GT4XS-E	RG-S2910-48GT4XS-E	RG-S2910C-24GT2XS-HP-E	RG-S2910C-48GT2XS-HP-E
Hardware Specifications				
Dimensions (D x W x H) (mm)	440 × 200 × 43.6	440 × 260 × 43.6	440 × 260 × 44	440 × 260 × 44
Power Supply	AC input: Rated voltage range: 100VAC to 240VAC Maximum voltage range: 90VAC to 264VAC Frequency: 50Hz to 60Hz		AC input: Rated voltage range: 100VAC to 240VAC Maximum voltage range: 90VAC to 264VAC Frequency: 50Hz to 60Hz DC input: Rated voltage range: -36VDC to -72VDC	
Fans	Support speed modulation and fault alarm			
Temperature	Operating temperature: 0ºC~50ºC Storage temperature: -40ºC~70ºC			
Humidity	Operating humidity: 10%~90%RH Storage humidity: 5%~95%RH			

TYPICAL APPLICATION

The RG-S2910XS-E switch series features high security, efficiency and intelligence with superior energy-saving capacity. The series is suitable for the following scenarios:

• Full gigabit access to LANs of large-scale enterprises and institutions, such as government buildings, universities and large manufacturing/ energy/ metallurgy enterprises

• Full gigabit access to business systems, such as hospitals, libraries, exhibition centers and websites

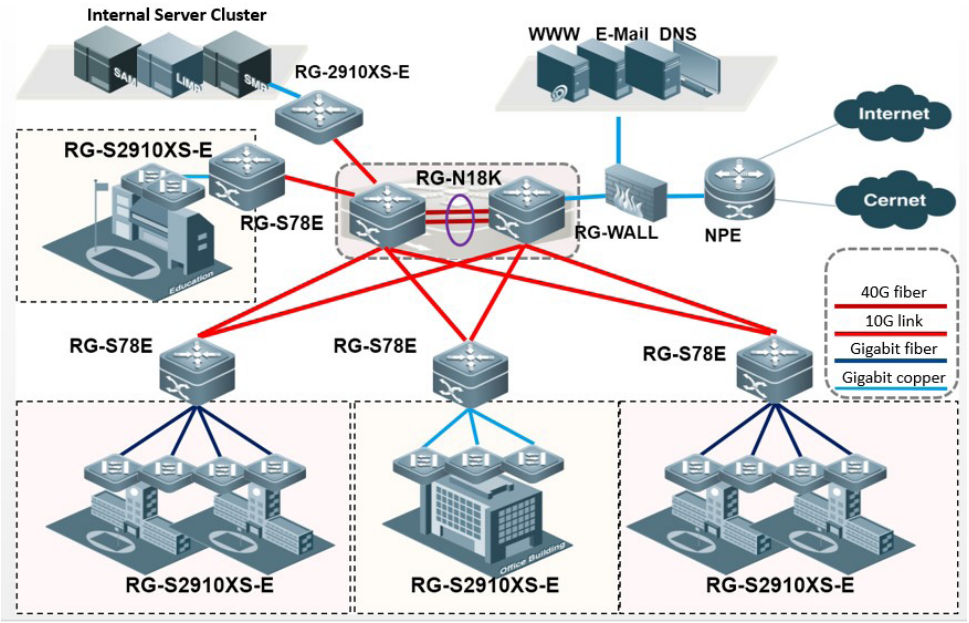
• IP phones, WLAN access points and high-definition cameras access

• Full gigabit access to server clusters and 10G high-bandwidth uplink

• Secure access through flexible and diverse security control policies that can defend against network viruses and attacks

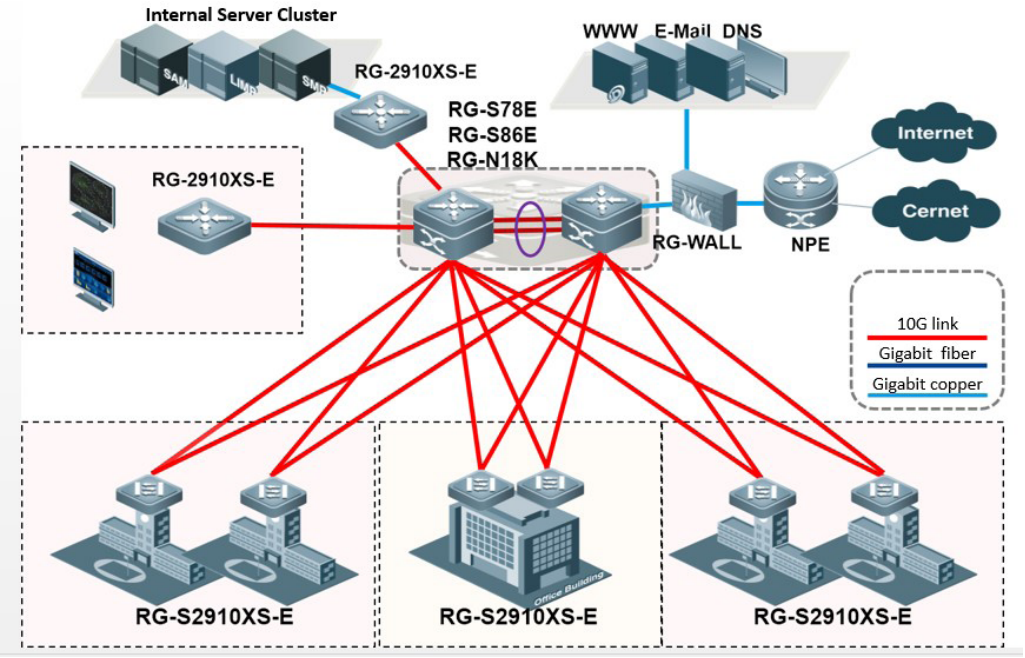
Scenario 1

The RG-S2910XS-E Series Switch is deployed with the RG-S5750E/P Series / the RG-S78E Series Aggregation Switches. Also teaming up the RG-N18K Series at the core, the deployment provides Gigabit Ethernet downlinks and 10 Gigabit Ethernet uplinks to meet the ever-increasing number of network nodes and demanding bandwidth requirements.



Scenario 2

The RG-S2910XS-E Series Switch can be deployed with RG-S78E Series/ RG-S86E Series/ RG-N18K Series to provide Gigabit Ethernet downlinks and 10 Gigabit Ethernet uplinks to the simplified core network architecture. Different combinations provide comprehensive coverage for network deployment of large, medium and small sizes. Not only does it simplify the network architecture, but also significantly enhances the stability and efficiency of the network system.



ORDERING INFORMATION

Model	Description
RG-S2910-24GT4XS-E	24-Port 10/100/1000Base-T, 4-Port 1G/10G Base-X SFP+ (non-combo), AC
RG-S2910-48GT4XS-E	48-Port 10/100/1000Base-T, 4-Port 1G/10G Base-X SFP+ (non-combo), AC
RG-S2910C-24GT2XS-HP-E	24-Port 10/100/1000Base-T (PoE/PoE+), 2-Port 100/1000Base-X SFP (combo), 2-Port 1G/10G Base-X SFP+ (non-combo), 1 USB, 2 Expansion Slots, 2 Slots for Power Supply, AC/DC
RG-S2910C-48GT2XS-HP-E	48-Port 10/100/1000Base-T (PoE/PoE+), 2-Port 100/1000Base-X SFP (combo), 2-Port 1G/10G Base-X SFP+ (non-combo), 1 USB, 2 Expansion Slots, 2 Slots for Power Supply, AC/DC
M2910-01XS	1-Port 10G SFP+ Interface Module, for S2910XS PoE models
M2910-01XT	1-Port 10G copper Interface Module, for S2910XS PoE models
RG-M5000E-AC500P	AC Power Module, 370W Power Budget for PoE, up to 24 PoE ports or 12 PoE+ ports (only for RG-S2910C-24GT2XS-HP-E and RG-S2910C-48GT2XS-HP-E)
RG-M5000E-DC500P	DC Power Module, -32VDC to -72VDC DC input voltage, 370W Power Budget for PoE, up to 24 PoE ports or 12 PoE+ ports (only for RG-S2910C-24GT2XS-HP-E and RG-S2910C-48GT2XS-HP-E)
RG-PA1150P-F	AC Power Module, 740W Power Budget for PoE, up to 48 PoE ports or 24 PoE+ ports (only for RG-S2910C-24GT2XS-HP-E and RG-S2910C-48GT2XS-HP-E)

Model	Description
FE-SFP-LX-MM1310	100M Multimode Interface Module (2km)
FE-SFP-LH15-SM1310	100M Single-mode Interface Module (15km)
Mini-GBIC-GT	1000BASE-GT mini GBIC Transceiver
Mini-GBIC-SX	1000BASE-SX, SFP Transceiver, MM (850nm, 550m, LC)
Mini-GBIC-LX	Single-port 1000BASE-LX mini GBIC Transceiver (LC)
Mini-GBIC-LH40	Single-port 1000BASE-LH mini GBIC Transceiver (40km, LC)
Mini-GBIC-ZX50	Single-port 1000BASE-ZX mini GBIC Transceiver (50km, LC)
Mini-GBIC-ZX80	Single-port 1000BASE-ZX mini GBIC Transceiver (80km, LC)
Mini-GBIC-ZX100	1000BASE-ZX mini GBIC Transceiver (100km)
XG-SFP-SR-MM850	10GBASE-SR, SFP+ Transceiver, MM (850nm, 300m, LC)
XG-SFP-LR-SM1310	10GBASE-SR, SFP+ Transceiver (1310nm, 10km, LC)
XG-SFP-ER-SM1550	10GBASE-SR, SFP+ Transceiver (1550nm, 40km, LC)
XG-SFP-CU1M	10GBASE-CU SFP+ Cable (1m)
XG-SFP-CU3M	10GBASE-CU SFP+ Cable (3m)
XG-SFP-CU5M	10GBASE-CU SFP+ Cable (5m)

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