



Ruijie RG-S7910E Series Switches Datasheet



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Figure 1 RG-S7910E (front view)



Figure 1 RG-S7910E (rear view)

Product Overview

Ruijie RG-S7910E Switch Series is a high-end multi-service core switch for next-generation integrated networks and Metropolis Area Networks (MANs) of operators. Implementing RGOS12.X operating system and VSU virtualization technologies, this switch improves efficiency of operation and maintenance, and fully supports 100GE Ethernet standard. Ruijie RG-S7910E integrates IPv4, IPv6, MPLS, and VPN network services, and offers highly reliable technologies, such as nonstop forwarding, nonstop upgrade, graceful restart and ERPS, which allow this device to ensure the maximum of normal running time when enhancing the productivity of users. Deployed in network scenarios, such as MANs of operators and campus networks, according to service requirements, RG-S7910E Switch Series provides users with industry solutions that feature high performance, high reliability and low power consumption.

Feature highlights:

- Ultra-performance (800 Gbps per slot, upto 6.4 Tbps)
- Space-saving (only 10U rack height, equivalent to 2/3 of similar devices)
- Energy-saving (latest Broadcom TD3 16 nm chip adopted, W/Tbps reduced by 30%)



Product Features

Carrier-class Reliability

Redundant design of the RG-S7910E Switch Series key components delivers excellent protection: 1+1 redundancy for control engines and N+M redundancy for power modules. All redundant components are hot-swappable to maximize reliability and availability.

Hot patch technology is also supported to enable online upgrade.

Support GR for OSPF/IS-IS/BGP and BFD for VRRP/OSPF/BGP4/ISIS/ISISv6/static routing to enable the fast fault detection mechanism of different protocols. The feature minimizes the fault detection time to less than 50ms.

Multi-processing Modular Operating System

Since 1998, Ruijie has been investing on the R&D of modular operating system. The RG-S7910E Switch Series software platform is designed based on the new-generation RGOS 12.X multi-processing modular operating system to decouple functional components, automatically repair component faults via hotfix technology, and ensure high availability of the software. This software platform delivers network continuity thanks to upgrade of component functions or defect repair without network disconnections. This switch also supports full virtualization and offers rich campus network features. Its key availability indicators such as multi-processing modules, process backup and hot patch have reached the industry-leading level.

Virtual Switching Unit 3.0 (VSU)

RG-S7910E Switch Series supports the Virtual Switch Unit 3.0 (VSU). The technology can virtualize multiple devices into one logical unit, which largely minimizes the number of network nodes and reduce maintenance workload. Superior 50~200ms link failover ensures smooth and uninterrupted transmission of key services. The switch supports cross-device link aggregation for easy double uplink to server/switch, effectively maximizing bandwidth investment return.

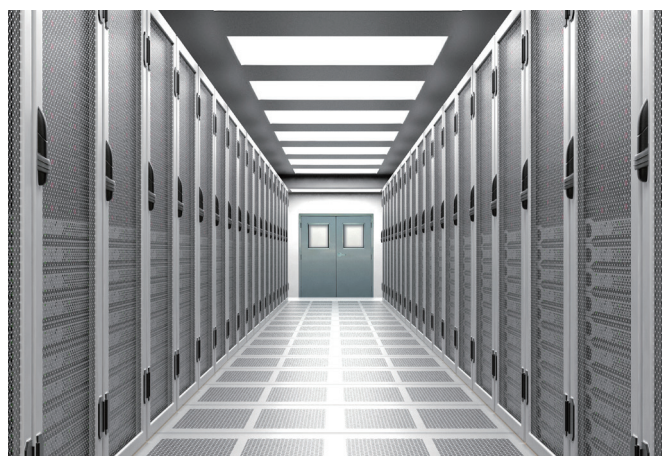
CLOS Non-blocking Architecture

Ruijie RG-S7910E Series deploys the advanced CLOS multi-plane, multi-stage architecture, which achieves complete separation of the forwarding and control planes. With independent fabric engines and control engines, it ensures all ports are running at full line rate in a non-blocking manner. The solution continues to strengthen bandwidth upgrade and business supporting capacities.

Using an orthogonal design for service modules and fabric engines, the cross-board traffic is transmitted to the fabric engines through the orthogonal connector. Ruijie RG-S7910E Series achieves zero wiring for backplane with minimized transmission loss and signal degradation. It can also improve internal transmission efficiency of the switch.

Excellent Energy Efficiency

The internal system is designed for low voltage power supply with high-efficiency modular power to form a more efficient power supply system. The multi-core CPU supports dynamic power management, and relies on all Ethernet copper ports to implement the Energy-Efficient Ethernet (EEE) standard to save power under light load. The smart fan supports 256 speed modulations with precise temperature control, energy saving and noise control. The device can function at high temperature for a long period of time or in harsh environment. The RG-S7910E Switch Series thereby helps clients to significantly reduce energy consumption.



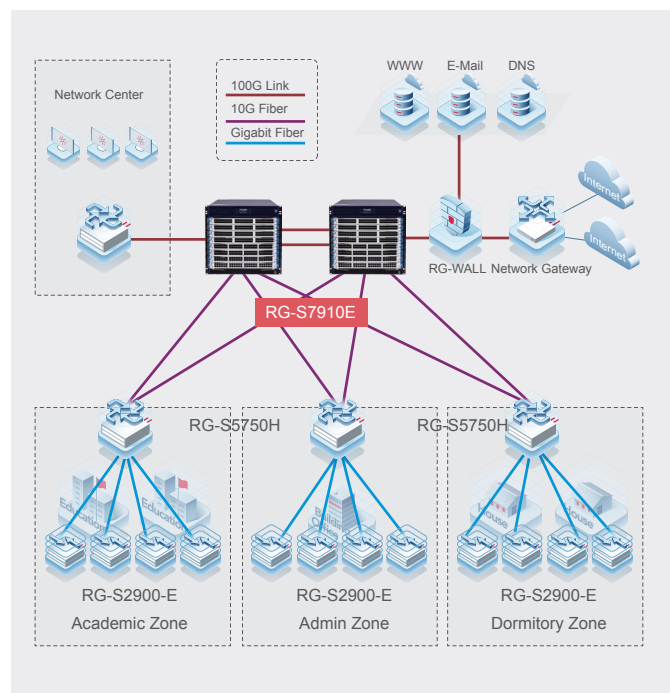
Technical Specifications

Model	RG-S7910E
Service Module Slots	8
Control Engine Slots (including switching module slots)	2
Fabric Engine Slots	2
L2 Features	Jumbo Frame, 802.1Q, STP, RSTP, MSTP, Super VLAN, GVRP, QinQ, flexible QinQ, LLDP, ERPS(G.8032)
IPv4 Features	Static routing, RIP, OSPF, IS-IS, BGP4, VRRP, Equal-cost routing, and Policy-based routing
IPv6 Features	Static routing, OSPFv3, BGP4+, IS-ISv6, MLD v1/v2, VRRPv3, Equal-cost routing, and Policy-based routing
Multicast	IGMP v1/v2/v3, IGMP snooping, IGMP Proxy, multicast routing protocols (PIM-DM, PIM-SM, PIM-SSM), MLD, and multicast static routing
ACL	Standard/Extended/Expert ACL; ACL80; IPv6 ACL
QoS	802.1P, Queue scheduling mechanisms (SP, WRR, and SP+WRR), RED/WRED, input/output port-based speed limit
Port Mirroring	Many-to-one mirroring, flow-based remote mirroring RSPAN, and VLAN mirroring
Reliability	Control engine: 1+1 redundancy; power supply: N+M redundancy; Hot-swappable components; Hot patch and online patch upgrade; GR for OSPF/IS-IS/BGP; BFD for VRRP/OSPF/BGP4/ISIS/ISISv6/static routing
Security	NFPP (Network Foundation Protection Policy), CPP (CPU Protection), DAI, Port Security, IP Source Guard, RADIUS and TACACS+ user login authentication, uRPF, Account privileges and password security policy, Support SSHv2 to provide a secure and encrypted channel for user login

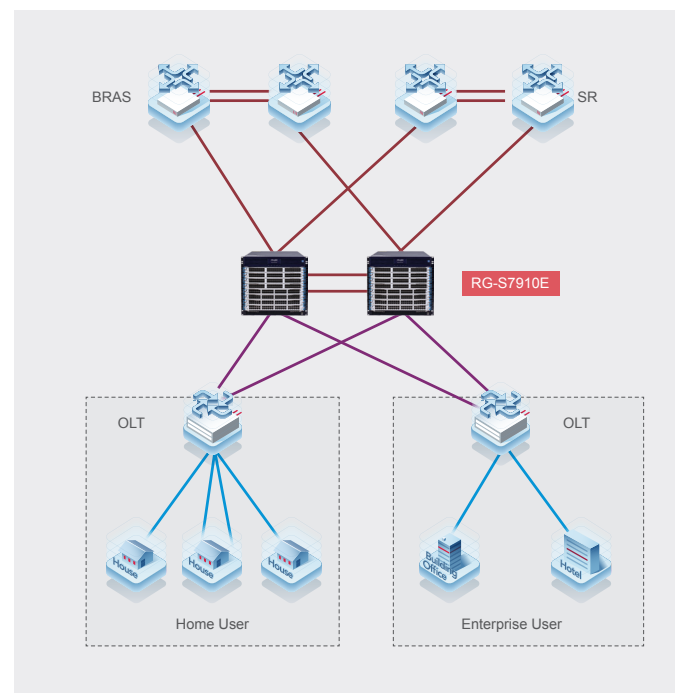
Model	RG-S7910E
Manageability	Console/Telnet/SSH2.0 command line configuration; FTP, TFTP file upload/download management; SNMP V1/V2c/V3; RMON; NTP clock; Fault alarm and self-recovery; System log; sFlow
Dimensions (W x D x H)	442 mm x 561mm x 442.5mm(10U)
Power Supply	RG-PA600I: AC: 90V ~ 264V; HVDC: 192V ~ 288V; AC power module(600W)
	RG-PA1600I: AC: 90V ~ 264V; HVDC: 192V ~ 290V; AC power module(1600W)
	RG-PD600I: DC power module(600W)
	RG-PD1800I: DC power module(1800W)
Temperature	Operating temperature: 0°C to 45°C
	Storage temperature: -40°C to 70°C
Humidity	Operating humidity: 10% to 90% RH(non-condensing)
	Storage humidity: 5% to 95% RH(non-condensing)
Operating Altitude	-500 m to 5,000 m

Typical Applications

Core Layer of Small-and Medium-sized Networks



Distribution Layer of MANs



Ordering Information

1. Main Chassis /Fabric / Control Engine

Model	Description
RG-S7910E Main Chassis / Fabric / Control Engine	
RG-S7910E	RG-S7910E, supporting 8 service modules, 2 control engines and 2 fabric engines (2 fan modules are equipped by default)
M7910-CM II	RG-S7910E 2nd-generation control engine
M7910-FE-D II	RG-S7910E 2nd-generation fabric engine

2. Power Module

Model	Description
RG-PA1600I	RG-S7910E power module (support redundancy, AC, 1600W)
RG-PA600I	RG-S7910E power module (support redundancy, AC, 600W)
RG-PD1800I	RG-S7910E power module (support redundancy, DC, 1800W)
RG-PD600I	RG-S7910E power module (support redundancy, DC, 600W)
M10C-FAN	RG-S7910E fan, each consists of 2 fan units and 1 fan control board, support side-to-rear airflow

3. Service Module

Model	Description
M7900-48GT-EA	Line card with 48 Gigabit Ethernet copper ports (RJ45)
M7900-48SFP-EA	Line card with 48 Gigabit Ethernet fiber ports (SFP, LC)
M7900C-48XS-EB	Line card with 48 10G Ethernet fiber ports (SFP+, LC)
M7900-4CQ-EB	Line card with 4 100 Ethernet fiber ports (QSFP28)
M7900-8CQ-EB	Line card with 8 100G Ethernet fiber ports (QSFP28)

4. Transceivers & Accessories

Model	Description
100G-QSFP-LR4-SM1310	100G LR4, QSFP28 optical transceiver (1310nm, 10km, LC)
100G-QSFP-iLR4-SM1310	100G iLR4, QSFP28 optical transceiver (1310nm, 2km, LC)
100G-QSFP-SR-MM850	100G SR, QSFP28 optical transceiver (850nm, 100m, MPO) (100m with OM4 fiber, 70m with OM3 fiber)
100G-QSFP-ER4-SM1310	100G ER4, QSFP28 optical transceiver (1310nm, 40km, LC) (max 30km when FEC disabled)
XG-SFP-LR-SM1310	10GBASE-SR, SFP+ Transceiver (1310nm, 10km, LC)

Model	Description
XG-SFP-SR-MM850	10GBASE-SR, SFP+ Transceiver, MM (850nm, 300m, LC)
XG-SFP-ER-SM1550	10GBASE-SR, SFP+ Transceiver (1550nm, 40km, LC)
XG-SFP-ZR-SM1550	10GBASE-SR, SFP+ Transceiver (1550nm, 80km, LC)
MINI-GBIC-ZX100-SM1550	1000BASE-ZX100, SFP Transceiver, SM (1550nm, 100km, LC).
MINI-GBIC-ZX80-SM1550	1000BASE-ZX80, SFP Transceiver, SM (1550nm, 80km, LC).
MINI-GBIC-LH40-SM1310	1000BASE-LH, SFP Transceiver, SM (1310nm, 40km, LC).
MINI-GBIC-SX-MM850	1000BASE-SX, SFP Transceiver, SM (850nm, 500m, LC).
MINI-GBIC-LX-SM1310	1000BASE-LX, SFP Transceiver, SM (1310nm, 10km, LC).
Mini-GBIC-GT	1000BASE-TX, SFP Transceiver (100m).
XG-SFP-AOC1M	10GBASE SFP+ Optical Stack Cable (included both side transceivers) , 1 Meter
XG-SFP-AOC3M	10GBASE SFP+ Optical Stack Cable (included both side transceivers) , 3 Meter
XG-SFP-AOC5M	10GBASE SFP+ Optical Stack Cable (included both side transceivers) , 5 Meter
100G-AOC-5M	100G QSFP28 Optical Stack Cable (included both side transceivers), 5 Meters
100G-AOC-10M	100G QSFP28 Optical Stack Cable (included both side transceivers), 10 Meters

(*) indicates future support.



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