

Ruijie RG-S7808C

Core Switch Datasheet

Ruijie Networks Co., Ltd.

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Contents

1	Product Picture	3
2	Product Overview	4
3	Product Features	5
3.1	Virtualization for Demand-based Allocation	5
3.1.1	Virtual Switch Unit 3.0 (VSU)	5
3.1.2	Virtual Switch Device (VSD).....	5
3.2	Carrier-class Reliability	6
3.3	Multi-processing Modular Operating System	6
3.4	Excellent Energy Efficiency	7
4	Technical Specifications	8
5	Typical Applications	11
6	Ordering Information	12
7	More Information	15

1 Product Picture



RG-S7808C

2 Product Overview

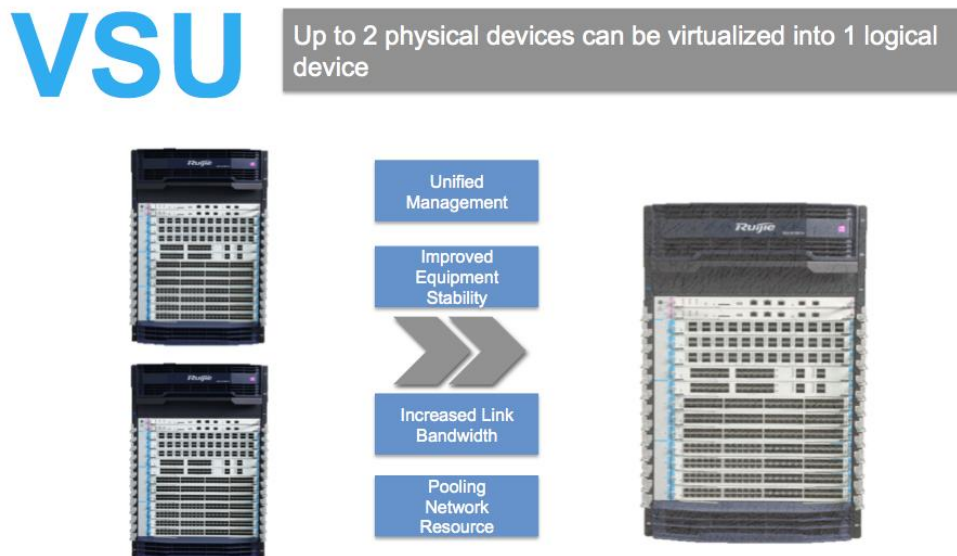
Ruijie RG-S7808C Core Switch is specially designed for next-gen integrated network. Implementing advanced RGOS11.X operating system and VSU/VSD virtualization technologies, the switch future supports future Ethernet requirements. The leading technologies break customer physical network barriers to form an integrated network. The VSU (Virtual Switch Unit) feature greatly simplifies customer network architecture to enhance the operational efficiency. The VSD (Virtual Switch Device), another virtualization technology, significantly lowers the total cost of investment by improving device utilization. The RG-S7808C switch is ideal for MAN, campus network and settings alike.

3 Product Features

3.1 Virtualization for Demand-based Allocation

3.1.1 Virtual Switch Unit 3.0 (VSU)

The RG-S7808C switch supports the Virtual Switch Unit 3.0 (VSU). The technology can virtualize 2 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 RG-S7808C switch supports cross-device link aggregation for easy double uplink to server/switch, effectively maximizing bandwidth investment return.



3.1.2 Virtual Switch Device (VSD)

The RG-S7808C switch supports VSD in which one device can be virtualized into multiple virtual units. Each virtual unit has a unique configuration management interface and independent hardware allocation (e.g. storage, TCAM and hardware forwarding table). All the features support restart with no impact on other virtual machines. Users can realize network resource allocation based on different needs. Resources of the core switch can hence be shared with other domains

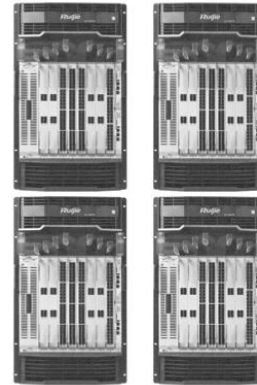
and users. With the enablement of both VSU3.0 and VSD, the switch satisfactorily delivers complete resource pooling.

VSD

1 physical device can be distributed into up to 4 logical devices



- Physical Isolation
- Independent Management
- ➔
- Improved Equipment Utilization
- Demand-based Resource Allocation



3.2 Carrier-class Reliability

Redundant design of the RG-S7808C switch key components delivers excellent protection: control engine power and fan modules all support 1+1 redundancy. All redundant components are hot-swappable to maximize reliability and availability. Hot patch and ISSU technologies are 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.

3.3 Multi-processing Modular Operating System

Since 1998, Ruijie has been investing on the R&D of modular operating system. The RG-S7808C software platform is designed based on the next-generation RGOS 11.X multi-processing modular operating system to integrate the service features such as loosely coupled firewall, wireless and authentication into a unified cloud network operating system. The RG-S7808C software platform also supports full virtualization and offers rich data center and campus network features. The key availability indicators such as multi-processing modules, process backup and hot patch have reached the industry-leading level.



- **Modularization**
Independent software module
Multi-processing as platform
Infrastructure

- **Multi-core CPU**
Assure high performance and support
multi-processing
- **Multi-processing**
Enable independent CPU and memory
processing
Steady system for resources supply or
sharing
Ensure non-stop operation



3.4 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 with all Ethernet copper ports implements 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-S7808C switch thereby helps clients to maximize savings on air conditioning.

4 Technical Specifications

Model	RG-S7808C
Module Slots	8 (2 for control engines)
Modular Power Slots	6 (4 for system power; 2 for PoE power)
Backplane Bandwidth (per slot)	Upto 106G
Switching Capacity	15.36Tbps/40.72Tbps
Packet Forwarding Rate	2,880Mpps/14,400Mpps
Max. Number of 10GE Ports	Up to 48
PoE	Support
ARP Table	Up to 20K
MAC Address	Up to 64K
Routing Entries	Up to 10K
Multicast Entries (IPv4/IPv6)	Up to 8K/4K
ACL Entries	Up to 3,500
VLAN	Up to 4K
QinQ	Basic QinQ, Flexible QinQ
Link Aggregation	AP, LACP
Port Mirroring	Many-to-one mirroring, One-to-many mirroring, Flow-based mirroring, SPAN, RSPAN, VLAN mirroring
Spanning Tree Protocols	Support STP, RSTP and MSTP
DHCP	Support DHCP relay, DHCP snooping, DHCP server, DHCP client
Multiple Spanning Tree (MST) Instances	64 (not include default 0)
Maximum Aggregation Port (AP)	Up to 2,048
Virtual Routing and Forwarding (VRF) Instances	Up to 1,000
SDN	OpenFlow 1.3*
VSU (Virtual Switch Unit)	Up to 2 stack members
VSD (Virtual Switch Device)	Up to 4 VSD units

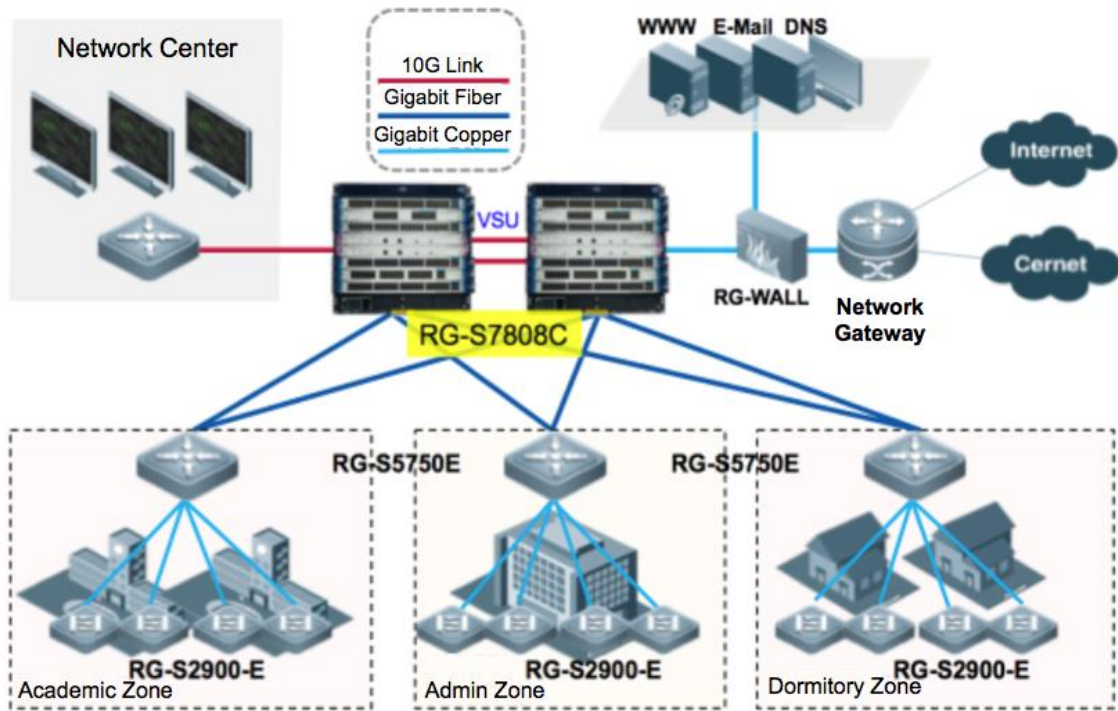
* Future release support

L2 Features	Jumbo Frame, 802.1Q, STP, RSTP, MSTP, Super VLAN, GVRP, QinQ, Flexible QinQ, LLDP, ERPS (G.8032)
Layer 2 Protocols	IEEE802.1D (STP), IEEE802.1w (RSTP), IEEE802.1s (MSTP), IGMP Snooping, Jumbo Frame (9Kbytes), IEEE802.1ad (QinQ and flexible QinQ), GVRP
Layer 3 Features	ARP, IPv4/v6, PBR v4/v6
Layer 3 Protocols (IPv4)	Ping, Traceroute, Equal-Cost Multi-Path Routing (ECMP)
IPv4 Features	Static routing, RIP, OSPF, BGP4, ISIS, VRRP, Equal-cost routing, Policy-based routing, GRE tunnel
IPv6 Features	Static routing OSPFv3, BGP4+, IS-ISv6, MLD, VRRPv3, Equal-cost routing Policy-based routing, Manual tunnel, Auto tunnel, ISATAP tunnel, GRE tunnel
Basic IPv6 Protocols	DNS client v6, DHCP relay v6, DHCP v6 server, Telnet v6, TFTP client v6, FTP v6, NTP client v6, NTP server v6
IPv6 Routing Protocols	RIP, RIPng, OSPFv2/v3, BGP4, BGP4+, IS-ISv4/v6, Routing Policy
IPv6 Tunnel Features	6over4 Manual Tunnel, 6to4 Auto Tunnel, Manual Tunnel, Auto Tunnel, ISATAP Tunnel, IPv4 over IPv6 Tunnel, IPv6 over IPv4 Tunnel, GRE Tunnel(4 over 6), GRE Tunnel(6 over 4)
Multicast	IGMP v1/v2/v3, IGMP snooping, IGMP proxy, Multicast routing protocols (PIM-DM, PIM-SM, PIM-SSM), MLD, Multicast static routing
G.8032	Support
ACE Capacity	Up to 3,500
ACL	Standard/Extended/Expert ACL; ACL 80; IPv6 ACL
QoS	802.1p, Queue scheduling mechanisms (SP, WRR, DRR, WFQ, SP+WFQ, SP+WRR, SP+DRR), RED/WRED, Input/output port-based speed limit
IPv6 ACL	Support
Reliability	Control engine, power supply and fan: 1+1 redundancy; Hot-swappable components; Hot patch and online patch upgrade; ISSU*; GR for OSPF/IS-IS/BGP; BFD for VRRP/OSPF/BGP4/ISIS/ISISv6/static routing
EEE Format	Support EEE (802.3az)
Security	NFPP (Network Foundation Protection Policy), CPP (CPU Protection), DAI, Port Security, IP Source Guard, 802.1x, Portal authentication, RADIUS and TACACS+ user login authentication, uRPF, Account privileges and password security policy, Unknown multicasts are not delivered to CPU and support unknown unicasts suppression, Support SSHv2 to provide a secure and encrypted channel for user login
Manageability	Console/AUX Modem/Telnet/SSH2.0 command line configuration; FTP, TFTP, Xmodem file upload/download management; SNMP V1/V2c/V3; RMON; NTP clock; Fault alarm and self-recovery; System log; sFlow
Hot Patch	Support

* Future release support

CWMP	Support
Smart Temperature Control	Fan speed auto-adjustment; Fan malfunction alerts; Fan status check
Smart Power Supply	Support power control and management
Other Protocols	DHCP client, DHCP relay, DHCP server, ARP proxy, Syslog
Dimensions (W x D x H) (mm)	442 x 465 x 441.7
Rack Height	10RU
Weight	32.35kg (total weight of empty chassis and fans)
MTBF	>200K hours
Power Supply	RG-PA600I-F: 90-180V~ 600W; 180-264V~ 600W RG-PA1600I-F: 90-180V~ 1200W; 180-264V~ 1600W RG-PA3000I-PL: 90-176V~ 1200W; 176-210V~ 2500W; 210-264V~ 3000W RG-PA1600I-PL: 90-176V~ 1200W; 176-264V~ 1600W
Power Consumption	<176W
PoE Power Consumption	<810W
Temperature	Operating temperature: 0°C to 50°C
	Storage temperature: -40°C to 70°C
Humidity	Operating humidity: 10% to 90% RH (non-condensing)
	Storage humidity: 5% to 95% RH
Operating Altitude	-500m to 5,000m

5 Typical Applications



6 Ordering Information

1. Main Chassis & Engine Management

Select the main chassis and control engine according to specific product model.

Model	Description
RG-S7808C Main Chassis & Control Engine	
S7808C	8-slot Chassis with 2 fans (without power supply)
M7800C-CM	S7800C Control Engine

2. Power Supply and Fan

Select at least 1 power module according to the power supply requirement of the device.

Model	Description
RG-PA600I-F	S7800C Power Module (support redundancy, AC, 600W, 12V)
RG-PA1600I-F	S7800C Power Module (support redundancy, AC, 1600W, 12V)
RG-PA1600I-PL	S7800C PoE Power Module (support redundancy, AC, 1600W, 16A)
RG-PA3000I-PL	S7800C PoE Power Module (support redundancy, AC, 3000W, 16A)
M78-PSE	S7800C PoE Box, for RG-PA1600I-PL and RG-PA3000I-PL
M08-FAN	S7800C Fan, each consists of 2 fan units and 1 fan control board, support side-to-rear airflow (included by default)

3. Line Card & Service Module

Select the host line cards according to your real application.

Model	Description
Commercial Line Card	
M7800C-16SFP8XS-EA	Line Card with 16 Gigabit Ethernet fiber ports (SFP, LC), 8 10G Ethernet fiber ports (SFP+, LC)
M7800C-24SFP/12GT4XS-EA	Line Card with 24 Gigabit Ethernet fiber ports (SFP, LC), 12 Gigabit

Model	Description
	Ethernet copper combo ports (RJ45), 4 10G Ethernet fiber ports (SFP+, LC)
M7800C-36GT12SFP4XS-EA	Line Card with 36 Gigabit Ethernet copper ports (RJ45), 12 Gigabit Ethernet fiber ports (SFP, LC), 4 10G Ethernet fiber ports (SFP+, LC)
M7800C-48SFP4XS-EA	Line Card with 48 Gigabit Ethernet fiber ports (SFP, LC), 4 10G Ethernet fiber ports (SFP+, LC)
M7800C-48GT4XS-EA	Line Card with 48 Gigabit Ethernet copper ports (RJ45), 4 10G Ethernet fiber ports (SFP+, LC)
M7800C-48GT4XS-P-EA	Line Card with 48 Gigabit Ethernet copper ports (RJ45), 4 10G Ethernet fiber ports (SFP+, LC), support PoE/PoE+
*M7800C-16XS-EA	Line Card with 16 10G Ethernet fiber ports (SFP+, LC)
*M7800C-32XS-EA	Line Card with 32 10G Ethernet fiber ports (SFP+, LC)
*M7800C-48XS-EA	Line Card with 48 10G Ethernet fiber ports (SFP+, LC)
*M7800C-4QXS-EA	Line Card with 4 40G Ethernet fiber ports
*M7800C-8QXS-EA	Line Card with 8 40G Ethernet fiber ports
*M7800C-02CQ-EA	Line Card with 2 100G Ethernet fiber ports (QSFP28)
Multi-service Module	
*RG-WALL 1600-B-EA	Firewall Module
*RG-M7808C-WS-EA	Wireless Controller Module
*RG-M7808C-IPS-EA	IPS Module
*RG-M7808C-AC-EA	Application Control Gateway Module
*RG-M7808C-LB-EA	Load Balancing Module
*RG-M7808C-IPFIX-EA	Traffic Analysis Module
*RG-M7808C-VPN-EA	SSL VPN Module

4. Transceiver and Cable

Model	Description
Mini-GBIC-SX	1000BASE-SX mini GBIC Transceiver (850nm)
Mini-GBIC-LX	1000BASE-LX mini GBIC Transceiver (1310nm)

* Future release support

Model	Description
Mini-GBIC-GT	1000BASE-GT mini GBIC Transceiver
Mini-GBIC-LH40	1000BASE-LH mini GBIC Transceiver (1310nm), 40km
Mini-GBIC-ZX50	1000BASE-ZX mini GBIC Transceiver (1550nm), 50km
Mini-GBIC-ZX80	1000BASE-ZX mini GBIC Transceiver (1550nm), 80km
Mini-GBIC-ZX100	1000BASE-ZX mini GBIC Transceiver (1550nm), 100km
XG-SFP-CU1M	10GBASE-CU SFP+ Cable, 1m (1 cable + 2 interface modules)
XG-SFP-CU3M	10GBASE-CU SFP+ Cable, 3m (1 cable + 2 interface modules)
XG-SFP-SR-MM850	10GBASE-SR, SFP+ Transceiver (300m)
XG-SFP-LR-SM1310	10GBASE-LR, SFP+ Transceiver (10km)
XG-SFP-ER-SM1550	10GBASE-ER, SFP+ Transceiver (40km)
XG-SFP-ZR-SM1550	10GBASE-LC, SFP+ Transceiver (80km)

7 More Information

For more information about the Ruijie RG-S7808C Core Switch, please visit <http://www.ruijienetworks.com> or contact your local Ruijie sales representative.



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