Ruijie RG-S7800C Series

Core Switch Series Datasheet

Ruijie RG-S7800C Core Switch Series 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-S7800C Switch Series is ideal for MAN, campus network and settings alike.

HIGHLIGHTS

- Cost-effective Entry-level Chassis Switch
- Superior Performance with up to 88.62Tbps Switching Capacity
- Support Network Virtualization (VSU & VSD) and Advanced Layer 3 Routing (OSPF, BGP)
- Carrier-class Reliability: Control Engine/ Power/ Fan Redundancy, Hot-swappable Components
- Support Large-scale MAC (up to 64K) and ARP Table (up to 20K)
- Support PoE/ PoE+ with Independent PoE Power Supply Module

RG-S7805C

RG-S7808C

PRODUCT FEATURES

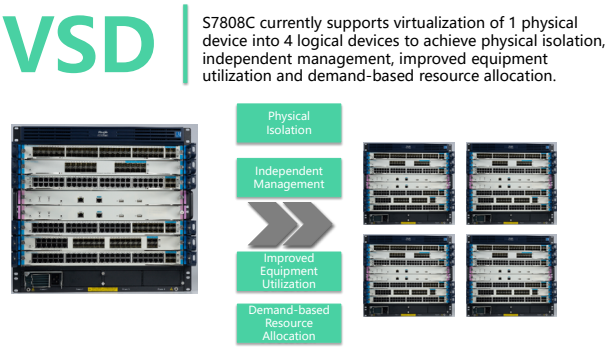
Virtualization for Demand-based Allocation

Virtual Switch Unit 3.0 (VSU)

The RG-S7800C Switch Series 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-S7805C switch supports cross-device link aggregation for easy double uplink to server/switch, effectively maximizing bandwidth investment return.

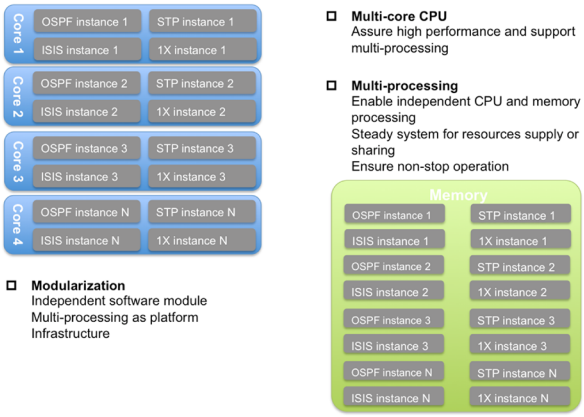
Virtual Switch Device (VSD)

The RG-S7800C Switch Series 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.



Multi-processing Modular Operating System

Since 1998, Ruijie has been investing on the R&D of modular operating system. The RG-S7800C Switch Series 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-S7800C 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.



Carrier-class Reliability

Redundant design of the RG-S7800C Switch Series 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 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.

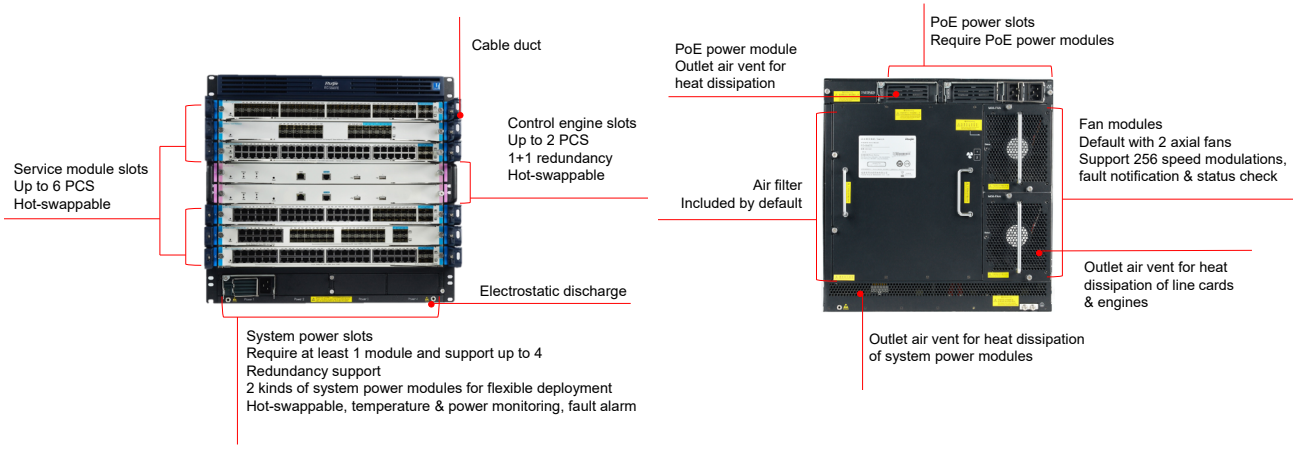
Excellent Energy Efficiency

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-S7800C Switch Series thereby helps clients to maximize savings on air conditioning.

PLATFORM COMPONENTS

RG-S7808C Switch Series Platform Components



RG-S7800C Switch Series Line Cards

M7800C-16SFP8XS-EA

M7800C-24SFP12GT4XS-EA

M7800C-36GT12SFP4XS-EA

M7800C-48GT4XS-EA

M7800C-48GT4XS-P-EA

M7800C-48SFP4XS-EA

M7800C-24GT24SFP4XS-EA

7 types of line cards
Support up to 52 non-combo physical ports per line card.
All support fixed 10G SFP+ ports ≥4
A single card can hence fulfill core device requirements for medium/small networks or aggregation demands for medium networks.

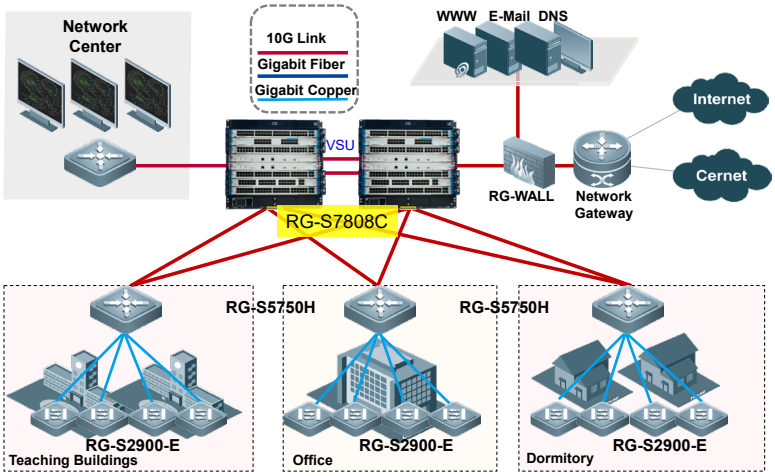
TECHNICAL SPECIFICATIONS

Model	RG-S7805C	RG-S7808C
Module Slots	5 (2 for control engines)	8 (2 for control engines)
Modular Power Slots	2 (for system power)	6 (4 for system power; 2 for PoE power)
Switching Capacity	19.2Tbps/52.13Tbps	22.25Tbps/88.62Tbps
Packet Forwarding Rate	215Mpps	624Mpps
Max. Number of 10GE Ports	Up to 24	Up to 48
PoE	N/A	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	

Model	RG-S7805C	RG-S7808C
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	
VSU (Virtual Switch Unit)	Up to 2 stack members	
VSD (Virtual Switch Device)	Up to 4 VSD units	
L2 Features	Jumbo Frame, 802.1Q, STP, RSTP, MSTP, Super VLAN, GVRP, QinQ, Flexible QinQ, LLDP, ERPS (G.8032), MAC Based VLAN, Voice VLAN, RLDP	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	
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; 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	

Model	RG-S7805C	RG-S7808C
Hot Patch	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)	442mm x 451mm x 175mm, 4U	442mm × 595mm × 439mm, 10U
Rack Height	4RU	10RU
Weight	12.42kg (total weight of empty chassis and fans)	32.35kg (total weight of empty chassis and fans)
MTBF	312K hours	
Safety Standards	IEC 60950-1, EN 60950-1	
Emission Standards	EN 300 386, EN 55022/55032, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11	
Power Supply	RG-PA300I-F: 90-290Vac and 1 92-290Vdc ~300W	RG-PA1600I-F: 90-180V~1200W; 180-264V~ 1600W RG-PA600I-F: 90-180V~ 600W; 180-264V~ 600W RG-PA1600I-PL: 90-175V~1000W; 176-264V~1600W RG-PA3000I-PL: 90-175V~1200W; 176-209V~2500W; 210-264V~ :3000W
Power Consumption	<80W	<176W
PoE Power Consumption	N/A	<800W
Temperature	Operating temperature: 0ºC to 50ºC	
	Storage temperature: -40ºC to 70ºC	
Humidity	Operating humidity: 10% to 90% RH (non-condensing)	
	Storage humidity: 5% to 95% RH	
Operating Altitude	3,000m to 5,000m	3,000m to 4,000m

TYPICAL APPLICATIONS



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
RG-S7805C Main Chassis & Control Engine	
RG-S7805C	5-slot Chassis (without power supply)
M7805C-CM	S7805C 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-PA300I-F	S7805C Power Module (AC, 300W)
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 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-24GT24SFP4XS-EA	Line Card with 24 Gigabit Ethernet copper ports (RJ45), 24 Gigabit Ethernet fiber ports (SFP, LC), 4 10G Ethernet fiber ports (SFP+, LC)

4. Transceiver and Cable

Model	Description
Mini-GBIC-SX-MM850	1000BASE-SX mini GBIC Transceiver (850nm)
Mini-GBIC-LX-SM1310	1000BASE-LX mini GBIC Transceiver (1310nm)
Mini-GBIC-GT	1000BASE-GT mini GBIC Transceiver
Mini-GBIC-LH40-SM1310	1000BASE-LH mini GBIC Transceiver (1310nm, 40km)
Mini-GBIC-ZX50-SM1550	1000BASE-ZX mini GBIC Transceiver (1550nm, 50km)

Model	Description
Mini-GBIC-ZX80-SM1550	1000BASE-ZX mini GBIC Transceiver (1550nm, 80km)
Mini-GBIC-ZX100-SM1550	1000BASE-ZX mini GBIC Transceiver (1550nm, 100km)
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
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)

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INNOVATION

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