Ruijie | Cybrey



RG-CS65 Series

Datasheet

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Overview

The RG-CS65 series are next-generation 10GE Ethernet switches newly launched by Ruijie Cybrey. They deliver high performance and strong security. With the advanced hardware architecture and the latest ROGS modular operating system, the RG-CS65 series are capable of providing faster hardware processing and a better operation experience.

The RG-CS65 series supports multi-rate access (1 Gbps, 2.5 Gbps, or 10 Gbps) via 10GE SFP+ ports. They can connect to uplink devices through high-performance 40GE SFP ports and fully meet user requirements for high-density access and high-performance convergence.

The RG-CS65 series provide robust performance, reliable end-to-end service quality, and rich security settings for the convergence layer of large-scale networks and the core layer of small and medium-sized networks. They meet enterprise network requirements for high speed, security, and intelligence.

Features

High Performance and Scalability: The switch series provides optical ports at multiple speeds, including 1GE, 10GE, 25GE, and 40GE, depending on the device model. The 25GE ports can be used for high-bandwidth access or uplink connections. The switch series supports a large number of forwarding entries, making it suitable as an aggregation switch on a large-scale campus network or a core switch on a small and medium-sized network.

Virtual Switch Unit (VSU): The switch series support the VSU technology to virtualize up to eight physical devices into one logical device, enabling flexible and simplified network deployment and management.

Layer 3 Protocols: The switch series support multiple Layer 3 routing protocols, including BGP, OSPF, RIP, and IS-IS, as well as multicast capabilities, providing flexible network interconnection and service delivery capabilities.

Hardware-level Startup Redundancy: The switch series uses two flash memory chips to store the startup software (bootloader), achieving hardware-level startup redundancy and preventing a startup failure due to the fault of a single flash memory chip.

High Reliability and Energy Saving: The power and fan modules support hot swapping and N+1 redundancy, ensuring service continuity and fast replacement of spare modules. In addition, the switch series adopts intelligent variable-speed fan modules to reduce operating noise and power consumption.

Sound Security Protection Policies: The switch series implements multi-layer security mechanisms, including CPU Protection Policy (CPP), Network Foundation Protection Policy (NFPP), Access Control Lists (ACLs), and user binding, effectively defending against attacks and controlling access.

Flexible Device Management Modes: Administrators can manage and maintain the switch series using Ruijie Reyee App, CLI, web-based management, SNMP, and other methods.

Hardware Specification

Port Specifications

Port Specifications	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
Fixed service port	24 x 1GE SFP ports (ports 17 to 24 are 10/100/1000BASE-T combo ports) 4 x 1GE/2.5GE/10GE SFP+ ports	12 x 1GE/2.5GE/10GE SFP+ ports 4 x 10GE/25GE SFP28 ports 2 x 40GE QSFP+ ports Note: For the 4 x 10GE/25GE SFP28 ports, the 10G and 25G rate modes cannot be mixed across all ports.	24 x 1GE/2.5GE/10GE SFP+ ports 8 x 10GE/25GE SFP28 ports 2 x 40GE QSFP+ ports Note: For the 8 x 10GE/25GE SFP28 ports, the ports are divided into groups of four in sequential order, and within each group, the 10G and 25G rate modes cannot be mixed.
Console port	1	1	1
MGMT port	1	1	1
USB port	1	1	1

System Specifications

System Specifications	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
Switching capacity	128Gbps (Gbit/s)	600Gbps (Gbit/s)	1040Gbps (Gbit/s)

Packet forwarding rate	95.232 Mpps	446.4 Mpps	773.76 Mpps
CPU	Quad Core ARMv8 Cortex-A72 CPU frequency up to 2000 MHz	Quad Core ARMv8 Cortex-A72 CPU frequency up to 2000 MHz	Quad Core ARMv8 Cortex-A72 CPU frequency up to 2000 MHz
Bootrom	16 MB	16 MB	16 MB
Flash Memory	1GB	1 GB	1 GB
SDRAM	4 GB+8 bit ECC	4 GB+8 bit ECC	4 GB+8 bit ECC
Switch buffer	32 Mbit	32 Mbit	64 Mbit

Dimensions and Weight

Dimensions and Weight	**RG-CS65-24SFP/8GT4XS-D**	**RG-CS65-12XS4VS2QXS-D**	**RG-CS65-24XS8VS2QXS-D**
Product dimensions (W x D x H)	442 x 420 x 43.6mm	442 x 420 x 43.6mm	442mm x 420mm x 43.6mm
Rack height	1 RU	1 RU	1 RU

Power Supply and Consumption

Power Supply and Consumption	**RG-CS65-24SFP/8GT4XS-D**	**RG-CS65-12XS4VS2QXS-D**	**RG-CS65-24XS8VS2QXS-D**
Power supply	2 x pluggable power modules (no pre-installed modules)	2 x pluggable power modules (no pre-installed modules)	2 x pluggable power modules (no pre-installed modules)
Power input	RG-PA150IB-FC (AC input): • Rated input voltage: 100 V AC to 240 V AC, 50 Hz to 60 Hz • Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz	RG-PA150IB-FC (AC input): • Rated input voltage: 100 V AC to 240 V AC, 50 Hz to 60 Hz • Maximum input voltage: 90 V AC to 264 V AC, 47 Hz to 63 Hz	RG-PA550I-FC (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: 3 A	• Maximum input current: 3 A	• Rated input current: 3.5 A to 7.2 A • Maximum input current: 7.2 A
Maximum power consumption	TBD	TBD	TBD

Environment and Reliability

Environment and Reliability	**RG-CS65-24SFP/8GT4XS-D**	**RG-CS65-12XS4VS2QXS-D**	**RG-CS65-24XS8VS2QXS-D**
Hot swapping of power modules	Supported	Supported	Supported
Hot swapping of cables	Supported	Supported	Supported
Heat dissipation	Air cooling, front-to-rear airflow + left-to-rear airflow	Air cooling, front-to-rear airflow + left-to-rear airflow	Air cooling, front-to-rear airflow + left-to-rear airflow
Power redundancy	Supported	Supported	Supported
Fan	3 x hot-swappable fan modules (3 pre-installed)	4 x hot-swappable fan modules (4 pre-installed)	4 x hot-swappable fan modules (4 pre-installed)
Surge protection	Service port: ±10 kV for common mode MGMT port: ±10 kV for common mode Power connector: ±6 kV for common mode and ±6 kV for differential mode	MGMT port: ±10 kV for common mode Power connector: ±6 kV for common mode and ±6 kV for differential mode	MGMT port: ±10 kV for common mode Power connector: ±6 kV for common mode and ±6 kV for differential mode
ESD	Contact discharge: 6 kV Air discharge: 8 kV	Contact discharge: 6 kV Air discharge: 8 kV	Contact discharge: 6 kV Air discharge: 8 kV
Temperature monitoring and protection	Temperature monitoring, temperature alarm, and over temperature protection	Temperature monitoring, temperature alarm, and over temperature protection	Temperature monitoring, temperature alarm, and over temperature protection

Fan monitoring	Fan failure alarming	Fan failure alarming	Fan failure alarming
Power supply monitoring	Monitoring of power supply model and status Power supply failure alarming	Monitoring of power supply model and status Power supply failure alarming	Monitoring of power supply model and status Power supply failure alarming
Energy saving	Supported	N/A	N/A
Acoustic noise	27°C (80.6°F) < 60 dB	27°C (80.6°F) < 60 dB	27°C (80.6°F) < 60 dB
Operating temperature	0°C to 50°C (32°F to 122°F)	0°C to 50°C (32°F to 122°F)	0°C to 50°C (32°F to 122°F)
Storage temperature	-40°C to +70°C (40°F to +158°F)	-40°C to +70°C (40°F to +158°F)	-40°C to +70°C (40°F to +158°F)
Operating humidity	10% RH to 90% RH (non-condensing)	10% RH to 90% RH (non-condensing)	10% RH to 90% RH (non-condensing)
Storage humidity	5% RH to 95% RH (non-condensing)	5% RH to 95% RH (non-condensing)	5% RH to 95% RH (non-condensing)
Operating altitude	0 m to 5,000 m (0 ft. to 16,404.20 ft.)	0 m to 5,000 m (0 ft. to 16,404.20 ft.)	0 m to 5,000 m (0 ft. to 16,404.20 ft.)
MTBF	TBD	TBD	TBD

Software Specification

ACL and QoS

ACL and QoS	**RG-CS65-24SFP/8GT4XS-D**	**RG-CS65-12XS4VS2QXS-D**	**RG-CS65-24XS8VS2QXS-D**
ACL	• ACL80 • ACL-based redirection • IPv6 ACL • Standard ACL • Extended IP ACL • Extended MAC ACL • Extended time range-based ACL • Extended expert ACL		

QoS	• RED/WRED • Congestion Avoidance (Tail Drop) • DRR • SP • SP+DRR • SP+WFQ • SP+WRR • WFQ • WRR • Inbound or outbound rate limiting based on interface traffic

Interface Features

Interface Features	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
Aggregate Port	LACP		
Mirror	• ERSPAN • RSPAN		

Layer 2 Features

Layer 2 Features	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
VLAN	• Voice VLAN • GVRP • IP-Subnet based VLAN • MAC VLAN • Port based VLAN • Private VLAN • Protocol based VLAN • Super VLAN		
Basic QinQ	Supported		
LLDP	• LLDP		

	• LLDP-MED
Spanning Tree	• IEEE802.1d STP • IEEE802.1w RSTP • standard 802.1s MSTP

Layer 3 Features

Layer 3 Features	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
ARP	anyIP		
ND	Neighbor Discovery		
VRF	IPv4 and IPv6 VRF		

IP Application Protocol Features

IP Application Protocol Features	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
DHCPv4 Client	Supported		
DHCPv4 Relay	Supported		
DHCPv4 Server	Supported		
DHCPv4 Snooping	Supported		
DHCPv6 Client	Supported		
DHCPv6 Relay	Supported		
DHCPv6 Snooping	Supported		
DNS Client	Supported		
DNSv6 Client	Supported		
FTP	• FTP Client • FTP Server		

ND Snooping	Supported
NTP	• NTP Client • NTP Server
SNTP	SNTP Client
TFTP	• TFTP Client • TFTP Server

Multicast Features

Multicast Features	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
IGMP	• IGMP Proxy • IGMP V1,V2,V3		
IGMP Snooping	• IGMP v1,v2 Snooping • IGMP V3 Snooping		
MLD	MLD v1, v2		
MLD Snooping	• MLD Snooping • MLD Snooping V2		
MSDP	Supported		
PIM-DMv4	Supported		
PIM-SMv4	• PIM-SMv4 • PIM-SSMv4		
PIM-SMv6	• PIM-SMv6 • PIM-SSMv6		

High Availability

High Availability	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
DLDP	Supported		
VRRP	• IPv4 VRRP v2		

	• IPv4 VRRP v3 • IPv6 VRRP
VRRP+	• IPv4 VRRP+ • IPv6 VRRP+

Management Features

Management Features	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
gRPC	Supported		
NETCONF	Supported		
sFlow	Supported		
SNMP	RMON (1, 2, 3, 9)		
SSH	• SSHv1 • SSHv2		

Routing Protocol Specification

Routing Protocol Specification	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
BGP4	Supported		
BGP4+	Supported		
IS-ISv4	Supported		
IS-ISv6	Supported		
OSPFv2	Supported		
OSPFv3	Supported		
RIP	• RIP • RIPv2		
RIPNG	Supported		

Security Features

Security Features	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
802.1X	• MAC-based 802.1x authentication • Port-based 802.1x authentication		
AAA	Supported		
CPP	Supported		
IP SOURCE GUARD	• IP SOURCE GUARD • IPv6 SOURCE GUARD		
IPv4 URPF	Strict and loose RPF & uRPF ignoring default routes		
SAVI	Supported		
TACACS+	Supported		
Web-based authentication	• HTTP Web-based authentication • HTTPS Web-based authentication		
Global IPv4 MAC binding	Supported		

System Features

System Features	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
USB	USB 2.0		

Capacity Specification

ACL and QoS

ACL and QoS	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
Number of ACEs	Egress: 1000 Ingress: 2500		Egress: 1000 Ingress: 5000

High Availability

High Availability	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
VSU	Number of VSU members: 8		

Layer 2 Features

Layer 2 Features	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
Ethernet	Jumbo frame length: 9600		
G.8032	Layer 2 traffic convergence time: Copper port: 800 ms Optical port: 200 ms		Layer 2 traffic convergence time: <=200ms
MAC	Number of Global MAC Addresses : 32000 (for default)		Number of Global MAC Addresses : 80000 (for default)

Layer 3 Features

Layer 3 Features	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
ARP	Maximum number of ARP entries: 14000		Maximum number of ARP entries: 32000 (for default)

Multicast Features

Multicast Features	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
Mcast	Number of IPv4 multicast routes: 4000		Number of IPv4 multicast routes: 8000
Mcastv6	Number of IPv6 multicast routes: 2000		Number of IPv6 multicast routes: 4000

Routing Protocol Specification

Routing Protocol Specification	RG-CS65-24SFP/8GT4XS-D	RG-CS65-12XS4VS2QXS-D	RG-CS65-24XS8VS2QXS-D
IPv4 routing	IPv4 routing table size: 16000		IPv4 routing table size: 12000 (for default)
IPv6 routing	IPv6 routing table size: 8000 (shared resources with IPv4 routes)		IPv6 routing table size: 6000 (shared resources with IPv4 routes)

Order Information

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

Switches and Power Module

Model	Description
RG-CS65-24SFP/8GT4XS-D	24 x 1GE SFP ports (ports 1 to 16 are 1GE SFP ports, ports 1 to 8 are 1GE SFP/RJ45 combo ports), 4 x 1GE/2.5GE/10GE SFP+ ports, hot-swappable fan modules, 2 x pluggable power modules, requiring at least one RG-PA150IB-FC power module.
RG-CS65-12XS4VS2QXS-D	12 x 1GE/2.5GE/10GE SFP+ ports, 4 x 10GE/25GE SFP28 ports, 2 x 40GE QSFP+ ports, hot-swappable fan modules, 2 x pluggable power modules, requiring at least one RG-PA150IB-FC power module.
RG-CS65-24XS8VS2QXS-D	24 x 1GE/2.5GE/10GE SFP+ ports, 8 x 10GE/25GE SFP28 ports, 2 x 40GE QSFP+ ports, hot-swappable fan modules, 2 x pluggable power modules, requiring at least one RG-PA550I-FC power module.
RG-PA150IB-FC	150 W AC power module
RG-PA550I-FC	550 W AC power module

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 Mini-GBIC-GT. The port needs to be configured with auto-negotiation
CO-GE-SFP-SX-MM850	1000BASE-SX, SFP transceiver, 850 nm, Duplex LC, 500 m over MMF
CO-GE-SFP-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
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

2.5GE

Model	Description
2.5G-SFP-LX03-SM1310-BIDI-I	2.5GBASE-LX, SFP transceiver, TX1310/RX1550, BiDi LC, 3 km over SMF
2.5G-SFP-LX03-SM1550-BIDI-I	2.5GBASE-LX, SFP transceiver, TX1550/RX1310, BiDi LC, 3 km over SMF

10GE

Model	Description
CO-XG-SFP-SR-MM850	10GBASE-SR, SFP+ transceiver, 850nm, Duplex LC, 300m over MMF

CO-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-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-SR-MM850	40GBASE-SR, QSFP+ transceiver, 850 nm, MPO 1 x 12, 150 m over OM4 MMF, 100 m over OM3 MMF
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	40G LX4 module, QSFP+ form factor, Duplex LC connector, 150 m (492.13 ft.) over OM3/OM4 MMF, or 2 km (6,561.68 ft.) over SMF
40G-AOC-5M	40GBASE, QSFP+ active optical cable (AOC), 5 m, including one cable and two optical transceivers

40G-AOC-10M	40GBASE, QSFP+ active optical cable (AOC), 10 m, including one cable and two optical transceivers
40G-AOC-30M	40G QSFP+ AOC, 30 m (98.43 ft.)


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