

RG-CS83 Series

Switches







The RG-CS83 series switches are next-generation 1000M Ethernet switches launched by Ruijie Networks, featuring security, high efficiency, energy saving, and innovation. They provide full 1000M access and 10GE uplink data exchange with flexible scaling. With

the new hardware architecture and Ruijie RGOS12. X modular operating system, the switch provides more resource entries, faster hardware processing performance, and better operation experience.

Product Appearance



Front View of the RG-CS83-12GT4XS-P



Front View of the RG-CS83-24GT4XS



Front View of the RG-CS83-24GT4XS-P



Front View of the RG-CS83-48GT4XS



Front View of the RG-CS83-48GT4XS-P



Rear View of the RG-CS83-12GT4XS-P



Rear View of the RG-CS83-24GT4XS



Rear View of the RG-CS83-24GT4XS-P



Rear View of the RG-CS83-48GT4XS



Rear View of the RG-CS83-48GT4XS-P

Product Highlights

- Multiple port types 1000BASE-T ports and uplink 10GE ports, PoE/PoE+ power supply, faster speed, and experience enhancement
- VSU, delivering flexible networking
- Diverse Layer 3 protocols: OSPF, RIP, and multicast
- Depth of 220 mm (8.66 in.) and compact design, which can be easily installed in a small cabinet
- Resistance to harsh environments and excellent anti-corrosion performance
- 10 kV surge protection on an interface, 8 kV surge protection for PoE power, 6 kV surge protection for non-PoE power, higher performance, and greater anti-interference capability
- Intelligent variable-speed fans, advanced heat



dissipation architecture, operating noise less than 35 dB, and fanless design

- Free Ruijie Cloud management, supporting selforganizing networking (SON), remote O&M, mobile VLAN configuration, and simplified ACL configuration
- Multiple network management modes, achieving simple and easy network maintenance
- RGOS modular operating system, providing more entries, faster hardware processing, and better operation experience
- Open and programmable RGOS modular operating system: Basic functions are

- incorporated into the main version, and custom functions are released in app mode, ensuring stability of basic functions.
- Rectification of faults related to processes online in seconds, without interrupting network operations
- Python that allows applications across the platform
- Online upgrade and extension of functions to ensure nonstop services
- Uses two flash chips to store BOOT software (system boot program), achieving hardwarelevel BOOT redundancy and avoiding switch startup failures caused by flash chip failures

Product Features

High Reliability

The RG-CS83 supports STP (IEEE 802.1D), RSTP (IEEE 802.1w), and MSTP (IEEE 802.1s) to achieve fast convergence, improve fault tolerance capability, and ensure stable network operation and link load balancing. It effectively utilizes network channels to improve utilization of redundant links.

The Virtual Router Redundancy Protocol (VRRP) ensures network stability for the switch.

With the Rapid Link Detection Protocol (RLDP), the RG-CS83 can quickly detect link connectivity and unidirectional optical fiber links. Through loop detection on a port, the RG-CS83 can prevent network failures caused by the loops due to unauthorized connection between the port and hubs.

The RG-CS83 supports the Ethernet Ring Protection Switching (ERPS) technology, which is a Layer 2 link redundancy protocol designed for the core Ethernet. The control device blocks loops and restores links, and non-control devices directly report their link status to the control device, without processing from other non-control devices. Therefore, loop elimination and service recovery time of ERPS is faster than that of STP. ERPS implements link restoration within milliseconds.

When STP is disabled, the Rapid Link Protection Protocol (RLDP) can still provide basic link redundancy and millisecond-level fault rectification faster than STP.

With the Bidirectional Forwarding Detection (BFD), the RG-CS83 can detect links within milliseconds, and quickly converge routing and other services through association with upper-layer routing protocols, ensuring service continuity.

Energy Efficiency

Ruijie integrates multiple energy-saving designs into the RG-CS83. The RG-CS83 reduces loud noise produced by deployment in offices and solves excessive energy consumption resulting from the large-scale deployment of access devices.

In addition, the RG-CS83 adopts the next-generation hardware architecture as well as advanced energy-efficient circuit design and components, to significantly save energy and lower noise. It is equipped with variable-speed axial fans to intelligently control the fan speed based on the ambient temperature, which reduces the power consumption and noise while ensuring stable device operation.

The energy efficient Ethernet (EEE) is another highlight of the RG-CS83 series switches. If a port is always idle in a period of time, the system enables the port to enter the energy saving mode. When the port needs to receive or send a packet, the system resumes services on the port by periodically sending listening streams, achieving the effect of energy saving.

The RG-CS83 provides automatic and energy-saving PoE modes.



Easy Network Maintenance

The RG-CS83 supports routine network diagnosis and maintenance based on SNMP, RMON, Syslog, and USB-based backup log and configuration. A network administrator can use various management and maintenance modes such as command line interface (CLI), web network management, Telnet, and CWMP-based zero-touch configuration to facilitate device management.

An LED mode button is available on the panel of the switch. You can press this button to check the current communication status and PoE status of all ports on the switch.

IPv4/IPv6 Dual-Stack Multi-Layer Switching

The RG-CS83 hardware supports both IPv4 and IPv6 dual stacks, as well as multi-layer line-rate switching to differentiate and process packets of each protocol effectively. With flexible IPv6 network communication solutions, the RG-CS83 can meet various IPv6 network demands such as planning or maintenance. The RG-CS83 supports a wide range of IPv4 routing protocols, covering IPv4 static routing, RIP, and OSPFv2. You can select a routing protocol based on the network situation for flexible network building. Additionally, the RG-CS83 also supports abundant IPv6 routing protocols such as IPv6 static routing, RIPng, and OSPFv3. These protocols can be flexibly selected to either upgrade an existing network to IPv6 or establish a new one.

Specifications

Hardware Specifications

Hardware Specifications	RG-CS83- 12GT4XS-P	RG-CS83-24GT4XS	RG-CS83-48GT4XS	RG-CS83- 24GT4XS-P	RG-CS83- 48GT4XS-P		
Interface Specifications							
Fixed ports	12 x 10/100/ 1000BASE-T ports 4 x 1GE/10GE SFP+ ports support PoE+	24 x 10/100/ 1000BASE-T ports 4 x 1GE/10GE SFP+ ports	48 x 10/100/ 1000BASE-T ports 4 x 1GE/10GE SFP+ ports	24 x 10/100/ 1000BASE-T ports 4 x 1GE/10GE SFP+ ports support PoE+	48 x 10/100/ 1000BASE-T ports 4 x 1GE/10GE SFP+ ports support PoE+		
Fan module	1 x fixed fan module	No fan	1 x fixed fan module	1 x fixed fan module	1 x fixed fan module		
Power module	1 x fixed power module	1 x fixed power module	1 x fixed power module	1 x fixed power module	1 x fixed power module		
Fixed management port	1 x console, and 1 x l	JSB 2.0 port					
System Specifications							
Packet forwarding rate	78 Mpps	96 Mpps	132 Mpps	96 Mpps	132 Mpps		
Switching capacity	104 Gbps	128 Gbps	176 Gbps	128 Gbps	176 Gbps		
MAC address table size	16,000						
ARP table size	4,000	4,000	4,000	4,000	4,000		
Number of IPv4 unicast routes	6,000						
Number of IPv4 multicast routes	1,000						



Hardware Specifications	RG-CS83- 12GT4XS-P	RG-CS83-24GT4XS	RG-CS83-48GT4XS	RG-CS83- 24GT4XS-P	RG-CS83- 48GT4XS-P		
Number of IPv6 unicast routes	2,000						
Number of IPv6 multicast routes	750						
Number of ACEs	Ingress: 1,750 Egress: 800						
Number of VSU members	4	4	4	4	4		
Dimensions and Weight							
Dimensions (W x D x H)	442 mm x 220 mm x 43.6mm (17.40 in. x 8.66 in. x 1.72 in.)	442 mm x 220 mm x 43.6mm (17.40 in. x 8.66 in. x 1.72 in.)	442 mm x 220 mm x 43.6mm (17.40 in. x 8.66 in. x 1.72 in.)	442 mm x 220 mm x 43.6mm (17.40 in. x 8.66 in. x 1.72 in.)	442 mm x 220 mm x 43.6mm (17.40 in. x 8.66 in. x 1.72 in.)		
Weight	3 kg (6.61 lbs)	3.75 kg (8.27 lbs)					
CPU and Storage							
СРИ	1.0 GHz dual-core CPU						
Flash memory	512 MB						
BootROM	16 MB						
SDRAM	1 GB						
Data packet buffer	4 MB						
Power and Consumption							
Maximum power consumption	< 35 W (non-PoE) < 405 W (PoE full load)	< 25 W	< 40 W	< 35 W (non-PoE) < 405 W (PoE full load)	< 52 W (non-PoE) < 460 W (PoE full load)		
Maximum output power	409 W Maximum PoE output :370W	25 W	40 W	409 W Maximum PoE output :370W	460 W Maximum PoE output :405W		
Rated input voltage	100 V AC to 240 V AC						
Maximum input voltage	90 V AC to 264 V AC, 50 Hz to 60 Hz	90 V AC to 264 V AC, 50 Hz to 60 Hz	90 V AC to 264 V AC, 50 Hz to 60 Hz	90 V AC to 264 V AC, 50 Hz to 60 Hz	90 V AC to 264 V AC, 50 Hz to 60 Hz		
Environment and Reliabili	ty				· 		
MTBF	24.14 years	23.74 years	23.85 years	23.94 years	22.86 years		
Primary airflow	Front-to-right and left-to-right airflow						
Operating temperature	0°C to 45°C (32°F to 113°F)						
Storage temperature	-40°C to +70°C (-40°F to +158°F)						



Hardware Specifications	RG-CS83- 12GT4XS-P	RG-CS83-24GT4XS	RG-CS83-48GT4XS	RG-CS83- 24GT4XS-P	RG-CS83- 48GT4XS-P		
Operating humidity	10% to 90% RH (non-condensing)						
Storage humidity	5% to 95% RH (non-condensing)						
Operating noise	27°C: < 35 dB	< 20 dB	27°C: < 32 dB	27°C: < 35 dB	27°C: < 35 dB		
Interface surge protection	Power port: 6 kV(common mode)/8 kV (differential mode) Communication port: 10 kV	Power port: 6 kV(common mode)/6 kV (differential mode) Communication port: 10 kV	Power port: 6 kV(common mode)/6 kV (differential mode) Communication port: 10 kV	Power port: 6 kV(common mode)/8 kV (differential mode) Communication port: 10 kV	Power port: 6 kV(common mode)/8 kV (differential mode) Communication port: 10 kV		
Coating Conformal	Conformal coating supported (key components only)	Conformal coating supported (key components only)	Conformal coating supported (key components only)	Conformal coating supported (key components only)	Conformal coating supported (key components only)		

Software Specifications

RG-CS83 Series					
Feature	Description				
	Jumbo frame (maximum length: 9,216 bytes)				
	802.3az EEE				
	IEEE 802.1Q (4K VLANs)				
	Voice VLAN				
	Super-VLAN and private VLAN				
Ethernet switching	MAC address-based VLAN, interface-based VLAN, protocol-based VLAN, and IP subnet-based VLAN				
, and the same of	GVRP				
	Basic QinQ Selective QinQ				
	STP, RSTP, and MSTP				
	ERPS (G.8032)				
	LLDP/LLDP-MED				
	ARP				
	DHCP client, DHCP relay, and DHCP server				
	DHCP snooping				
IP service	DNS				
	DHCPv6 client, DHCPv6 relay, and DHCPv6 server				
	DHCPv6 snooping				
	Neighbor Discovery (ND) and ND snooping				



RG-CS83 Series					
Feature	Description				
IP routing	Static routing				
	RIP and RIPng				
	OSPFv2 and OSPFv3				
	IPv4 and IPv6 VRF				
	IPv4 and IPv6 PBR				
	IGMP v1/v2/v3, and IGMP proxy				
	IGMP v1/v2 snooping				
	PIM-DM, PIM-SM, and PIM-SSM				
Multicast	MSDP				
	MLD v1/v2				
	MLD snooping v1/v2				
	PIM-SMv6 and PIM-SSM v6				
	Standard IP ACLs Extended IP ACLs Extended MAC ACLs Time-based ACLs Expert-level ACLs ACL80 IPv6 ACL				
ACL and QoS	ACL redirection				
· ·	Traffic rate limiting on an interface				
	Congestion management: RR, SP, WRR, DRR, WFQ, SP+WRR, SP+DRR, and SP+WFQ				
	Congestion avoidance: tail drop				
	802.1p/DSCP/ToS traffic classification Eight priority queues per interface				
	Multiple AAA modes				
Security	RADIUS and TACAS+				
	Interface-based and MAC address-based 802.1x authentication				
	Web authentication				
	HTTPS				
	SSHv1 and SSHv2				
	Global IP-MAC binding				



RG-CS83 Series			
Feature	Description		
	Port isolation and port security		
Convito	IP source guard		
Security	SAVI		
	CPP and NFPP		
	REUP, RLDP, DLDP		
	IPv4 VRRP v2/v3 and IPv6 VRRP		
	BFD		
Reliability	Link tracing, fault notification, and remote loopback based on 802.3ah (EFM)		
	Dual-Boot Redundancy		
	Fan speed adjustment Fan fault alarm		
Device virtualization	Virtual Switching Unit (VSU)		
	SPAN, RSPAN		
	sFlow		
	NTP and SNTP		
	FTP and TFTP		
NMS and maintenance	SNMP v1/v2/v3		
NIVIS and maintenance	RMON (1, 2, 3, 9)		
	NETCONF		
	CWMP (TR-069)		
	gRPC		
	Cloud and SON		
РоЕ	RG-CS83-12GT4XS-P, RG-CS83-24GT4XS-P, and RG-CS83-48GT4XS-P: IEEE 802.3af and 802.3at Warm start Interface priority		



Protocol Compliance

RG-CS83 Series	
Organization	Standards and Protocol
IETF	RFC 130S Network Time Protocol Version 3 (NTP) RFC 130S Network Time Protocol Version 3 (NTP) RFC 130S Network Time Protocol Version 3 (NTP) RFC 1349 Internet Protocol (IP) RFC 1350 FFIP Protocol (revision 2) RFC 1519 CDR RFC 1519 Domain Name System Structure and Delegation RFC 153D Domain Name System Structure and Delegation RFC 153D RFC 153D RFC 1540 RFC 153D Domain Name System Structure and Delegation RFC 1541 Requirements for IP Version 4 Router RFC 1591 Domain Name System Structure and Delegation RFC 1517 Remote Network Monitoring (RMON) RFC 1312 Delegation of the System Structure (RFC 1901 Introduction to Community-based SNMPv2 RFC 1918 Address Allocation for Private Internet RFC 1901 Introduction to Community-based SNMPv2 RFC 1918 Address Allocation for Private Internet RFC 1901 Introduction to Community-based SNMPv2 RFC 1918 Address Allocation for Private Internet RFC 1918 Address Allocation for RFC 1918 Address Allocation (RFC 1918 Address Allocation Internation Internati



RG-CS83 Series				
Organization	Standards and Protocol			
IEEE	IEEE 802.2 Logical Link Control IEEE 802.1ab Link Layer Discovery Protocol IEEE 802.1ad Provider Bridges IEEE 802.1ax/IEEE802.3ad Link Aggregation IEEE 802.1D Media Access Control (MAC) Bridges IEEE 802.1D Spanning Tree Protocol IEEE 802.1Q Virtual Bridged Local Area Networks (VLAN) IEEE 802.1s Multiple Spanning Tree Protocol IEEE 802.1w Rapid Spanning Tree Protocol IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE Std 802.3x Full Duplex and flow control			

Typical Applications

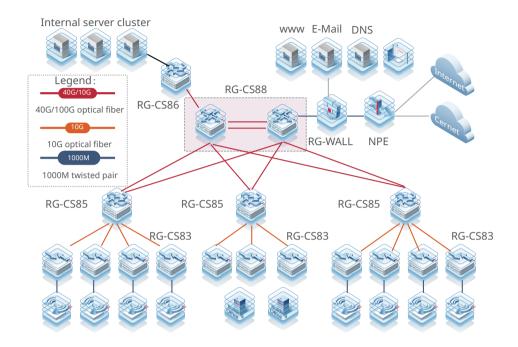
The RG-CS83 series switches are characterized by security, high efficiency, intelligence, and energy saving to fully meet network requirements in the following scenarios:

- Full 1000M access to a local area network (LAN) in a large-scale institution or enterprise campus, such as the government building, university, and manufacturing/energy/metallurgy unit
- 1000M access to a commercial system such as the healthcare, library, exhibition center, and website
- Access for IP telephones, WLAN access points (APs), and HD cameras
- 1000M access for server groups and high-bandwidth 10GE uplink
- Flexible and diverse security control policies are needed to prevent and control network viruses and attacks, ensuring user access security.



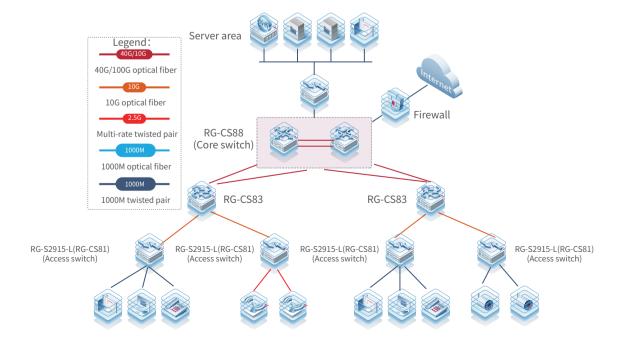
Scenario 1

The RG-CS83 series switches used as access switches are connected to the RG-CS85 series aggregation switches and the RG-CS88 series campus core switches. They provide 1000M access to the desktop and high-performance 10GE links between aggregation and core layers, meeting growing demands of access to user information.



Scenario 2

The RG-CS83 series switches used as aggregation switches are connected to the RG-2915L series indoor access switches and the RG-CS88 series core switches. They provide 1000M access to the desktop and 10GE links between aggregation and core layers, meeting growing demands of access to user information. This networking provides cost-effectiveness, high performance, and high bandwidth.





Ordering Guide

Follow the steps to order the RG-CS83 series switches.

- Select a switch and expansion modules based on port requirements.
- Select optical transceivers based on port requirements.

Models marked with asterisks (*) in the ordering information are available later.

Ordering Information

Order switches, expansion modules, power supply modules, and other components as needed. Before ordering an expansion module or power supply module, please contact our online customer service team for the latest support information about the module.

Model	Description
RG-CS83-12GT4XS-P	$12 \times 10/100/1000$ BASE-T ports, 4×1 GE/10GE SFP+ ports, PoE power supply, a maximum of 370 W PoE output, and built-in power module
RG-CS83-24GT4XS	24 x 10/100/1000BASE-T ports, 4 x 1GE/10GE SFP+ ports, and built-in power module
RG-CS83-48GT4XS	48 x 10/100/1000BASE-T ports, 4 x 1GE/10GE SFP+ ports, and built-in power module
RG-CS83-24GT4XS-P	$24 \times 10/100/1000$ BASE-T ports, 4×1 GE/10GE SFP+ ports, PoE power supply, a maximum of 370 W PoE output, and built-in power module
RG-CS83-48GT4XS-P	$48 \times 10/100/1000$ BASE-T ports, 4×1 GE/10GE SFP+ ports, PoE power supply, a maximum of 405 W PoE output, and built-in power module
Mini-GBIC-GT	1000BASE-GT mini GBIC module
MINI-GBIC-SX-MM850	Single-port 1000BASE-SX mini GBIC module (LC connector)
MINI-GBIC-LX-SM1310	Single-port 1000BASE-LX mini GBIC module (LC connector)
MINI-GBIC-LH40-SM1310	Single-port 1000BASE-LH mini GBIC module (LC connector), supporting a transmission distance of 40 km (24.85 miles)
MINI-GBIC-ZX50-SM1550	Single-port 1000BASE-ZX mini GBIC module (LC connector), supporting a transmission distance of 50 km (24.85 miles)
MINI-GBIC-ZX80-SM1550	Single-port 1000BASE-ZX mini GBIC module (LC connector), supporting a transmission distance of 80 km (24.85 miles)
MINI-GBIC-ZX100-SM1550	1000BASE-ZX mini GBIC module, supporting a transmission distance of 100 km (62.14 miles)
XG-SFP-SR-MM850	10GE LC module (62.5/125 μm: 33 m (108.27 ft.); 50/125 μm: 66 m (216.54 ft.); transmit for 300 m (984.25 ft.) when modal bandwidth is 2000 MHz * km), applicable to SFP+ ports
XG-SFP-LR-SM1310	10GE LC interface module (1310 nm), 10 km (6.21 miles), applicable to SFP+ ports



Model	Description
XG-SFP-ER-SM1550	10GE LC interface module (1550 nm), 40 km (24.85 miles), applicable to SFP+ ports
XG-SFP-AOC1M	10GE SFP+ fiber-optic cable, 1 m (3.28 ft.), including one cable and two interface modules
XG-SFP-AOC3M	10GE SFP+ fiber-optic cable, 3 m (3.28 ft.), including one cable and two interface modules
XG-SFP-AOC5M	10GE SFP+ fiber-optic cable, 5 m (3.28 ft.), including one cable and two interface modules

Package Contents

Device	RG-CS83- 12GT4XS-P	RG-CS83- 24GT4XS	RG-CS83- 48GT4XS	RG-CS83- 24GT4XS-P	RG-CS83- 48GT4XS-P
Host	1	1	1	1	1
Mounting bracket	2	2	2	2	2
Rubber pad	4	4	4	4	4
Mounting Bracket Installation Guide	1	1	1	1	1
Warranty Manual and Network Product Hazardous Substance Table	1	1	1	1	1
Cross recessed countersunk head screw, M4x8, GB819-85M4X8	8	8	8	8	8
Grounding wire	1	1	1	1	1
Package dimensions (W x D x H)	540 mm x 338 mm x 154 mm (21.26 in. x 13.31 in. x 6.06 in.)	540 mm x 338 mm x 154 mm (21.26 in. x 13.31 in. x 6.06 in.)	540 mm x 338 mm x 154 mm (21.26 in. x 13.31 in. x 6.06 in.)	540 mm x 338 mm x 154 mm (21.26 in. x 13.31 in. x 6.06 in.)	540 mm x 338 mm x 154 mm (21.26 in. x 13.31 in. x 6.06 in.)
Package weight	4.18 kg (9.22 lbs)	4.10 kg (9.04 lbs)	4.10 kg (9.04 lbs)	4.25 kg (9.37 lbs)	4.90 kg (10.80 lbs)





For more information about warranty terms and period, contact your local sales agency:

- Warranty terms: https://www.ruijienetworks.com/support/servicepolicy
- Warranty period: https://www.ruijienetworks.com/support/service_41

Note: The warranty terms are subject to the terms of different countries and distributors.

More Information

For more information about Ruijie Networks, visit the official Ruijie website or contact your local sales agency:

- Ruijie Networks official website: https://www.ruijienetworks.com/
- Online support: https://www.ruijienetworks.com/support
- Hotline support: https://www.ruijienetworks.com/support/hotline
- Email support: service_rj@ruijienetworks.com



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