RG-SC6705-SP

Multi-Service Wireless Controller

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Product Pictures

Product Overview

The RG-SC6705-SP wireless controller is designed for scenarios where an operator performs O&M for enterprises, and is suitable for higher education, government, general education, finance, and business application scenarios.

It has a small size and a large capacity, and is easy to install. It offers comprehensive functions, including intelligent load balancing, automatically enabling or disabling RF/SSID, seamless roaming across the network, flexible and complete security policies, rich management and maintenance functions, and integrated gateway. It delivers high performance, high-reliability wireless experience, and secures data transmission. It supports command lines, web interface, and WIS intelligent service platform, making it convenient for enterprise IT managers to perform unified and cost-effective planning, operation, and maintenance of wireless networks.

Product Highlights

Cloud O&M

- **Seamless roaming:** allows STAs to roam at Layer 2 or Layer 3 in the RG-SC6705-SP, so that STAs can cross the entire wireless network without IP address changes, thus ensuring good mobility and security.
- **WIS:** provides professional, intelligent, and attentive services throughout the lifecycle of wireless products, covering network planning and design, implementation and deployment, intelligent network optimization, experience optimization, and subsequent inspection and O&M.
- **WIS cloud unified management:** performs cloud-based network-wide configuration and optimization, without onsite debugging. You can use Wi-Fi Moho for remote O&M, so that wireless networks can be monitored anytime and anywhere.
- **Remote logging:** displays system logs and sends system logs to the server for recording, which helps you learn detailed operation of a wireless network, with no worry about the lack of logs.

Complete Functionalities

- **Intelligent load balancing:** intelligently distributes STAs connected to APs in real time based on the number of STAs and traffic on each associated AP in a high-density environment, thereby balancing the traffic load, increasing the average STA bandwidth and QoS, and improving the availability of network connections.
- **Automatically enabling or disabling RF/SSID:** automatically enables or disables wireless RF and SSID at the scheduled interval, without participation of administrators. That is, a wireless network can be automatically and periodically enabled or disabled.
- **Flexible and complete security policies:** provides complete data security mechanisms, including four authentication modes of WPA, WPA-PSK, WPA2, and WPA2-PSK, and encryption technologies of WEP, TKIP, and AES, to ensure security of wireless network data transmission.
- **Disabling SSID broadcast:** disables SSID broadcast on the AP connected to the RG-SC6705-SP, so as to prevent unauthorized wireless clients in the local area from searching SSIDs and cracking passwords.
- **Blocklist/Allowlist:** offers global and SSID-based blocklist and allowlist, preventing unauthorized STAs from connecting to the wireless network where the RG-SC6705-SP is located. The blocklist and allowlist better control the scope of a wireless network and prevents unauthorized STAs from cracking passwords and connecting to SSIDs.

Cost-effectiveness

- **Integrated multi-service:** integrates functions of the AC, PoE switch, and gateway, reducing investment on device procurement, simplifying networking, and streamlining wiring operations. It can directly constitute networking with APs.
- **No license fee:** manages 64 APs in Fit mode with a built-in license. APs can download configuration from the AC for daily software upgrade, reducing manual operations and easily achieving routine management of multiple APs.
- **Integrated gateway:** integrates basic gateway capabilities including NAT and PPPoE to address issues of complex networking and high cost of a single point for small- and medium-sized networks.
- **Silent, compact design** uses the fanless and compact design, with dimensions of 200 mm x 110 mm x 25 mm (7.87 in. x 3.94 in. x 0.98 in.). It occupies less space, so it can be easily placed on the desktop, counter, ELV box, and other places.

Applicable Scenarios

Higher Education Industry

- **WIS:** allows an operator to use WIS of the RG-SC6705-SP to provide professional, intelligent, and attentive services throughout the lifecycle of wireless products, covering network planning and design, implementation and deployment, intelligent network optimization, experience optimization, and subsequent inspection and O&M.
- **Remote logging:** enables an operator to obtain various log information remotely, grasping detailed operation of wireless networks in real time, effectively reducing on-site operation and maintenance costs, and improving the service quality.
- **WIS cloud unified management:** allows an operator to realize remote configuration, optimization, and monitoring, eliminating the need of onsite debugging and improving the efficiency of O&M.

Manufacturing Industry

- **High performance and reliability:** enables an operator to provide stable network services for the manufacturing industry demanding high network stability, with high performance and reliability of the RG-SC6705-SP.
- **Integrated gateway: i**ntegrates basic gateway capabilities to simplify networking, and reduce the device procurement investment for an operator in manufacturing industry scenarios.
- **Network-wide seamless roaming:** supports Layer 2 and Layer 3 roaming and enables the wireless user to roam across the wireless network with a constant IP address, providing reliable wireless roaming capabilities for manufacturing and handheld devices in warehouses or manufacturing environments to safeguard mobility and security.

Retail Industry

- **Cost-effectiveness:** is cost-effective, and provides operators with a high-quality and cost-effective wireless network solution in the retail industry.
- **Automatically enabling or disabling RF/SSID:** allows an operator to provide retail customers with the capability to enable or disable their wireless networks at regular intervals, saving energy and reducing operating costs.
- **Multiple management modes:** provides management modes such as the web interface and command line, making it easy for an operator to provide network O&M services for retail customers.

Product Features

Smart Wireless Experience

Intelligent Load Balancing

In the case of high-density STAs, the RG-SC6705-SP intelligently adjusts APs to provide access services based on the number of STAs and data traffic on each associated AP in real time. This balances the access load pressure, increases the average bandwidth and QoS for STAs, and improves the high availability of connections. The RG-SC6705-SP can implement intelligent load balancing not only based on STAs and traffic, but also based on frequency bands. Most Wi-Fi devices use the 2.4 GHz frequency band by default, while the 5 GHz frequency band (IEEE 802.11a/n/ac/ax) can achieve higher throughput performance. Frequency band-based load balancing enables dual-band STAs to preferentially access the 5 GHz frequency band. This increases bandwidth usage without increasing costs, and ensures high-speed wireless Internet access experience for users.

Automatic Enabling/Disabling of RF and SSID Signals

The RG-SC6705-SP can automatically enable or disable RF and SSID signals as scheduled. In this manner, administrators do not need to configure these wireless network functions, which can be automatically enabled or disabled.

High Performance and Reliability

Network-Wide Seamless Roaming

The RG-SC6705-SP supports Intra-AC L2/L3 roaming, which allows STAs to traverse the entire network with their IP addresses unchanged, achieving high mobility and security.

Flexible and Comprehensive Security Policies

User Data Encryption Security

The RG-SC6705-SP adopts a complete data security guarantee mechanism, which supports WPA, WPA-PSK, WPA2, and WPA2-PSK authentication modes as well as WEP, TKIP, and AES encryption technologies to guarantee the data transmission security of wireless networks.

Standard Communication Protocol

The international standard protocol CAPWAP is adopted between the RG-SC6705-SP and APs for encrypted communication. It implements isolation from wired networks and ensures the confidentiality of real-time communication between the RG-SC6705-SP and APs. In addition, CAPWAP can support the control of third-party APs in the future to facilitate network expansion, thereby protecting user investment to the maximum.

Disabling of SSID Broadcast

The RG-SC6705-SP can control APs to disable the SSID broadcast mechanism. This can prevent unauthorized STAs from searching for SSID signals in local areas to crack passwords.

STA Blacklist/Whitelist

The RG-SC6705-SP supports the global STA blacklist/whitelist and SSID-based STA blacklist/whitelist. Unauthorized STAs cannot be associated with the wireless network of the RG-SC6705-SP, which can better control the wireless network to prevent cracking and association operations from unauthorized STAs.

Comprehensive Management and Maintenance

Various Management Methods and Unified Management Platform

The RG-SC6705-SP supports various management methods, such as the CLI, and can implement centralized, effective, and low-cost planning, deployment, monitoring, and management for APs on the entire network.

Web GUI-based Management

The RG-SC6705-SP provides a web GUI for management, on which O&M personnel can complete wireless configuration easily and manage the wireless network comprehensively. On the web GUI, O&M personnel can manage APs as well as STAs connected with the APs, and restrict the rates and network access behaviors of the STAs. With the GUI, O&M personnel can plan, manage, and maintain wireless networks conveniently.

WIS Intelligent Service

The RG-SC6705-SP provides the WIS platform, which delivers professional, intelligent, and considerate services for the whole wireless product life cycle, covering network planning and design, implementation and deployment, intelligent network optimization, experience improvement, as well as inspection and O&M. The Wi-Fi Moho app enables wireless network O&M to be completed remotely, implementing mobile O&M.

Remote Logging

The RG-SC6705-SP provides various types of logs. System logs can be displayed and sent to servers. In this way, the RG-SC6705-SP is fully conversant with the running status of the wireless network without concerns about log missing.

Integrated Gateway Functions

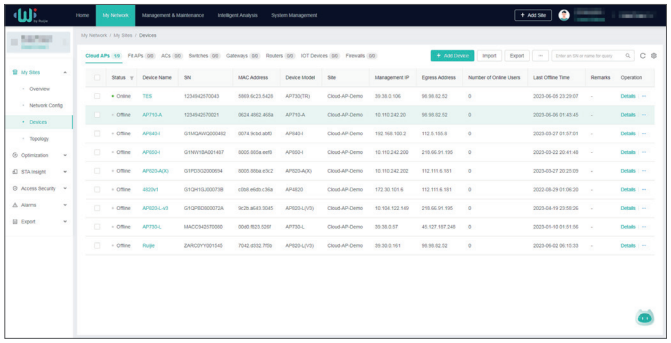
Small- and medium-sized networks generally feature high network costs due to their complex networking. The RG-SC6705-SP integrates basic gateway functions, such as NAT and PPPoE.

Solution Scalability Capabilities

Ruijie WIS Cloud Management Network Solution (WIS for short) provides full-lifecycle cloud management network services covering network procurement, planning, deployment, acceptance, and O&M. When the AC connects to WIS and AP, it can meet various needs in multiple scenarios including planning, deployment, acceptance, and operation through cloud management, cloud O&M, cloud authentication, and other value-added services provided by WIS.

Network-wide Cloud Management

WIS supports integrated management and control of various types of devices including APs, ACs, switches, gateways, and routers. It supports remote O&M management operations such as adding or batch importing of multi-branch network devices, online status monitoring, configuration delivery, upgrade, restart, configuration backup, and restoration. It supports network-wide topology auto-discovery and topology status monitoring.



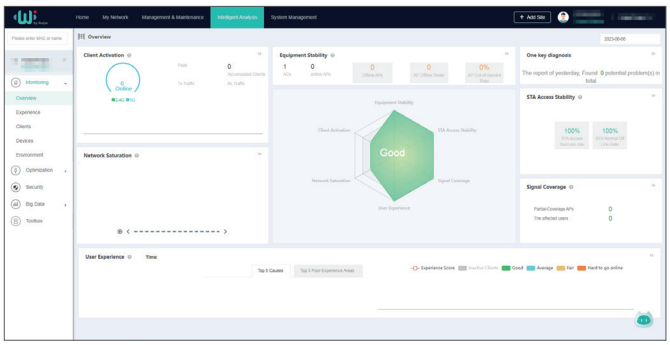
Local Cloud Deployment

WIS supports local cloud deployment, provides unified network access control, supports centralized authentication with multiple authentication modes, offers flexible policy control, achieves high availability and scalability. It provides secure integration, and reporting and auditing, better protecting sensitive data and resources. It supports network elasticity and on-demand scaling, reduces TCO, and maximizes ROI.

Wireless Network Visualization

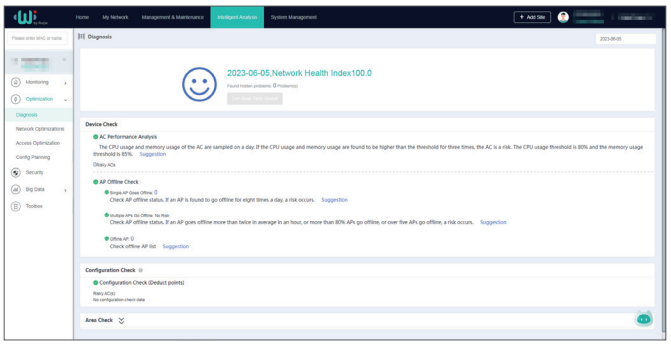
The overview function module of WIS provides a comprehensive view of the network running status from the perspective of overview, experience, users, devices, and environment. The network running information includes the following items:

- Network basic information: device stability, device health, user stability, network signal coverage, and network association.
- User usage: user activity (network dependency), and user online experience and analysis.
- Network saturation: network capacity usage and channel usage.



Intelligent Network Diagnosis

With WIS, wireless network diagnosis and health index assessment can be completed in just one click, providing test results for each item. The health index provided by WIS enables you to rapidly assess the state of your live network. WIS can locate faulty areas, APs, and STAs, and provides potential risks and corresponding optimization suggestions.



Product Specifications

Key Specifications

Key Specification	RG-SC6705-SP
Number of Manageable APs	64 (fixed number, license-based expansion unavailable) Note: The number of APs that can be managed by the AC is subject to the AP model. See the Ordering Information for details
Maximum number of configurable APs	128
Maximum number of manageable STAs	2,048 Note: The maximum number of STAs that can be managed by the AC is subject to the network environment. Contact technical support team for details.
802.11 forwarding capacity	2 Gbps (subject to the wireless network environment)
WLAN service	Maximum number of WLAN IDs: 2,048 Maximum number of associated STAs per WLAN: 2,048
Number of VLANs	4,094
Port	1 x 10/100/1000BASE-T port 4 x 10/100/1000BASE-T ports, compliant with IEEE 802.3af/at standard (PoE/PoE+) 1 x RJ45 console port (serial console port) 1 x USB port (not supporting removable hard disks)
Power supply	Input power supply: 1 x 80 W power adapter (the device is powered through the DC power jack) Power input: 100 V AC to 240 V AC, 50 Hz to 60 Hz, 1.5 A (maximum current) Power output: 54 V DC, 1.48 A
External power supply	IEEE 802.3af/at-compliant (PoE/PoE+) output Maximum PoE power consumption: 56 W Two power supply modes: • Two ports for IEEE 802.3at-compliant (PoE+) output • Four ports for IEEE 802.3af-compliant (PoE) output
Maximum power consumption	64.2 W
Rack height	1 RU
Applicable software version	RGOS11.9(6)B5P9 or later
Network management platform	Web-based management (Eweb) WIS-based management (RG-iData-WIS)

Hardware Specifications

Hardware Specification	RG-SC6705-SP
Unit dimensions (W x D x H)	200 mm x 110 mm x 25 mm (7.87 in. x 4.33 in. x 0.98 in.).
Weight	Main unit: 1.0 kg (2.20 lbs) Shipping: 1.1 kg (2.43 lbs)
Mounting	Workbench/Wall-mount
Status LEDs	SYS: 1 x system status LED PWR: 1 x power LED WAN: 1 x WAN port LED LAN: 4 x LAN port LEDs PoE: 4 x PoE LEDs
Button	1 x Reset button • Press the button for shorter than 2 seconds. Then the device restarts. • Press the button for longer than 5 seconds. Then the device restores to factory settings.
Environment	Storage temperature: –40°C to +70°C (–40°F to +158°F) Storage humidity: 5% RH to 95% RH (non-condensing) Storage altitude: –500 m to +5,000 m (–1,640.42 ft. to +16,404.20 ft.) Operating temperature: –10°C to +40°C (14°F to 104°F) Operating humidity: 10% RH to 90% RH (non-condensing) Operating altitude: –500 m to +5,000 m (–1,640.42 ft. to +16,404.20 ft.) Note: At an altitude in the range of 3,000–5,000 m (9,842.52–16,404.20 ft.), every time the altitude increases by 166 m (544.62 ft.), the maximum temperature decreases by 1°C (1.8°F).
Fan	Fanless design
Mean Time Between Failure (MTBF)	400,000 hours (44 years) at the operating temperature of 25°C (77°F)
System memory	1 GB DRAM, 512 MB SPI nand flash

Software Specifications

Basic Function	RG-SC6705-SP
WLAN	
IEEE 802.11 Protocols	802.11, 802.11b, 802.11a, 802.11d, 802.11g, 802.11i, 802.11e, 802.11n, 802.11ac, 802.11ax, 802.11r, 802.11w, 802.11kv

Basic Function	RG-SC6705-SP
CAPWAP	IPv4 CAPWAP CAPWAP through NAT MTU setting and fragmentation over CAPWAP tunnels Encryption over CAPWAP control channels Number of concurrent CAPWAP data channels: 128
Roaming	Intra-AC Layer 2 or Layer 3 roaming Intra-AC roaming handoff time: Less than 50 ms Centralized forwarding Local forwarding
Forwarding	Local forwarding and centralized forwarding
Wireless QoS	AP/WLAN/STA-based rate limiting WLAN/STA-based rate limit range: 8-261,120 in the unit of 8 Kbps For example, if you set the value to 8, the rate limit is as follows: 8 x 8 kbps = 64 kbps Static and intelligent rate limiting based on STA quantity Fair scheduling
User isolation	Layer 2 user isolation in WIDS configuration mode
STA management	Access control based on the number of STAs served by each AP Access control based on the number of STAs served by each SSID Access control for load balancing based on the number of STAs served by each AP Access control for load balancing based on the traffic of each AP Global blacklist/whitelist SSID-based blacklist/whitelist Band steering Configuration of the RSSI threshold in dB (range: 0-100) Configuration of the STA idle timeout period in seconds (range: 60-86,400)
AP management	An AC can control an AP to restart as scheduled. An AP can be registered using a password, certificate, MAC address, or SN.
WLAN optimization	Adjustment of the Transmit Power for Beacon and Probe Response
RF management	Country or region code setting Manual setting of the transmit power Automatic setting of the transmit power Manual setting of the operating channel Automatic setting of the operating channel AP load balancing based on traffic and STA quantity Band selection Radio Frequency Interference (RFI) detection and mitigation

Basic Function	RG-SC6705-SP
Security and Authentication	
IPv4 security authentication	Web authentication 802.1X authentication MAC address bypass (MAB) authentication Maximum number of STAs supported by the built-in Portal server: 100
IEEE 802.11 security and encryption	Multi-SSID SSID hiding IEEE 802.11i PSK authentication WPA and WPA2 WPA3: WPA3-Personal and WPA3-Enterprise Anti-ARP spoofing
ACL	Maximum number of ACEs: 8,192
CPP	CPU Protect Policy (CPP)
NFPP	Network Foundation Protection Policy (NFPP)
WIDS	Wireless Intrusion Detection System (WIDS)
Routing and Switching	
MAC	Maximum number of MAC address entries: 4,096
ARP	Maximum number of ARP entries: 3,000
IPv4 protocols	Ping and traceroute DHCP server, DHCP client , and DHCP relay DHCP address pools • Maximum number of IPv4 address pools: 2,000 • Maximum number of IPv4 addresses: 4,096 DNS client GRE tunnel: 4 over 4 IGMPv1/v2/v3 snooping FREE-URL: App-based, URL-based, and WLAN-based authentication-free TFTP server and TFTP client FTP server and FTP client NTP server and NTP client SNTP client
IPv4 routing	Static routing IPv4 routing entries: 512

Basic Function	RG-SC6705-SP
Management and Maintenance	
Network management	Syslog SNMPv1/v2c/v3 RMON
User access management	Console port login, Telnet login, SSH login, and FTP upload

Value-added Software

The following value-added software functions can be achieved with the WIS solution (used with RG-iData-WIS and AP).

Value-added Software	RG-SC6705-SP
Intelligent O&M	
Experience	Network operation analysis, such as device stability and signal coverage Measuring users' network experience based on indicators such as the latency, packet loss, signal strength, and channel utilization, and visualizing results of the network experience Statistics on the number of online and offline failures of STAs associated with different APs, average signal strength, and other parameters VIP monitoring and alarm, and custom alarm thresholds STA global experience map and experience coverage evaluation based on the time range STA access protocol replay and fine-grained STA fault diagnosis Note: To support the preceding functions, ensure that the AP works in Fit mode.
Network optimization	Network performance optimization, including one-click network optimization and scenario-based optimization Client steering to cope with roaming stickiness, and experience indicator comparison Client steering to cope with remote association, and experience indicator comparison One-click diagnosis – analyzing problems and providing suggestions
Big data	Baseline analysis – recording the configuration, version, and other changes, and tracking network KPI changes Time capsule – analyzing the device version and configuration change history
Regional analysis	Batch generation of building floor information – uploading floor plans, and dragging and dropping AP positions
One-click report	One-click health report – generating a report on the overall operation of a network
Security radar	Unauthorized Wi-Fi signal location, presentation by category, and containment

Value-added Software	RG-SC6705-SP
Cloud Management	
Management and maintenance	Uniformly connecting, managing, and maintaining APs, ACs, and other devices, batch device configuration and upgrade, and other functions Deployment through Zero Touch Provisioning (ZTP) – creating configuration templates and automatically applying configured templates One-click discovery of the wired and wireless network topology and topology generation
Cloud Authentication	
Authentication mode	SMS authentication, fixed account authentication, one-click authentication, Facebook authentication, Instagram authentication, voucher authentication, and other authentication modes Authentication implemented in the cloud, without the need to deploy the local authentication server
Customized portal	Customized Portal authentication page for mobile phones and PCs
SMS gateway	Interconnection with SMS gateways of GUODULINK and Alibaba Cloud
Platform Capabilities	
Big data capabilities	Mainstream persistence solutions based on Hadoop, MongoDB, and MySQL, providing distributed storage capabilities Spark-based big data computing capabilities Data warehouse building based on Hive, and data model conversion, integration, and other functions
Hierarchy and decentralization	Authorizing different applications for different users to meet service needs of different departments Granting operation permissions to administrators in different scenarios
System management	Account operation, authorization configuration, email configuration, configuration backup, exception alarms, and other system management functions

Note: For details, refer to the latest hybrid cloud management solution.

Regulatory Compliance

Regulatory Compliance	RG-SC6705-SP
Regulatory Compliance	EN 55032, EN 55035, EN 61000-3-3, EN IEC 61000-3-2, ETSI EN 300 386, IEC 62368-1, and EN 62368-1

*For more country-specific regulatory information and approvals, contact your local sales agency.

Ordering Information

Model	Description
RG-SC6705-SP	Multi-service AC with wired and wireless network integration: • One 10/100/1000 Mbps WAN port, four 10/100/1000 Mbps auto-sensing Ethernet LAN ports. • 54 V/1.48 A DC local power supply, supporting PoE for external power supply. • Supporting management of 64 APs (fixed number, license-based expansion unavailable).

Package Contents

Item	Quantity
Main unit	1
Foot pad	4
Screw	2
AC/DC adapter	1
Warranty card and hazardous substance table	1
Hardware Installation and Reference Guide	1

Warranty

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/servicepolicy/Service-Support-Summany/

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

Ruijie Networks Co., Ltd.

For more information, visit www.ruijienetworks.com or call 86-400-620-8818.