RG-SAP750-SP

Wi-Fi 5 Access Point

Scan QR Code
For More Enquiry

Ruijie

Product Pictures

Product Overview

The RG-SAP750-SP is a Wi-Fi 5 wireless access point that integrates dual radios, high performance, and enterprise-grade encryption technology. Due to the hybrid cloud management mode and high-speed access design, it is suitable for flexible deployment in high-quality network scenarios, such as classroom, dormitory, and office scenarios in the education industry, production workshop and warehouse scenarios in the manufacturing industry, and outpatient clinics and mobile ward rounds scenarios in the medical industry.

Product Highlights

Cost-effectiveness and High Speed

- Dual-band design (2.4 GHz + 5 GHz), four spatial streams, up to 1.167 Gbps peak data rate, and throughput increased compared to traditional 802.11n wireless mode, providing users with a high-speed wireless access experience
- RF power adjustment and intelligent channel allocation to solve the problems such as co-channel interference and adjacent channel interference, thereby improving network transmission efficiency and stability

Intelligent networking

- Local and cloud management modes, and intelligent wireless network optimization, reducing TCO and maximizing ROI
- Radio Resource Management (RRM) technology, avoiding signal interference between APs and between APs and interference devices, and improving user experience
- IEEE 802.11k/v/r support and roaming stickiness optimization, achieving seamless user roaming
- Intelligent local forwarding technology used to forward data that is sensitive to delay and requires real-time high-performance transmission through a wired network, greatly reducing the traffic pressure on ACs

High Security and Reliability

- Encryption and authentication technologies including Wi-Fi Protected Access 3 (WPA3), enhanced open security, 802.1X, MSCHAPv2 and Private Pre-shared Key (PPSK), enhancing data security
- Network Foundation Protection Policy (NFPP) used to rate-limit or isolate attack flows to restore the network
- Dynamic Frequency Selection (DFS), optimizing the use of available RF spectrum to prevent radar channel interference
- Cyclic Delay/Shift Diversity (CDD/CSD), Maximum Ratio Combining (MRC), Space-Time Block Coding (STBC), and Low-Density Parity Check (LDPC), improving the signal quality, signal receiving, and reliability and performance of data transmission
- Intelligent identification and monitoring, multicast-to-unicast conversion, and other features, enhancing network security and reliability

Applicable Scenarios

Higher Education

Classroom and Lab

Deploying Wi-Fi in classrooms and labs enables students and teachers to access network resources with ease, thereby enhancing the quality of teaching and learning. Students can engage in online learning, access course materials, and collaborate with classmates, while teachers can access teaching resources and deliver multimedia lessons.

Library

Wi-Fi deployment in libraries facilitates quick access to online resources such as e-books and academic papers for research and study by students and teachers.

Healthcare

Outpatient Service

The Wi-Fi network provides a mobile office environment for medical staff. Medical staff can use mobile devices to view patient information in real time, which significantly improves treatment efficiency. Patients can access relevant medical information through smart devices online, resulting in improved satisfaction.

Remote Monitoring and Management of Medical Devices

With Wi-Fi deployment, remote monitoring and management of medical devices become possible. Wireless medical devices such as ECG monitors and blood pressure monitors can transmit patient data in real time, thereby improving information security. Additionally, these wireless medical devices can be easily maintained and upgraded, resulting in cost reductions.

Product Features

Multi-scenario Adaptability

The RG-SAP750-SP, a dual-band wall-mounted wireless access point, is ideal for a wide range of applications, including higher education, government, general education, finance, and business sectors, providing flexible solutions to meet diverse service needs.

High-speed Access and Compatibility

The RG-SAP750-SP supports various wireless protocols, such as 802.11ac Wave2 and 802.11n. It features a hardware-independent dual-band design to deliver a data rate of up to 1.167 Gbps, effectively eliminating wireless performance bottlenecks. Additionally, it is compatible with an extensive array of devices, promoting seamless interconnectivity among employees and customers.

Security and Scalability

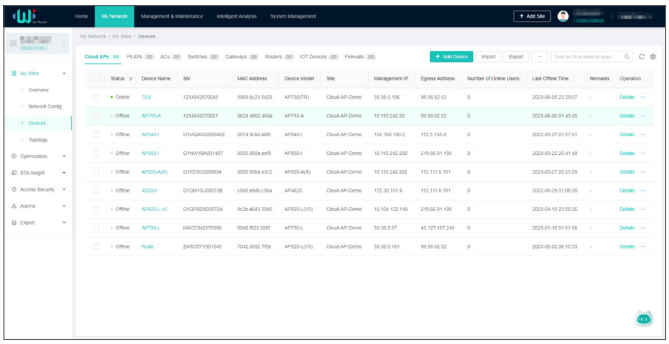
The RG-SAP750-SP stands out with its exceptional wireless network security, RF control, mobile access, QoS guarantee, and seamless roaming. With Ruijie's wireless access controller (AC), it enables wireless user data forwarding, security, and access control to cope with diverse service needs.

Flexible Deployment and Power Supply

The RG-SAP750-SP supports both local power supply and Power over Ethernet (PoE), providing you with the flexibility to choose the power supply mode. In addition, the RG-SAP750-SP can be mounted against a wall or ceiling, making space deployment and environmental requirements less challenging. This makes the RG-SAP750-SP particularly suitable for scenarios such as large campuses, conference centers, enterprise offices, and operation hotspots.

Solution Scalability Capabilities

Ruijie WIS Cloud Management Network Solution (WIS for short, https://wis.ruijienetworks.com/) provides full-lifecycle cloud management network services covering network procurement, planning, deployment, acceptance, and O&M. When the AP connects to WIS, 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.

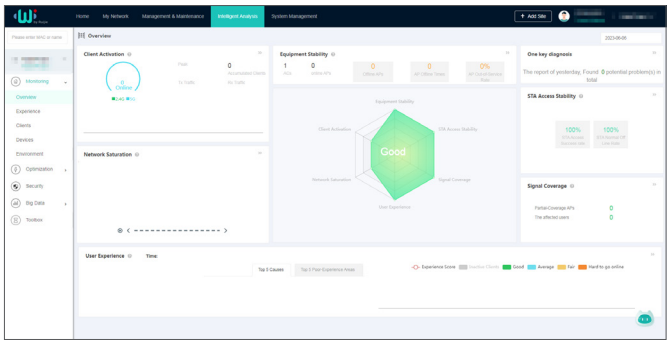
Wireless Network Visualization

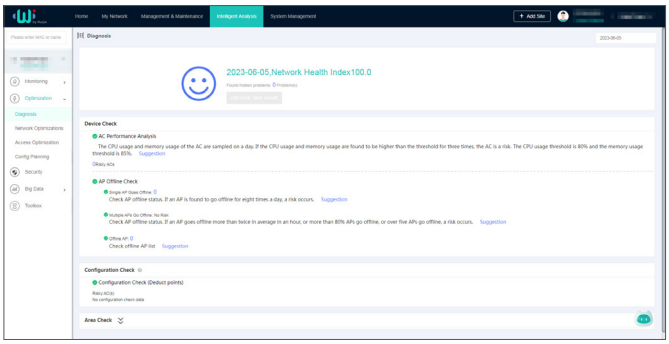
The overview function module of WIS provides a comprehensive view of the network running status from the perspective of overview, experience, users, devices, and environment. The network running information includes the following items:

- 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

Hardware Specifications

Hardware Specifications	RG-SAP750-SP
802.11n	Four spatial streams • Radio 1 – 2.4 GHz: 2x2 MIMO, two spatial streams • Radio 2 – 5 GHz: 2x2 MIMO, two spatial streams Channels: • Radio 1 – 2.4 GHz: 20 MHz and 40 MHz • Radio 2 – 5 GHz: 20 MHz and 40 MHz Combined peak data rate: 600 Mbps • Radio 1 – 2.4 GHz: 6.5 Mbps to 300 Mbps (MCS0 to MCS15) • Radio 2 – 5 GHz: 6.5 Mbps to 300 Mbps (MCS0 to MCS15) Radio technologies: Orthogonal Frequency-Division Multiplexing (OFDM) Modulation types: BPSK, QPSK, 16-QAM, 64-QAM Packet aggregation: • Aggregate MAC Protocol Data Unit (A-MPDU) • Aggregate MAC Service Data Unit (A-MSDU) Dynamic Frequency Selection (DFS) Cyclic Delay/Shift Diversity (CDD/CSD) Maximum Ratio Combining (MRC) Space-Time Block Coding (STBC) Low-Density Parity Check (LDPC) Transmit beam-forming (TxBF)

Hardware Specifications	RG-SAP750-SP
802.11ac	Two spatial streams • Radio 2 – 5 GHz: 2x2 MIMO, two spatial streams Channels: • Radio 2 – 5 GHz: 20 MHz, 40 MHz, and 80 MHz Combined peak data rate: 867 Mbps • Radio 2 – 5 GHz: 6.5 Mbps to 867 Mbps (MCS0 to MCS9) Radio technologies: Orthogonal Frequency-Division Multiplexing (OFDM) Modulation types: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM Packet aggregation: • Aggregate MAC Protocol Data Unit (A-MPDU) • Aggregate MAC Service Data Unit (A-MSDU) Dynamic Frequency Selection (DFS) Cyclic Delay/Shift Diversity (CDD/CSD) Maximum Ratio Combining (MRC) Space-Time Block Coding (STBC) Low-Density Parity Check (LDPC) Transmit beam-forming (TxBF)
Antenna	Wi-Fi • 2.4 GHz: two built-in omnidirectional antennas, with peak antenna gain of 4.3 dBi. • 5 GHz: two built-in omnidirectional antennas, with peak antenna gain of 5.7 dBi.
Port	1 x 10/100/1000BASE-T port 1 x RJ45 console port (serial console port)
Status LED	1 x multi-color system status LED • AP power-on status • Software initialization status • Wireless user online status
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.
Dimensions (W x D x H)	Main unit: 194 mm x 194 mm x 37 mm (7.64 in. x 7.64 in. x 1.46 in.) Shipping: 460 mm x 360 mm x 242 mm (18.11 in. x 14.17 in. x 9.53 in.)
Weight	Main unit: 0.42 kg (1.0 lbs) Mounting bracket: 0.07 kg (0.2 lbs) Shipping: 0.87 kg (2.0 lbs)
Mounting	Wall/Ceiling-mount (a mounting bracket is delivered with the main unit)
Lock option	Kensington lock and securing latch
Input power supply	The AP supports the following two power supply modes: • 12 V DC/1.5 A power input over DC connector: The DC connector accepts 2.1 mm/5.5 mm center-positive circular plug. A DC power supply needs to be purchased independently. • PoE input over LAN 1: The power source equipment (PSE) complies with IEEE 802.3af standard (PoE). Note: If both DC power and PoE are available, DC power is preferred.
Maximum power consumption	Maximum power consumption: 12.95 W • DC power: 12.95 W • 802.3af (PoE): 12.95 W • Idle mode: 6 W

Hardware Specifications	RG-SAP750-SP
Environment	Storage temperature: –40°C to +70°C (–40°F to +158°F) Storage humidity: 5% RH to 95% RH (non-condensing) Storage altitude: 0 m to 3,000 m (0 ft. to 9,842.52 ft.) Operating temperature: –10°C to +50°C (14°F to 122°F) Operating humidity: 5% RH to 95% RH (non-condensing) Operating altitude: 0 m to 3,000 m (0 ft. to 9,842.52 ft.) Note: At an altitude in the range of 1,800–3,000 m (5,905.51–9,842.52 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F).
Mean Time Between Failure (MTBF)	200,000 hours (22 years) at the operating temperature of 25°C (77°F)
System memory	128 MB DRAM, 32 MB flash
Transmit power	2.4 GHz • Maximum transmit power: 26 dBm (398.11 mW) 5 GHz • Maximum transmit power: 26 dBm (398.11 mW) Note: • Adjusting the transmit power by percentage (recommended) and in 1dBm increments. • The transmit power is limited by local regulatory requirements. For details, see *WLAN Country or Region Codes and Channel Compliance.*

The following table lists the radio frequency performance of Wi-Fi including different frequency bands, protocols, and date rates. It is country-specific, and Ruijie Networks reserves the right of interpretation.

Radio Frequency Performance	RG-SAP750-SP		
Frequency Band and Protocol	Data Rate	Maximum Transmit Power per Transmit Chain	Maximum Receive Sensitivity per Receive Chain
2.4 GHz 802.11b	1 Mbps	23 dBm	–91 dBm
	2 Mbps	23 dBm	–89 dBm
	5.5 Mbps	23 dBm	–88 dBm
	11 Mbps	23 dBm	–85 dBm
2.4 GHz 802.11g	6 Mbps	23 dBm	–89 dBm
	24 Mbps	23 dBm	–80 dBm
	36 Mbps	21 dBm	–76 dBm
	54 Mbps	19 dBm	–70 dBm

Radio Frequency Performance	RG-SAP750-SP		
Frequency Band and Protocol	Data Rate	Maximum Transmit Power per Transmit Chain	Maximum Receive Sensitivity per Receive Chain
2.4 GHz 802.11n (HT20)	MCS0	21 dBm	–83 dBm
	MCS7	19 dBm	–65 dBm
2.4 GHz 802.11n (HT40)	MCS0	21 dBm	–80 dBm
	MCS7	18 dBm	–62 dBm
5 GHz 802.11a	6 Mbps	23 dBm	–89 dBm
	24 Mbps	23 dBm	–80 dBm
	36 Mbps	21 dBm	–76 dBm
	54 Mbps	19 dBm	–70 dBm
5 GHz 802.11n (HT20)	MCS0	20 dBm	–83 dBm
	MCS7	18 dBm	–65 dBm
5 GHz 802.11n (HT40)	MCS0	19 dBm	–80 dBm
	MCS7	18 dBm	–62 dBm
5 GHz 802.11ac (VHT20)	MCS0	20 dBm	–82 dBm
	MCS9	17 dBm	–57 dBm
5 GHz 802.11ac (VHT40)	MCS0	19 dBm	–79 dBm
	MCS9	16 dBm	–54 dBm
5 GHz 802.11ac (VHT80)	MCS0	19 dBm	–76 dBm
	MCS9	16 dBm	–51 dBm

Note Available frequency bands may vary with countries or regions. To use the above-mentioned frequency bands, ensure that they are supported in your country or region. For details, see *WLAN Country or Region Codes and Channel Compliance.*

Software Specifications

Software Specifications	RG-SAP750-SP
Basic Functions	
Applicable software version	AP_RGOS 11.1(9)B1P37 or later
WLAN	
Maximum number of associated STAs	256 • Radio 1: 2.4 GHz, up to 100 connected STAs • Radio 2: 5 GHz, up to 156 connected STAs
Practical maximum client count indication (per device)	75
Maximum number of BSSIDs	32 (up to 16 BSSIDs per radio)
Maximum number of WLAN IDs	16 Maximum number of associated STAs per WLAN: 256
STA management	SSID hiding Band steering Each SSID can be configured with the authentication mode, encryption mechanism, and VLAN attributes independently. Remote Intelligent Perception Technology (RIPT) Intelligent load balancing based on the STA quantity or traffic
STA limiting	SSID-based STA limiting Radio-based STA limiting
Bandwidth limiting	STA/SSID/AP-based rate limiting
CAPWAP	IPv4/IPv6 CAPWAP CAPWAP through NAT MTU setting and fragmentation over CAPWAP tunnels
Data forwarding	Centralized and local forwarding
Wireless roaming	Layer 2 and Layer 3 roaming
Wireless locating	MU and TAG device locating
Security and Authentication	
Authentication and encryption	Remote Authentication Dial-In User Service (RADIUS) PSK , web, 802.1x and MSCHAPv2 authentication SMS-based and QR code-based guest authentication, and MAB authentication (used with RG-WS series wireless controller) Data encryption: WEP (64/128 bits), WPA-Personal, WPA-Enterprise, WPA2-Personal (PSK, TKIP, CCMP), WPA2-Enterprise, WPA3-Personal (SAE, WPA2/WPA3 transition mode), WPA3-Enterprise (CCMP)
Data frame filtering	Allowlist, static blocklist, and dynamic blocklist

Software Specifications	RG-SAP750-SP
WIDS	User isolation Rogue AP detection and containment
ACL	IP standard ACL, MAC extended ACL, IP extended ACL, and expert-level ACL Time range-based ACL Inbound ACL based on Layer 2 interfaces Inbound ACL based on Layer 3 interfaces Inbound ACL based on wireless interfaces Dynamic ACL assignment based on 802.1X authentication (used with the AC)
CPP	CPU Protect Policy (CPP)
NFPP	Network Foundation Protection Policy (NFPP)
Routing and Switching	
MAC	Static and filtered MAC addresses MAC address table size: 1,024 Maximum number of static MAC addresses: 1,024 Maximum number of filtered MAC addresses: 1,024
Ethernet	Jumbo frame length: 1,518 Ethernet II IEEE802.1p and IEEE802.1Q
VLAN	Interface-based VLAN assignment Maximum number of CVIs: 40 Maximum number of SVIs: 40 Maximum number of VLANs: 4,094 VLAN ID range: 1–4,094
ARP	ARP entry aging, proxy ARP, and IP address conflict detection between downlink users Maximum number of ARP entries: 1,024 ARP check
IPv4 services	Static and DHCP-assigned IPv4 addresses Maximum number of IPv4 addresses configured on each Layer 3 interface: 200 NAT, FTP ALG and DNS ALG
IPv6 services	IPv6 addressing, Neighbor Discovery (ND), ICMPv6, IPv6 ping, IPv6 tracert Maximum number of IPv6 addresses configured on each Layer 3 interface: 16
IP routing	IPv4/IPv6 static route Maximum number of static IPv4 routes: 1,024 Maximum number of static IPv6 routes: 1,000
Multicast	Multicast, Multicast-to-unicast conversion
VPN	PPPoE client

Software Specifications	RG-SAP750-SP
Network Management and Monitoring	
Network management	SNMPv1/v2c/v3 Fault detection and alarm Information statistics and logging
Network management platform	Web management (Eweb)
User access management	Console, Telnet, SSH, FTP client, FTP server, and TFTP client
Switchover among Fat, Fit, and cloud modes	When the AP works in Fit mode, it can be switched to Fat mode through an AC. When the AP works in Fat mode, it can be switched to Fit mode through the console port or Telnet mode. When the AP works in cloud mode, it can be managed through WIS Cloud.

Value-added Software

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

Value-added Software	RG-SAP750-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-SAP750-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-SAP750-SP
Regulatory compliance	EN 55032, EN 55035, EN 61000-3-3, EN IEC 61000-3-2, IEC 62368-1, EN 62368-1, EN 301 489-1, EN 301 489-3, EN 301 489-17, EN 300 328, EN 301 893, EN 300 440, FCC Part 15, and EN IEC 62311

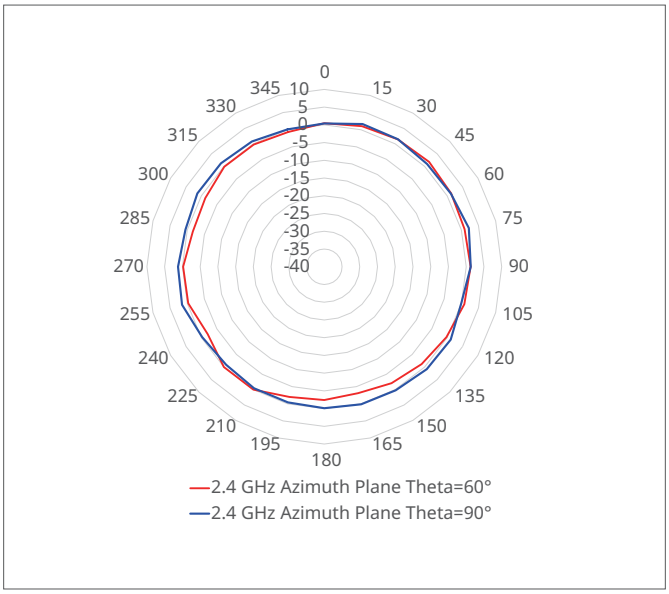
* For more country-specific regulatory information and approvals, contact your local sales agency.

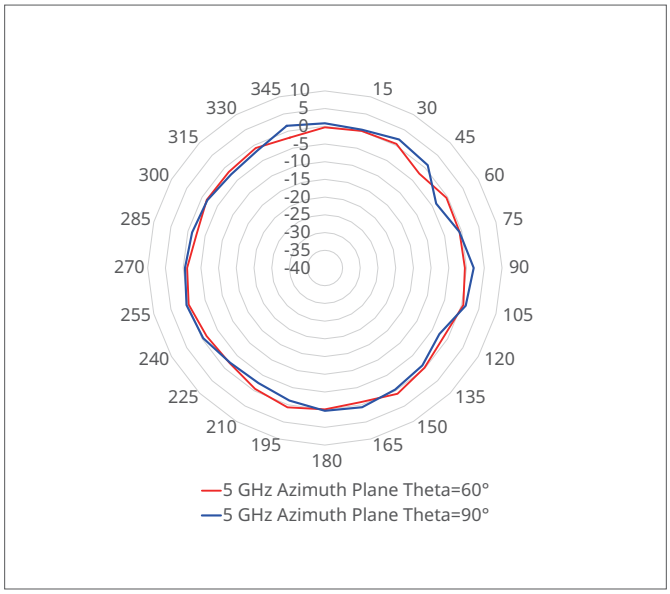
Note: Ruijie wireless products provide only secure and reliable network protocols and communication ports by default. For details, see *Ruijie Default Protocols and Ports for Wireless Products*. Proper firewall and security policies can be implemented based on this document to ensure the normal operation of wireless services.

Antenna Pattern Plots

Horizontal Planes (Top View)

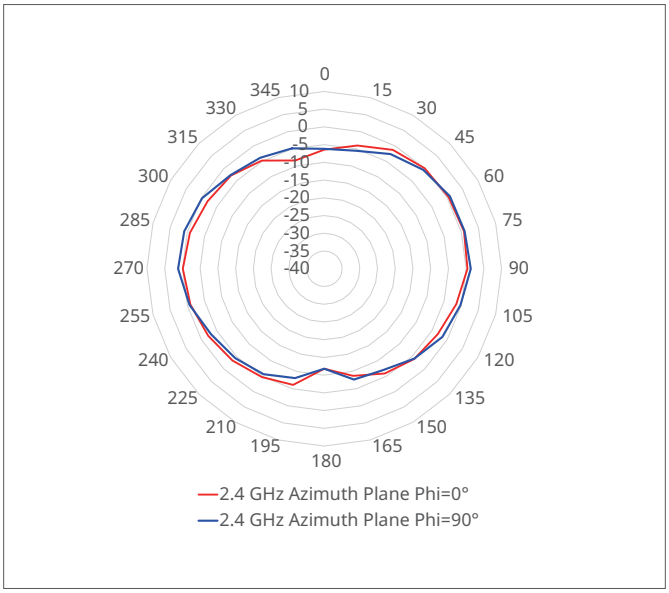
The following figures show the azimuth antenna pattern at 2.4 GHz and 5 GHz radios.

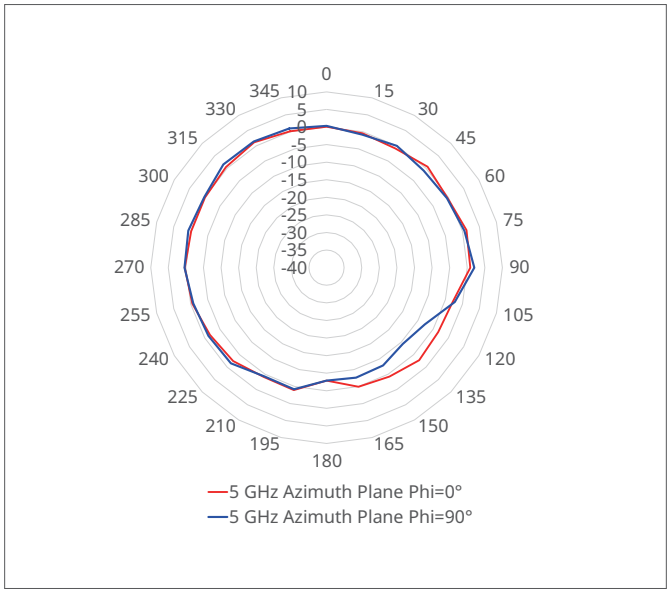




Vertical Planes (Side View, AP Facing Down)

The following figures shows the elevation antenna pattern at 2.4 GHz and 5 GHz radios.





Note: Operating frequency bands are country-specific.

Ordering Information

Model	Description
RG-SAP750-SP	Dual-radio indoor wireless access point Four spatial streams, peak data rate of 1.167 Gbps ● Radio 1: 2.4 GHz: two spatial streams, 2x2 MIMO, peak data rate of 300 Mbps ● Radio 2: 5 GHz: two spatial streams, 2x2 MU-MIMO, peak data rate of 867 Mbps Compliance with IEEE 802.11a/b/g/n and 802.11ac Wave2 standards Fat/Fit/Cloud mode switchover One uplink electrical port IEEE 802.3af-compliant (PoE) power supply and DC power supply Note: ● The power source equipment (PSE) needs to be purchased separately. ● The DC power supply needs to be purchased separately, and the output voltage/current must be 12 V/1.5 A.

Package Contents

Item	Quantity
RG-SAP750-SP AP	1
Mounting bracket	1
Key to the securing latch	1
Wall anchor	4
Cross recessed pan head self-tapping screw	4
Warranty Card and Hazardous Substance Table	1
Quick Installation Guide	1
Ruijie wireless product management software (pre-installed on the AP)	1

Warranty

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

- Warranty terms: https://www.ruijie.com/support/servicepolicy
- Warranty period: https://www.ruijie.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.ruijie.com/
- Online support: https://www.ruijie.com/support
- Hotline support: https://www.ruijie.com/support/hotline
- Email support: EBGITSC@ruijie.com.cn
- *WLAN Country or Region Codes and Channel Compliance:* https://www.ruijie.com/support/documents/slide_wlan-country-codes-overview
- *Ruijie Default Protocols and Ports for Wireless Products:* https://www.ruijie.com/en-global/support/documents/slide_wlan-network-protocol-port/

Ruijie Networks Co., Ltd.

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