



## **Access Point WiFi6 AX3000**

**DG-AP820-AX3000**



# 1. Product Overview

The RG-AP820-I is a Wi-Fi 6 wireless access point that integrates dual radios, high performance, and enterprise-grade encryption technology. Due to the hybrid cloud management mode and high-density 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.



## 2. Product Highlights



### Ultra-High Performance

- Dual-band design (2.4 GHz + 5 GHz), four spatial streams, 1024-Quadrature Amplitude Modulation (QAM) high-speed access, and up to 2.976 Gbps peak data rate, realizing high-speed wireless access experience
- Orthogonal Frequency-Division Multiple Access (OFDMA), Multi-User Multiple-Input Multiple-Output (MU-MIMO), and Wi-Fi Multimedia (WMM), increasing the average rate per user in high-density deployment environments
- 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

### Flexible Networking

- Local and cloud management modes, and intelligent wireless network optimization, reducing TCO and maximizing ROI
- Access through optical and Ethernet cables for flexible networking and high-speed backhaul over 2.5 Gbps optical links
- IEEE 802.11k/v/r support and roaming stickiness optimization, achieving seamless user roaming
- Rich IoT features: PoE output, Bluetooth 5.1, and wireless locating

### High Security and Reliability

- Encryption and authentication technologies including Wi-Fi Protected Access 3 (WPA3), enhanced open security, 802.1X, and Private Pre-shared Key (PPSK), enhancing data security
- 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
- Transmit beam-forming (TxBF) expands the signal coverage and enhances the reliability of specific devices, thereby improving the data rate
- Intelligent identification and monitoring, multicast-to-unicast conversion, and other features, enhancing network security and reliability



## 3. 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.



## Hotel Apartments

### Chain Hotels

By deploying a Wi-Fi network, travelers can enjoy convenient, high-speed Internet access to ensure a fulfilling stay.



## 4. Product Features

### Multi-scenario Adaptability

The RG-AP820-I, 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-AP820-I supports various wireless protocols, such as 802.11ax, 802.11ac Wave2, 802.11ac Wave1, and 802.11n. It features a hardware-independent dual-band design to deliver a data rate of up to 2.976 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-AP820-I 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-AP820-I 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-AP820-I can be mounted against a wall or ceiling, making space deployment and environmental requirements less challenging. This makes

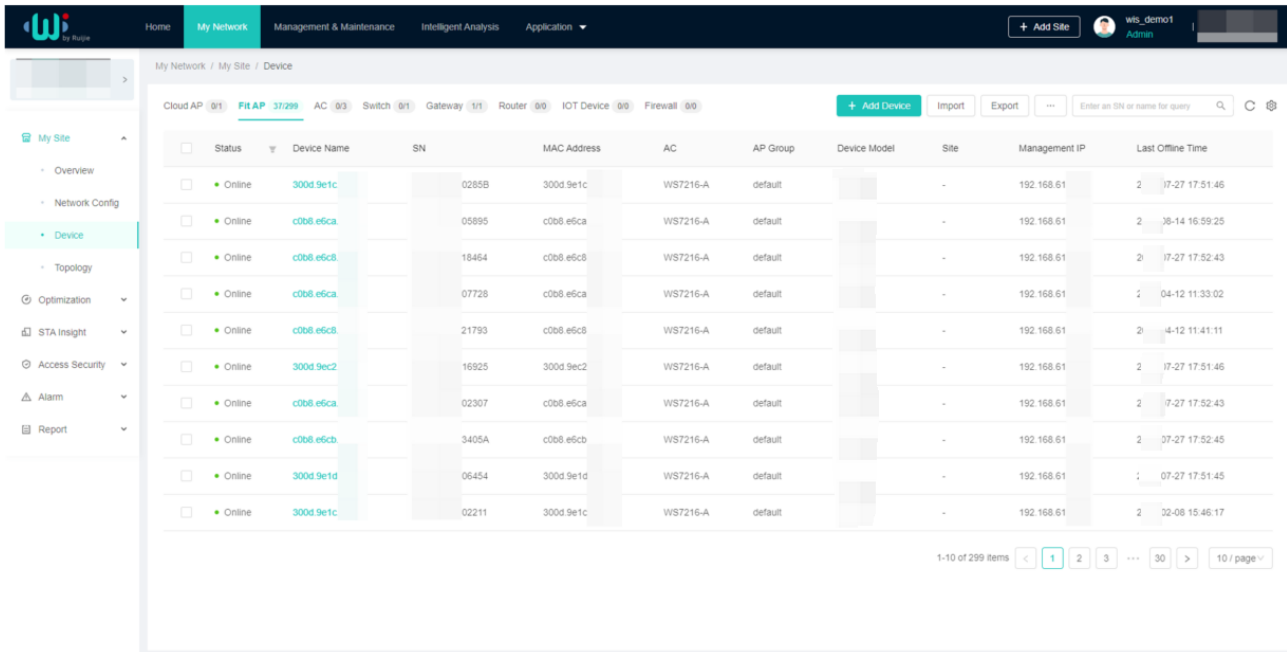
the RG-AP820-I particularly suitable for scenarios such as large campuses, conference centers, enterprise offices, and operation hotspots.

## 5. 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 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.



The screenshot displays the WIS Cloud Management Network Solution interface. The top navigation bar includes 'Home', 'My Network', 'Management & Maintenance', 'Intelligent Analysis', and 'Application'. The 'My Network' tab is active, showing a summary of network components: Cloud AP (9/1), FIT AP (31/299), AC (9/3), Switch (9/1), Gateway (1/1), Router (9/0), IOT Device (9/0), and Firewall (9/0). Below this, a table lists the devices, with columns for Status, Device Name, SN, MAC Address, AC, AP Group, Device Model, Site, Management IP, and Last Offline Time. The table shows 10 devices, all with a status of 'Online'. The left sidebar contains a navigation menu with options like 'My Site', 'Overview', 'Network Config', 'Device', 'Topology', 'Optimization', 'STA Insight', 'Access Security', 'Alarm', and 'Report'.

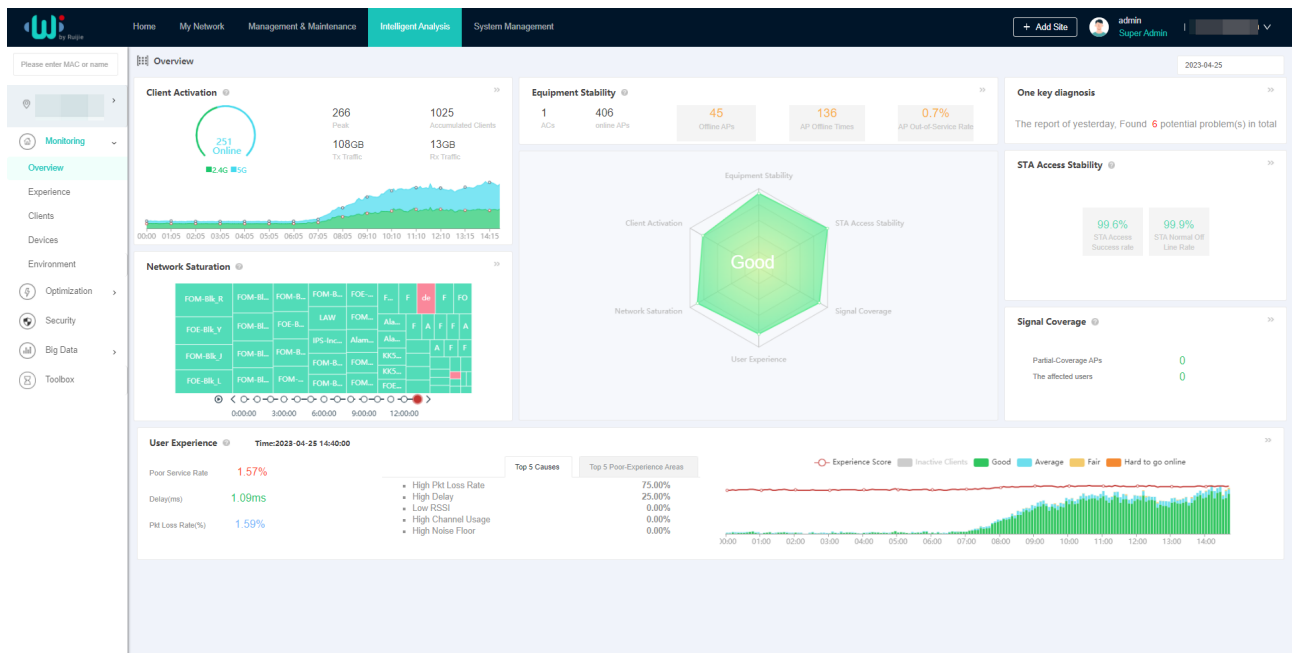
Status	Device Name	SN	MAC Address	AC	AP Group	Device Model	Site	Management IP	Last Offline Time
Online	300d.9e1c	0285B	300d.9e1c	WS7216-A	default		-	192.168.61	2 17-27 17:51:45
Online	c0b8.e6ca	05895	c0b8.e6ca	WS7216-A	default		-	192.168.61	2 16-14 16:59:25
Online	c0b8.e6c8	16454	c0b8.e6c8	WS7216-A	default		-	192.168.61	2 17-27 17:52:43
Online	c0b8.e6ca	07728	c0b8.e6ca	WS7216-A	default		-	192.168.61	1 04-12 11:33:02
Online	c0b8.e6c8	21793	c0b8.e6c8	WS7216-A	default		-	192.168.61	2 14-12 11:41:11
Online	300d.9ec2	16925	300d.9ec2	WS7216-A	default		-	192.168.61	2 17-27 17:51:45
Online	c0b8.e6ca	02307	c0b8.e6ca	WS7216-A	default		-	192.168.61	2 17-27 17:52:43
Online	c0b8.e6cb	3405A	c0b8.e6cb	WS7216-A	default		-	192.168.61	2 17-27 17:52:45
Online	300d.9e1d	06454	300d.9e1d	WS7216-A	default		-	192.168.61	1 07-27 17:51:45
Online	300d.9e1c	02211	300d.9e1c	WS7216-A	default		-	192.168.61	2 12-08 15:46:17

### 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:

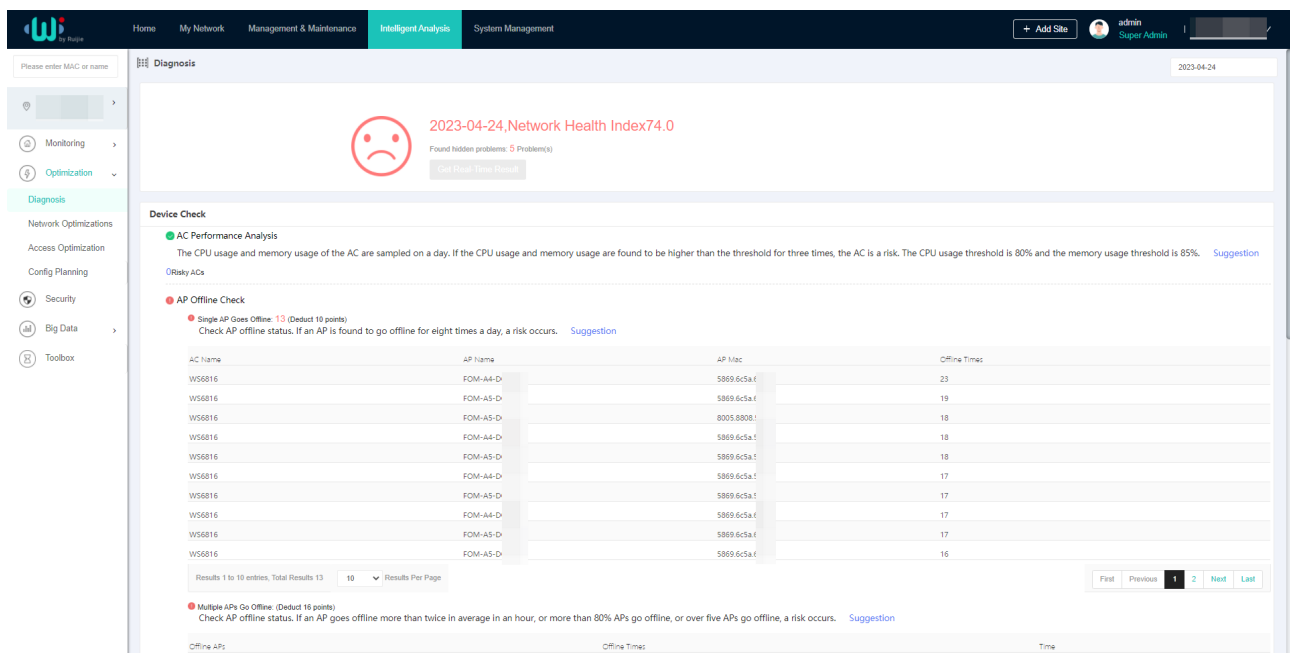
- Network basic information: device stability, device health, user stability, network signal coverage, and network association.
- User usage: user activity (network dependency), and user online experience and analysis.
- Network saturation: network capacity usage and channel usage.





## 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.



## 6. Specifications

### Hardware Specifications

Hardware Specifications	RG-AP820-I
802.11n	<p>Four spatial streams</p> <ul style="list-style-type: none"> <li>Radio 1 – 2.4 GHz: 2x2 MIMO, two spatial streams</li> <li>Radio 2 – 5 GHz: 2x2 MIMO, two spatial streams</li> </ul> <p>Channels:</p> <ul style="list-style-type: none"> <li>Radio 1 – 2.4 GHz: 20 MHz and 40 MHz</li> <li>Radio 2 – 5 GHz: 20 MHz and 40 MHz</li> </ul> <p>Combined peak data rate: 600 Mbps</p> <ul style="list-style-type: none"> <li>Radio 1 – 2.4 GHz: 6.5 Mbps to 300 Mbps (MCS0 to MCS15 )</li> <li>Radio 2 – 5 GHz: 6.5 Mbps to 300 Mbps (MCS0 to MCS31)</li> </ul> <p>Radio technologies: Orthogonal Frequency-Division Multiplexing (OFDM)</p> <p>Modulation types: BPSK, QPSK, 16-QAM, 64-QAM</p> <p>Packet aggregation:</p> <ul style="list-style-type: none"> <li>Aggregate MAC Protocol Data Unit (A-MPDU)</li> <li>Aggregate MAC Service Data Unit (A-MSDU)</li> </ul> <p>Dynamic Frequency Selection (DFS)</p> <p>Cyclic Delay/Shift Diversity (CDD/CSD)</p> <p>Maximum Ratio Combining (MRC)</p> <p>Space-Time Block Coding (STBC)</p> <p>Low-Density Parity Check (LDPC)</p> <p>Transmit beam-forming (TxBF)</p>
802.11ac	<p>Two spatial streams</p> <ul style="list-style-type: none"> <li>Radio 2 – 5 GHz: 2x2 MIMO, two spatial streams</li> </ul> <p>Channels:</p> <ul style="list-style-type: none"> <li>Radio 2 – 5 GHz: 20 MHz, 40 MHz, 80 MHz, and 160 MHz</li> </ul> <p>Combined peak data rate: 1.732 Gbps</p> <ul style="list-style-type: none"> <li>Radio 2 – 5 GHz: 6.5 Mbps to 1.732 Gbps (MCS0 to MCS9)</li> </ul> <p>Radio technologies: Orthogonal Frequency-Division Multiplexing (OFDM)</p> <p>Modulation types: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM</p> <p>Packet aggregation:</p> <ul style="list-style-type: none"> <li>Aggregate MAC Protocol Data Unit (A-MPDU)</li> <li>Aggregate MAC Service Data Unit (A-MSDU)</li> </ul> <p>Dynamic Frequency Selection (DFS)</p> <p>Cyclic Delay/Shift Diversity (CDD/CSD)</p> <p>Maximum Ratio Combining (MRC)</p> <p>Space-Time Block Coding (STBC)</p> <p>Low-Density Parity Check (LDPC)</p> <p>Transmit beam-forming (TxBF)</p>

Hardware Specifications	RG-AP820-I
802.11ax	<p>Four spatial streams</p> <ul style="list-style-type: none"> <li>Radio 1 – 2.4 GHz: 2x2 uplink/downlink MU-MIMO, two spatial streams</li> <li>Radio 2 – 5 GHz: 2x2 uplink/downlink MU-MIMO, two spatial streams</li> </ul> <p>Channels:</p> <ul style="list-style-type: none"> <li>Radio 1 – 2.4 GHz: 20 MHz and 40 MHz</li> <li>Radio 2 – 5 GHz: 20 MHz, 40 MHz, 80 MHz, and 160 MHz</li> </ul> <p>Combined peak data rate: 2.976 Gbps:</p> <ul style="list-style-type: none"> <li>Radio 1 – 2.4 GHz: 8.6 Mbps to 0.574 Gbps (MCS0 to MCS11)</li> <li>Radio 2 – 5 GHz: 8.6 Mbps to 2.402 Gbps (MCS0 to MCS11)</li> </ul> <p>Radio technologies: uplink/downlink Orthogonal Frequency-Division Multiple Access (OFDMA)</p> <p>Modulation types: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM</p> <p>Packet aggregation:</p> <ul style="list-style-type: none"> <li>Aggregate MAC Protocol Data Unit (A-MPDU)</li> <li>Aggregate MAC Service Data Unit (A-MSDU)</li> </ul> <p>Dynamic Frequency Selection (DFS)</p> <p>Cyclic Delay/Shift Diversity (CDD/CSD)</p> <p>Maximum Ratio Combining (MRC)</p> <p>Space-Time Block Coding (STBC)</p> <p>Low-Density Parity Check (LDPC)</p> <p>Transmit beam-forming (TxBF)</p> <p>WPA3</p>
Antenna	<p>Wi-Fi</p> <ul style="list-style-type: none"> <li>2.4 GHz: two built-in omnidirectional smart antennas, the max. antenna gain is 2 dBi.</li> <li>5 GHz: two built-in omnidirectional smart antennas, the max. antenna gain is 2 dBi.</li> </ul> <p>Bluetooth</p> <ul style="list-style-type: none"> <li>One onboard omnidirectional antenna, the max. antenna gain is 2.4 dBi.</li> </ul>
Port	<p>1 x 10/100/1000Base-T RJ45 Ethernet port with auto-negotiation</p> <p>1 x 2.5GE combo SFP port (10/100/1000Base-T electrical port), compatible with 1GE SFP</p> <p>1 x RJ45 console port (serial console port)</p> <p>1 x Bluetooth 5.1</p>
Status LED	<p>1 x multi-color system status LED</p> <ul style="list-style-type: none"> <li>AP power-on status</li> <li>Software initialization status and upgrade status</li> <li>Uplink service interface status</li> <li>Wireless user online status</li> <li>CAPWAP tunnel timeout</li> <li>Specific AP locating</li> </ul>
Button	<p>1 x Reset button</p>



Hardware Specifications	RG-AP820-I
	<ul style="list-style-type: none"> <li>Press the button for shorter than 2 seconds. Then the device restarts.</li> <li>Press the button for longer than 5 seconds. Then the device restores to factory settings.</li> </ul>
Dimensions (W x D x H)	Main unit: 220 mm x 220 mm x 49 mm (8.66 in. x 8.66 in x 1.93 in.) Shipping: 507 mm x 319 mm x 278 mm (19.96 in. x 12.56 in. x 10.94 in.)
Weight	Main unit: 0.6 kg (1.33 lbs) Mounting bracket: 0.2 kg (0.44 lbs) Shipping: 1.04 kg (2.29 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: <ul style="list-style-type: none"> <li>48 V/0.6 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.</li> <li>PoE input over LAN 1: The power source equipment (PSE) complies with IEEE 802.3af standard (PoE).</li> </ul> Note: If both DC power and PoE are available, DC power is preferred.
Power consumption	Maximum power consumption: 12.95 W <ul style="list-style-type: none"> <li>DC power: 12.95 W</li> <li>802.3bt (PoE++): 12.95 W</li> <li>802.3at (PoE+): 12.95 W</li> <li>802.3af (PoE): 12.95 W</li> <li>Idle mode: 6 W</li> </ul>
Environment	Storage temperature: -40°C to +70°C (-40°F to +158°F) Storage humidity: 0% RH to 95% RH (non-condensing) Operating temperature: -10°C to +50°C (14°F to 122°F) Operating humidity: 0% RH to 95% RH (non-condensing) At an altitude between 3,000 m (9,842.52 ft.) and 5,000 m (16,404.20 ft.), every time the altitude increases by 166 m (546.81 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	512 MB DRAM, 128 MB flash
Max. transmit power	2.4 GHz: 26 dBm (398 mW) 5 GHz: 26 dBm (398 mW) Note: <ul style="list-style-type: none"> <li>Adjusting the transmit power by percentage (recommended) and in 1dBm increments</li> <li>The transmit power is limited by local regulatory requirements.</li> </ul>

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

Radio Frequency Performance	RG-AP820-I		
Frequency Band and Protocol	Data Rate	Max. Transmit Power per Transmit Chain	Max. Receive Sensitivity per Receive Chain
2.4 GHz 802.11b	1 Mbps	23 dBm	-91 dBm
	2 Mbps	23 dBm	-91 dBm
	5.5 Mbps	23 dBm	-90 dBm
	11 Mbps	23 dBm	-87 dBm
2.4 GHz 802.11g	6 Mbps	23 dBm	-89 dBm
	24 Mbps	22 dBm	-82 dBm
	36 Mbps	22 dBm	-78 dBm
	54 Mbps	20 dBm	-72 dBm
2.4 GHz 802.11n (HT20)	MCS0	23 dBm	-85 dBm
	MCS7	19 dBm	-67 dBm
2.4 GHz 802.11n (HT40)	MCS0	23 dBm	-82 dBm
	MCS7	19 dBm	-64 dBm
2.4 GHz 802.11ax (HE20)	MCS0	23 dBm	-85 dBm
	MCS11	15 dBm	-58 dBm
2.4 GHz 802.11ax (HE40)	MCS0	23 dBm	-82 dBm
	MCS11	15 dBm	-54 dBm
5 GHz 802.11a	6 Mbps	23 dBm	-89 dBm
	24 Mbps	22 dBm	-82 dBm
	36 Mbps	22 dBm	-78 dBm
	54 Mbps	20 dBm	-72 dBm
5 GHz 802.11n (HT20)	MCS0	23 dBm	-85 dBm
	MCS7	19 dBm	-67 dBm
5 GHz 802.11n (HT40)	MCS0	23 dBm	-82 dBm
	MCS7	19 dBm	-64 dBm
5 GHz 802.11ac (VHT20)	MCS0	23 dBm	-85 dBm
	MCS9	18 dBm	-60 dBm
5 GHz 802.11ac (VHT40)	MCS0	23 dBm	-82 dBm
	MCS9	18 dBm	-57 dBm
5 GHz 802.11ac (VHT80)	MCS0	23 dBm	-79 dBm
	MCS9	18 dBm	-53 dBm

Radio Frequency Performance	RG-AP820-I		
Frequency Band and Protocol	Data Rate	Max. Transmit Power per Transmit Chain	Max. Receive Sensitivity per Receive Chain
5 GHz 802.11ax (HE20)	MCS0	23 dBm	–85 dBm
	MCS11	16 dBm	–58 dBm
5 GHz 802.11ax (HE40)	MCS0	23 dBm	–82 dBm
	MCS11	16 dBm	–54 dBm
5 GHz 802.11ax (HE80)	MCS0	23 dBm	–79 dBm
	MCS11	16 dBm	–52 dBm
5 GHz 802.11ax (HE160)	MCS0	23 dBm	–77 dBm
	MCS11	16 dBm	–50 dBm

## Software Specifications

### Basic Functions

Basic Function	RG-AP820-I
Applicable software version	RGOS11.9(6)W1B4 or higher
<b>WLAN</b>	
Max. number of associated STAs	256 (up to 128 STAs per radio)
Max. number of BSSIDs	32 (up to 16 BSSIDs per radio)
WLAN service	Max. number of WLAN IDs: 16 Max. number of associated STAs per WLAN: 32
STA management	SSID hiding Each SSID can be configured with the authentication mode, encryption mechanism, and VLAN attributes independently. Remote Intelligent Perception Technology (RIPT) Intelligent STA identification technology 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 Encryption over CAPWAP data channels Encryption over CAPWAP control channels



Basic Function	RG-AP820-I
Data forwarding	Centralized and local forwarding
Wireless roaming	Layer 2 and Layer 3 roaming
Wireless locating	MU device locating
Security and Authentication	
Authentication and encryption	Remote Authentication Dial-In User Service (RADIUS) PSK and web authentication QR code-based guest authentication, SMS authentication, and MAC address bypass (MAB) authentication (used with RG-WS series ACs) Data encryption: WEP (64/128 bits), WPA-TKIP, WPA-PSK, WPA2-AES
Data frame filtering	Allowlist, static blocklist, and dynamic blocklist
WIDS	Wireless Intrusion Detection System(WIDS) User isolation Rogue AP detection and containment
ACL	IP standard ACL, MAC extended ACL, IP extended ACL, and expert-level ACL IPv6 ACL Time range-based ACL ACL based on a Layer 2 interface ACL based on a Layer 3 interface Ingress ACL based on a wireless interface ACL Remark 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 Max. number of static MAC addresses: 1,024 Max. number of filtered MAC addresses: 1,024
Ethernet	Jumbo frame length: 1,518 Ethernet II frame format 1000M SFP ports 2.5GE interfaces
VLAN	Interface-based VLAN assignment Max. number of SVIs (IPv4): 200 Max. number of SVIs (IPv6): 200 Max. number of VLANs: 4,094

Basic Function	RG-AP820-I
	VLAN ID range: 1–4,094
ARP	ARP entry aging, gratuitous ARP learning, and proxy ARP Max. number of ARP entries: 1,024 ARP check
IPv4 services	Static and DHCP-assigned IPv4 addresses Max. 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 tracer IPv6 DHCP client Max. number of IPv6 addresses configured on each Layer 3 interface: 400 Max. number of ND entries: 4,096
IP routing	IPv4/IPv6 static route Max. number of static IPv4 routes: 1,024 Max. number of static IPv6 routes: 1,000
Multicast	Multicast-to-unicast conversion
VPN	PPPoE client IPsec VPN
Network Management and Monitoring	
Network management	Fault detection and alarm Information statistics and logging
Network management platform	Web management (Eweb) RG-WS series wireless controller and Ruijie Cloud Wireless marketing: WMC/MCP
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 Ruijie 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-AP820-I
Intelligent O&M	

Value-added Software	RG-AP820-I
Experience	<p>Network operation analysis, such as device stability and signal coverage</p> <p>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</p> <p>Statistics on the number of online and offline failures of STAs associated with different APs, average signal strength, and other parameters</p> <p>VIP monitoring and alarm, and custom alarm thresholds</p> <p>STA global experience map and experience coverage evaluation based on the time range</p> <p>STA access protocol replay and fine-grained STA fault diagnosis</p> <p>Note: To support the preceding functions, ensure that the AP works in Fit mode.</p>
Network optimization	<p>Network performance optimization, including one-click network optimization and scenario-based optimization</p> <p>Client steering to cope with roaming stickiness, and experience indicator comparison</p> <p>Client steering to cope with remote association, and experience indicator comparison</p> <p>One-click diagnosis – analyzing problems and providing suggestions</p>
Big data	<p>Baseline analysis – recording the configuration, version, and other changes, and tracking network KPI changes</p> <p>Time capsule – analyzing the device version and configuration change history</p>
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
<b>Cloud Management</b>	
Management and maintenance	<p>Uniformly connecting, managing, and maintaining APs, ACs, and other devices, batch device configuration and upgrade, and other functions</p> <p>Deployment through Zero Touch Provisioning (ZTP) – creating configuration templates and automatically applying configured templates</p> <p>One-click discovery of the wired and wireless network topology and topology generation</p>
<b>Cloud Authentication</b>	
Authentication mode	<p>SMS authentication, fixed account authentication, one-click authentication, Facebook authentication, Instagram authentication, voucher authentication, and other authentication modes</p> <p>Authentication implemented in the cloud, without the need to deploy the local authentication server</p>
Customized portal	Customized Portal authentication page for mobile phones and PCs



Value-added Software	RG-AP820-I
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.

## Certifications and Regulatory Compliance

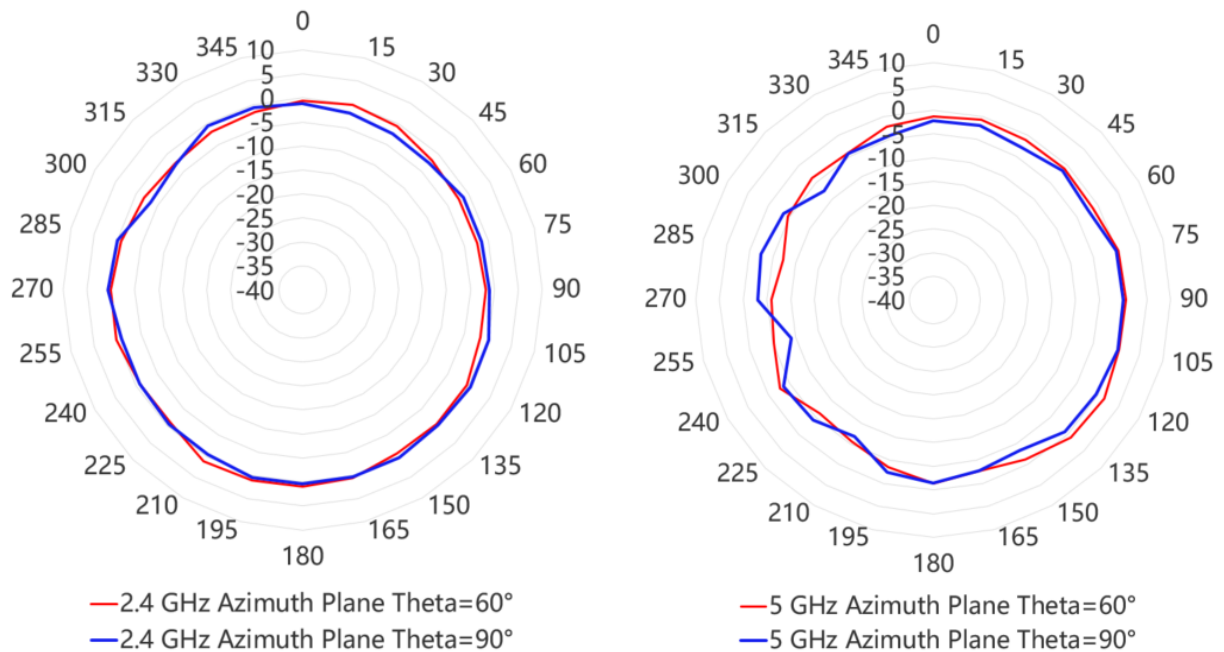
Certifications and Regulatory Compliance	RG-AP820-I
Regulatory compliance	EN 300 328, EN 301 489-1, EN 301 489-17, EN 301 893 EN 55032, EN 55035, IEC EN 62311, IEC 62368-1, EN 62368-1 GB 4943.1, GB/T 17618, GB/T 19286
Certification	Wi-Fi Alliance: <ul style="list-style-type: none"> <li>● 2.4 GHz, 5 GHz Spectrum Capabilities</li> <li>● Wi-Fi CERTIFIED a, b, g, n, ac, ax (6)</li> <li>● WPA2™-Enterprise 2018-04</li> <li>● WPA2™-Personal 2021-01</li> <li>● WPA3™-Enterprise 2020-02</li> <li>● WPA3™-Personal 2020-12</li> <li>● WPA™-Enterprise</li> <li>● WPA™-Personal</li> <li>● WMM®, Wi-Fi Agile Multiband™</li> </ul>

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

## 7. Antenna Pattern Plots

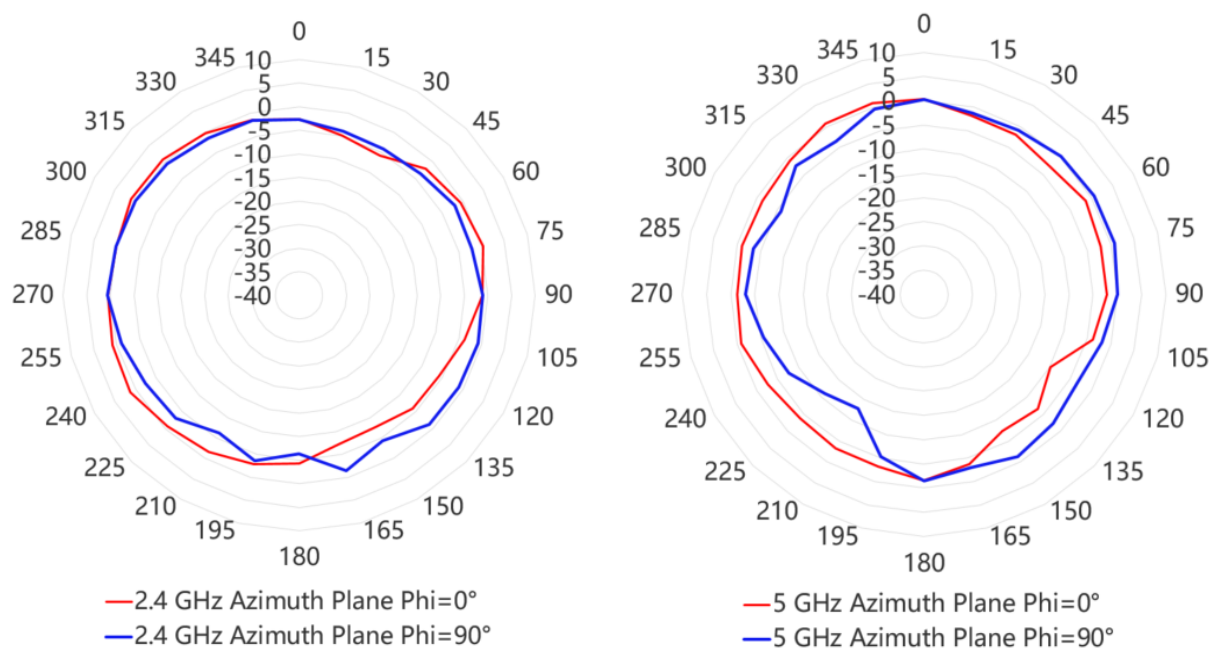
### Horizontal Planes (Top View)

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.

## 8. Ordering Guide

Perform the following steps to configure an RG-AP820-I:

- Select the RG-AP820-I.
- If the uplink switch supports PoE power, connect the PoE switch to the AP's uplink port to provide power for the AP.
- If the uplink switch does not support PoE power, purchase Ruijie's PoE Power Injector RG-E-120(GE), with the Data In end of the interface connected to the switch and the Data & Power Out end connected to the AP uplink port to supply power to the AP.
- If the uplink switch does not support PoE power, you can also purchase a DC power module from a third-party vendor to supply power to the AP through the DC power connector.

## 9. Ordering Information

Model	Description
RG-AP820-I	<p>Wi-Fi 6 (802.11ax) indoor wireless access point</p> <p>Dual radios, four spatial streams, peak data rate of 2.976 Gbps</p> <ul style="list-style-type: none"> <li>● Radio 1: 2.4 GHz: two spatial streams, 2x2 MU-MIMO, peak data rate of 574 Mbps</li> <li>● Radio 2: 5 GHz: two spatial streams, 2x2 MU-MIMO, peak data rate of 2.4 Gbps</li> </ul> <p>802.11a/b/g/n/ac/ax, switching between Fat, Fit, and cloud modes, and 802.3af PoE and local DC power supply</p> <p>Note:</p> <ul style="list-style-type: none"> <li>● The power source equipment (PSE) needs to be purchased separately. The PoE Power Injector can be purchased from Ruijie.</li> <li>● The DC power module has to be purchased separately from a third party. The output voltage/current must be 54 V/1.1 A.</li> </ul>
DG-POE-AF	Single PoE Power Injector with 1000BASE-T support, supporting 802.3af 15W
DG-POE-AT	Single PoE Power Injector with 1000BASE-T support, supporting 802.3at 30W
DG-1G-SX-MM850	1000BASE-SX mini-GBIC module
DG-1G-LX-SM1310	1000BASE-LX mini-GBIC module
DG-MG-SX-MM850	SFP 2.5G BIDI Transceiver-TX1310/RX1550, 3 km, LC
DG-MG-LX-SM1310	SFP 2.5G BIDI Transceiver-TX1550/RX1310, 3 km, LC

## 10. Package Contents

Item	
Main unit	1
Mounting bracket	1
Wall anchor	2
M4 x 20 mm Phillips pan head self-tapping screw	4
<i>Warranty Card and Hazardous Substance Table</i>	1
<i>Hardware Installation and Reference Guide</i>	1

## 11. Warranty

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

- Warranty terms: <https://datageneral.co/warranty-policy>

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

## 12. More Information

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

- Data General official website: <https://www.datageneral.co>
- Support: <https://www.datageneral.co/support>
- Email support: [support@datageneral.co](mailto:support@datageneral.co)

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1201 North Market Street, Suite 111  
Wilmington, DE 19801 (P) USA  
Tel. +1 (302) 800-0910  
<https://www.datageneral.co>