



# RG-AP840-L

Wi-Fi 6 Indoor  
High-density Access Point

# 01

## Product Overview

The RG-AP840-L is an 802.11ax-compliant dual-radio wireless access point (AP) provided by Ruijie Networks for general education, higher education, government, finance, business, and other indoor scenarios.

It complies with 802.11ax, 802.11ac Wave2, 802.11ac Wave1, and 802.11n. With a hardware-independent dual-radio design, the RG-AP840-L can provide a data rate of up to 5.378 Gbps. The ultra-fast wireless rate eliminates the performance bottleneck.

The design of the RG-AP840-L considers factors such as wireless network security, radio control, mobile

access, QoS, seamless roaming, and Internet of Things (IoT) scalability. With Ruijie's wireless access controller (AC), the RG-AP840-L can implement wireless client data forwarding, security features, access control, and IoT application extension.

The RG-AP840-L supports both local power supply and Power over Ethernet (PoE), so customers can flexibly select the power supply. It can be installed against a wall or ceiling, which is suitable for deployment in scenarios such as large campuses, conference centers, plazas, enterprise offices, and operational hotspots.

# 02

## Product Appearance



# 03

## Product Highlights

- Dual-band design (2.4 GHz + 5 GHz), six spatial streams, and up to 5.378 Gbps peak data rate
- 5 Gbps wired data rate to achieve high-speed wireless data backhaul, and access through optical and Ethernet cables for flexible networking
- OFDMA and MU-MIMO, optimizing multi-user access experience
- IEEE 802.11k/v/r support, roaming stickiness optimization, and remote association for better user experience
- WPA3, Enhanced Open Security, 802.1X, MSCHAPv2, and other encryption authentication to enhance data security
- Local and cloud management (free for life) modes, and intelligent wireless network optimization, reducing TCO and maximizing ROI
- Rich IoT features: PoE output, Bluetooth 5.1, and wireless locating

# 04

## Product Features

### Multiple Service Ports

The RG-AP840-L supports up to 5 Gbps wired access.

- One auto-negotiation Ethernet electrical port provides up to 5 Gbps wired access to implement high-speed transmission and conversion between wireless and wired networks.
- One auto-negotiation Ethernet electrical port provides up to 1 Gbps wired access to achieve high-speed transmission and conversion between wireless and wired networks. Furthermore, it can expand other modules such as the IoT module to adapt to more application scenarios.
- One 5GE SFP port can adapt to different link types of a wired network and transmit data.

### High-speed Wireless Access for Better Experience

The RG-AP840-L optimizes user experience by maximizing Wi-Fi utilization and substantially reducing airtime competition between clients. It provides Orthogonal Frequency-Division Multiple Access (OFDMA) and Multi-User Multiple-Input Multiple-Output (MU-MIMO). With up to 4 spatial streams (4SS) and 160 MHz channel bandwidth (HE160), the RG-AP840-L delivers the data rate of up to 4.804 Gbps at 5 GHz band, providing pioneering wireless capabilities for enterprises.

#### 1024-QAM High-Speed Access

The RG-AP840-L adopts the dual-radio design and complies with Wi-Fi standard IEEE 802.11ax. When dual radios are enabled, it can provide a wireless data rate of up to 5.378 Gbps to realize high-speed access experience.

#### OFDMA High-Density User Access

OFDMA in IEEE 802.11ax enables the RG-AP840-L to divide a WLAN channel into multiple narrower sub-channels, with each user occupying one or more sub-channels. The RG-AP840-L can schedule services of multiple users, and receive and send packets concurrently. This reduces contention for air interface resources and backoff, shortens the network latency, and improves the network efficiency.

### MU-MIMO

The RG-AP840-L maximizes the use of MU-MIMO, which can effectively improve the throughput of a wireless network by exchanging data with multiple single-stream or dual-stream client devices simultaneously.

### Seamless Switching

The RG-AP840-L supports Hotspot 2.0 of Wi-Fi Association (WFA) and automatic identity recognition, providing clients with seamless cellular-to-Wi-Fi switching.

### Diverse Wi-Fi Technologies

It supports RF transmission technologies:

- Dynamic frequency selection (DFS) optimizes the use of available RF spectrum to prevent radar channel interference.
- Cyclic delay/shift diversity (CDD/CSD) improves downlink RF performance, and converts spatial diversity to frequency diversity to avoid intersymbol interference, thus reducing bit error rate (BER) and effectively reducing signal distortion.
- Maximum ratio combining (MRC) improves the signal quality at the receiving end and enhances reliability and performance of received signals.

It supports RF channel coding technologies:

- Space-time block coding (STBC) increases the range and improves signal receiving, and enhances reliability of data transmission.
- Low-density parity check (LDPC) corrects errors efficiently and improves the throughput.
- Transmit beam-forming (TxBF) expands the signal coverage and enhances the reliability of specific devices, thereby improving the data rate.

### Intelligent Optimization, Reliability Guarantee

#### Intelligent Recognition, One-Click Network Optimization

The RG-AP840-L can intelligently identify mobile clients such as iOS and Android clients and PCs. It can be used to implement visualized wireless

network management based on the wireless client type and optimize a network in one-click mode. The RG-AP840-L embeds client experience measurement and environment collection capability. It can be used with the RG-WS wireless access controller for intelligent analysis and automatic RF resource scheduling. It can adjust the RF power and intelligently allocate channels to solve problems such as co-channel interference, adjacent channel interference, and roaming stickiness.

### Intelligent Local Forwarding

The RG-AP840-L integrates intelligent local forwarding technology and eliminates the traffic bottleneck on its connected wireless access controller. The data forwarding mode of the RG-AP840-L can be flexibly pre-configured through Ruijie's wireless access controller. Then the RG-AP840-L determines whether data needs to be forwarded by the wireless access controller or be sent to a wired network for data exchange based on the SSID or user VLAN.

With the local forwarding technology, the RG-AP840-L classifies the data that is sensitive to the delay and requires real-time high-performance transmission, and forwards it through a wired network. This greatly relieves the traffic burden of the wireless access controller and better adapts to heavy-traffic transmission on 802.11ax networks.

### Client Access Optimization

The RG-AP840-L can dynamically measure parameters such as the uplink Received Signal Strength Indicator (RSSI), noise floor, and channel utilization to intelligently identify the client network status. Moreover, it can steer clients to preferentially connect to 5 GHz or APs with better experience. This solves the problems of roaming stickiness, remote association, and load imbalance, and improves user experience.

### Advanced Network Coexistence

The RG-AP840-L supports advanced network coexistence. It uses the built-in filter to automatically minimize the impact of interference from non-Wi-Fi network devices.

### Abundant QoS Policies

The RG-AP840-L provides abundant QoS policies. It supports bandwidth limiting based on the WLAN, AP, and STA, and provides Wi-Fi Multimedia (WMM) that defines priorities for different service data. Therefore, it

implements immediate and quantitative transmission of audio and video data, and guarantees smooth application of multimedia services.

The multicast-to-unicast technology supported by the RG-AP840-L solves the video freezing problem caused by packet loss or long latency in Video on Demand (VoD) and other multicast applications on a wireless network. It enhances the experience in the use of multicast video services on a wireless network.

## Intelligent Monitoring, Green Design, and Power Saving

### Intelligent Power Monitoring

The RG-AP840-L can monitor the PoE output power and disable or enable some functions according to the available power to ensure its normal operation.

- When powered by 802.3at, the RG-AP840-L starts up normally, but its downlink port and USB port cannot provide power for external devices.
- When powered by 802.3af, the RG-AP840-L starts up normally. Both RF cards can only work in one-stream mode, and the downlink port and USB port cannot provide power for external devices.

### Energy Saving and Lower Power Consumption

The RG-AP840-L incorporates new energy saving technologies, such as packet-based power control technology. With this technology as well as high-performance power design, the RG-AP840-L is energy-efficient while providing high-speed wireless access services.

### Rich IoT Platform Features

The RG-AP840-L integrates Bluetooth 5.1 and 802.15.4 RF (ZigBee support) to simplify deployment and management of IoT-based location services, asset tracking services, security solutions, and IoT sensors.

The RG-AP840-L supports PoE output, providing flexible expansion and reliable power supply for IoT devices such as IP phones, cameras, set-top boxes (STBs), and smart audio devices. This eliminates re-cabling in the ELV room and dependence on AC power.

## Comprehensive Security Protection and Ease of Use

### Comprehensive Wireless Security Protection

The RG-AP840-L supports WEP (64/128 bits), WPA-TKIP, WPA-PSK, WPA2-AES, WPA3 authentication and encryption methods. The WPA3 types include WPA3-

Personal (SAE), WPA3-Personal mixed mode, WPA3-Enterprise (CCMP, 128 bits), WPA3-Enterprise (GCMP, 192 bits), WPA3-Enterprise mixed mode, WPA3-OWE, and WPA3-OWE mixed mode.

The RG-AP840-L used with the RG-WS series wireless access controller can provide a series of wireless security protection functions such as anti-ARP spoofing, and DHCP protection, to build a secure and reliable wireless network.

### Multiple Easy-to-Use Authentication Modes

Together with Ruijie authentication system or multi-service AC, the RG-AP840-L supports a variety of efficient and easy authentication modes such as web, 802.1X, MSCHAPv2, MAC address bypass (MAB), SMS, and QR code-based guest authentication. It conforms to the principle of authentication security upon network access.

MAB authentication frees the client from entering the username and password repeatedly. The username and password are required only upon the first login.

When a guest accesses a wireless network through SMS authentication, an authentication page pops up. On the authentication page, a guest can register an account using the mobile number, and accesses the Internet using the username and password in the SMS received.

QR code-based authentication is easy for guests to access the Internet. After accessing a wireless network, guests can receive a QR code prompt. They can access the network after being authorized by the visited employee, providing better security.

### Flexible Device Management Modes

### Flexible Switching Between Fat, Fit, and Cloud Modes

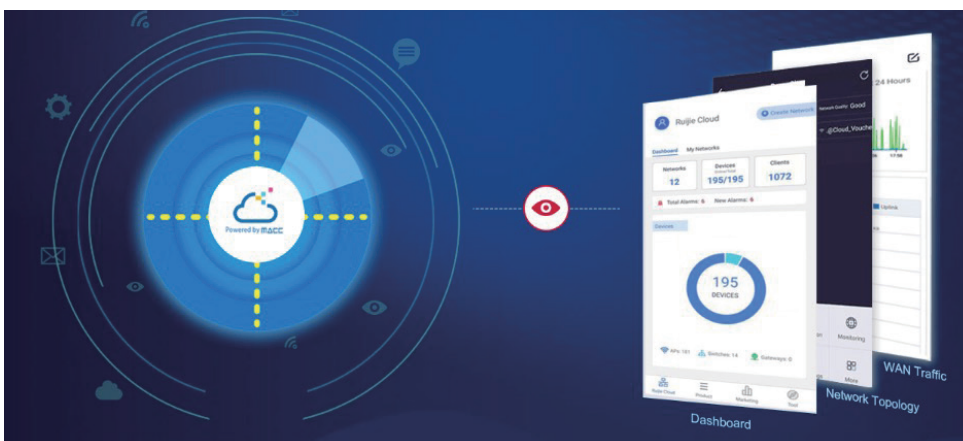
The RG-AP840-L supports flexible switchover among Fat, Fit, and cloud deployment modes. When the RG-AP840-L is deployed in Fat and cloud mode, it can operate as a single device and be managed by the local access controller (AC). It can also be connected to the Ruijie public cloud for cloud-based management. When the RG-AP840-L is deployed in Fit mode, it can be used with the AC to achieve more functions. In Fit mode, the RG-AP840-L can be deployed through Zero Touch Provisioning (ZTP). In addition, complete remote management also greatly enhances the O&M management efficiency of a wireless network.

### Eweb Management

The RG-AP840-L provides the Eweb for AC and AP management. O&M personnel can complete wireless configuration easily and manage the wireless network in an all-round manner. On the AC Eweb, O&M personnel can manage an AP as well as clients connected to the AP. The rate limits and network access behaviors of clients can be defined, allowing the O&M personnel to plan, operate, and maintain a wireless network easily.

### Mobile Monitoring and Optimization

You can use the free Ruijie Cloud App to achieve simple network management experience. This app features unified device lifecycle management, switches, and security gateways. The app also simplifies device provisioning, monitoring, configuration, and optimization. For details, visit official website at <https://www.ruijienetworks.com/products/smb/cloud-service/cloud-service/ruijie-cloud-solution/mobile-app>.



### All-in-One for Small Branch Office

In small branch office scenarios, the RG-AP840-L serves as an AP to provide the wireless access service for the office area, and also functions as a VPN gateway. This all-in-one design simplifies network deployment and saves building costs.

#### PPPoE

The RG-AP840-L can function as a PPPoE client and connects to the Internet through PPPoE. In this case, no gateway needs to be deployed in a branch office area for Internet access.

#### NAT

The RG-AP840-L supports the Network Address Translation (NAT) function to translate addresses between the LAN in the branch office and the Internet.

#### IPsec VPN

The RG-AP840-L can establish IPsec VPN tunnels between the headquarters and branch offices to implement LAN interconnection.

# 05

## Specifications

### Hardware Specifications

#### Dimensions and Weight

| Dimensions and Weight           | RG-AP840-L  |
|---------------------------------|---|
| Unit dimensions (W x D x H)     | 230 mm x 230 mm x 51 mm (9.06 in x 9.06 in x 2.01 in)                   |
| Shipping dimensions (W x D x H) | 284 mm x 262 mm x 124 mm (11.18 in x 10.31 in x 4.88 in)                |
| Unit weight                     | Main unit: 1.0 kg (2.20 lbs)<br>Mounting bracket: 0.1 kg (0.22 lbs)     |
| Shipping weight                 | 1.25 kg (2.76 lbs)  |
| Mounting                        | Wall/Ceiling-mount (a mounting bracket is delivered with the main unit) |
| Lock option                     | Kensington lock and securing latch                                      |

#### Wi-Fi Radio

| Wi-Fi Radio           | RG-AP840-L  |
|-----------------------|---|
| Radio design          | Dual-radio and up to six spatial streams: <ul style="list-style-type: none"> <li>Radio 1: 2.4 GHz, two spatial streams, 2x2 MU-MIMO</li> <li>Radio 2: 5 GHz, four spatial streams, 4x4 MU-MIMO</li> </ul>   |
| Operating frequencies | 802.11b/g/n/ax: <ul style="list-style-type: none"> <li>2.400 GHz to 2.4835 GHz, ISM</li> </ul> 802.11a/n/ac/ax: <ul style="list-style-type: none"> <li>5.150 GHz to 5.250 GHz, U-NII-1</li> <li>5.250 GHz to 5.350 GHz, U-NII-2A</li> <li>5.470 GHz to 5.725 GHz, U-NII-2C</li> <li>5.725 GHz to 5.850 GHz, U-NII-3/ISM</li> </ul> Note: Country-specific restrictions apply. |

| Wi-Fi Radio         | RG-AP840-L   |
|---------------------|--|
| Data rates          | Combined peak data rate: 5.378 Gbps<br>5 GHz radio: <ul style="list-style-type: none"> <li>• Four spatial stream Single User (SU) MIMO for up to 4.804 Gbps wireless data rate to individual 4SS HE160 802.11ax client devices (max.)</li> <li>• Two spatial stream Single User (SU) MIMO for up to 1.201 Gbps wireless data rate to individual 2SS HE80 802.11ax client devices (typical)</li> <li>• Four spatial stream Multi User (MU) MIMO for up to 4.804 Gbps wireless data rate to up to four 1SS or two 2SS HE160 802.11ax DL-MU-MIMO capable client devices simultaneously (max.)</li> <li>• Four spatial stream Multi User (MU) MIMO for up to 2.402 Gbps wireless data rate to up to four 1SS or two 2SS HE80 802.11ax DL-MU-MIMO capable client devices simultaneously (typical)</li> </ul> 2.4 GHz radio: <ul style="list-style-type: none"> <li>• Two spatial stream Single User (SU) MIMO for up to 574 Mbps wireless data rate to 2SS HE40 802.11ax client devices (max.)</li> <li>• Two spatial stream Single User (SU) MIMO for up to 287 Mbps wireless data rate to 2SS HE20 802.11ax client devices (typical)</li> </ul> |
| Data rate set       | The following 802.11-compliant data rates in Mbps are supported:<br>2.4 GHz radio <ul style="list-style-type: none"> <li>• 802.11b: 1, 2, 5.5, 11</li> <li>• 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54</li> <li>• 802.11n: 6.5 to 300 (MCS0 to MCS15, HT20 to HT40)</li> <li>• 802.11ax: 8.6 to 574 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40)</li> </ul> 5 GHz radio <ul style="list-style-type: none"> <li>• 802.11a: 6, 9, 12, 18, 24, 36, 48, 54</li> <li>• 802.11n: 6.5 to 600 (MCS0 to MCS31, HT20 to HT40)</li> <li>• 802.11ac: 6.5 to 3,467 (MCS0 to MCS9, NSS = 1 to 4, VHT20 to VHT160)</li> <li>• 802.11ax: 8.6 to 4,803 (MCS0 to MCS11, NSS = 1 to 4, HE20 to HE160)</li> </ul>  |
| Packet aggregation  | 802.11n/ac/ax: A-MPDU and A-MSDU   |
| Antenna type        | Built-in omnidirectional antennas (two 2.4 GHz antennas and four 5 GHz antennas)   |
| Max. antenna gain   | 4.8 dBi in 2.4 GHz and 5.1 dBi in 5 GHz<br>The downtilt angle for the maximum gain is roughly 35 degrees.<br>With reference to the pattern of each antenna of the MIMO radios, the maximum gain of the effective per-antenna pattern is 3.8 dBi in 2.4 GHz and 4.6 dBi in 5 GHz.   |
| Max. transmit power | 2.4 GHz radio: 27 dBm (24 dBm per chain)<br>5 GHz radio: 30 dBm (24 dBm per chain)<br>Note: The transmit power is limited by local regulatory requirements.<br><br>Thailand<br>2.400 GHz to 2.4835 GHz, EIRP ≤ 20 dBm<br>5.150 GHz to 5.350 GHz, EIRP ≤ 23 dBm<br>5.470 GHz to 5.725 GHz, EIRP ≤ 30 dBm<br>5.725 GHz to 5.825 GHz, EIRP ≤ 30 dBm   |
| Power increment     | Configurable in increments of 1 dBm  |
| Radio technologies  | 802.11b: Direct-Sequence Spread-Spectrum (DSSS)<br>802.11a/g/n/ac: Orthogonal Frequency-Division Multiplexing (OFDM)<br>802.11ax: OFDMA with up to 16 resource units (for an 80 MHz channel)   |
| Modulation types    | 802.11b: BPSK, QPSK, and CCK<br>802.11a/g/n: BPSK, QPSK, 16-QAM, and 64-QAM<br>802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, and 256-QAM<br>802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, and 1024-QAM  |

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

| Wi-Fi Radio Frequency Performance |           | RG-AP840-L                             |  |
|-----------------------------------|-----------|--|--|
| 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    | 24 dBm                                 | -96 dBm                                    |
|                                   | 2 Mbps    | 24 dBm                                 | -95 dBm                                    |
| 2.4 GHz, 802.11b                  | 5.5 Mbps  | 23 dBm                                 | -93 dBm                                    |
|                                   | 11 Mbps   | 22 dBm                                 | -89 dBm                                    |
| 2.4 GHz, 802.11g                  | 6 Mbps    | 24 dBm                                 | -91 dBm                                    |
|                                   | 24 Mbps   | 23 dBm                                 | -85 dBm                                    |
|                                   | 36 Mbps   | 23 dBm                                 | -80 dBm                                    |
|                                   | 54 Mbps   | 21 dBm                                 | -74 dBm                                    |
| 2.4 GHz, 802.11n (HT20)           | MCS0      | 24 dBm                                 | -90 dBm                                    |
|                                   | MCS7      | 20 dBm                                 | -70 dBm                                    |
| 2.4 GHz, 802.11n (HT40)           | MCS0      | 24 dBm                                 | -90 dBm                                    |
|                                   | MCS7      | 20 dBm                                 | -70 dBm                                    |
| 2.4 GHz, 802.11ax (HE20)          | MCS0      | 24 dBm                                 | -90 dBm                                    |
|                                   | MCS11     | 16 dBm                                 | -62 dBm                                    |
| 2.4 GHz, 802.11ax (HE40)          | MCS0      | 24 dBm                                 | -88 dBm                                    |
|                                   | MCS11     | 16 dBm                                 | -60 dBm                                    |
| 5 GHz, 802.11a                    | 6 Mbps    | 24 dBm                                 | -91 dBm                                    |
|                                   | 24 Mbps   | 23 dBm                                 | -85 dBm                                    |
|                                   | 36 Mbps   | 23 dBm                                 | -80 dBm                                    |
|                                   | 54 Mbps   | 21 dBm                                 | -74 dBm                                    |
| 5 GHz, 802.11n (HT20)             | MCS0      | 24 dBm                                 | -90 dBm                                    |
|                                   | MCS7      | 20 dBm                                 | -68 dBm                                    |
| 5 GHz, 802.11n (HT40)             | MCS0      | 24 dBm                                 | -88 dBm                                    |
|                                   | MCS7      | 20 dBm                                 | -68 dBm                                    |
| 5 GHz, 802.11ac (VHT20)           | MCS0      | 24 dBm                                 | -90 dBm                                    |
|                                   | MCS9      | 18 dBm                                 | -68 dBm                                    |
| 5 GHz, 802.11ac (VHT40)           | MCS0      | 24 dBm                                 | -88 dBm                                    |
|                                   | MCS9      | 18 dBm                                 | -63 dBm                                    |
| 5 GHz, 802.11ac (VHT80)           | MCS0      | 24 dBm                                 | -85 dBm                                    |
|                                   | MCS9      | 18 dBm                                 | -60 dBm                                    |
| 5 GHz, 802.11ax (HE20)            | MCS0      | 24 dBm                                 | -90 dBm                                    |
|                                   | MCS11     | 16 dBm                                 | -60 dBm                                    |
| 5 GHz, 802.11ax (HE40)            | MCS0      | 24 dBm                                 | -86 dBm                                    |
|                                   | MCS11     | 16 dBm                                 | -56 dBm                                    |
| 5 GHz, 802.11ax (HE80)            | MCS0      | 24 dBm                                 | -83 dBm                                    |
|                                   | MCS11     | 24 dBm                                 | -53 dBm                                    |
| 5 GHz, 802.11ax (HE160)           | MCS0      | 16 dBm                                 | -81 dBm                                    |
|                                   | MCS11     | 16 dBm                                 | -51 dBm                                    |



## Bluetooth Radio

| Bluetooth Radio     | RG-AP840-L  |
|---------------------|---|
| Bluetooth           | Bluetooth 5.1   |
| Antenna type        | Integrated vertically polarized omnidirectional antenna |
| Max. antenna gain   | 3.5 dBi, with a downtilt angle of roughly 30 degrees    |
| Max. transmit power | 10 dBm (Class 1)  |
| Receive sensitivity | -98 dBm   |

## Ports

| Ports                 | RG-AP840-L   |
|-----------------------|--|
| Fixed service port    | 1 x 100/ 1000/2500/5000Base-T RJ45 Ethernet port with auto-negotiation <ul style="list-style-type: none"> <li>• Auto MDI/MDIX crossover</li> <li>• NBASE-T/IEEE802.3bz-compliant 5 Gbps</li> <li>• PoE-PD: 54 V DC (nominal value) 802.3af/at/bt (Class 3 or higher)</li> <li>• 802.3az EEE</li> </ul> 1 x 5GE combo SFP port, compatible with 1GE and 2.5GE<br>1 x 10/100/1000Base-T RJ45 Ethernet port with auto-negotiation <ul style="list-style-type: none"> <li>• Supplying 48 V/12.95 W power to an IoT unit</li> <li>• Auto MDI/MDIX crossover</li> <li>• 802.3az EEE</li> </ul> |
| Fixed management port | 1 x RJ45 console port (serial console port)  |
| USB                   | USB 3.0 (Type-A connector)   |
| Status LED            | 1 x multi-color system status LED  |
| Button                | 1 x Reset button <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>   |

## Power Supply and Consumption

| Power Supply and Consumption | RG-AP840-L  |
|------------------------------|---|
| Input power supply           | The AP supports the following two power supply modes: <ul style="list-style-type: none"> <li>• 54 V DC/1.1 A power input over DC connector: The DC connector accepts 2.1 mm/5.5 mm center-positive circular plug. A DC power adapter needs to be purchased independently.</li> <li>• PoE input over LAN 1: The power source equipment (PSE) complies with IEEE 802.3af/at/bt standard (PoE/PoE+/PoE++).</li> </ul> Note: <ul style="list-style-type: none"> <li>• If both DC power and PoE are available, DC power is preferred.</li> <li>• When powered by 802.3bt (PoE++), the AP operates with the optimal performance.</li> <li>• When powered by 802.3at (PoE+), the AP starts up normally. LAN 2 and USB port cannot supply power to external devices.</li> <li>• When powered by 802.3af (PoE), the AP starts up normally. Both 2.4 GHz and 5 GHz radio cards can work only in one spatial stream mode. LAN 2 and USB port cannot supply power to external devices.</li> </ul> |
| External power supply        | When powered by 802.3bt (PoE++), the AP can supply power to an external device. <ul style="list-style-type: none"> <li>• The USB port can source 1 A/5 W power to an attached device.</li> <li>• The LAN 2 port can source 48 V/12.95 W power to a unit.</li> </ul>   |
| Power consumption            | Max power consumption: 40 W <ul style="list-style-type: none"> <li>• DC powered: 40 W</li> <li>• PoE powered (802.3af): 12.95 W</li> <li>• PoE+ powered (802.3at): 22 W</li> <li>• PoE++ powered (802.3bt): 40 W</li> <li>• Idle mode: 10.3 W</li> </ul>  |

## Environment and Reliability

| Environment and Reliability      | RG-AP840-L  |
|----------------------------------|---|
| Temperature                      | Operating temperature: -10°C to 50°C (14°F to 122°F)<br>Storage temperature: -40°C to 70°C (-40°F to +158°F)<br>Note: At an altitude between 3,000 m (9,843 ft) and 5,000 m (16,404 ft), every time the altitude increases by 220 m (722 ft), the maximum temperature decreases by 1°C (1.8°F). |
| Humidity                         | Operating humidity: 5% to 95% (non-condensing)<br>Storage humidity: 5% to 95% (non-condensing)  |
| Environment standard             | Operating environment: ETS 300 019 Class 3.2<br>Storage and shipment environment: ETS 300 019 Classes 1.2 and 2.3   |
| Mean Time Between Failure (MTBF) | 394,941 hours (45 years) at the operating temperature of 25°C (77°F)  |

## Regulatory Compliance

| Regulatory Compliance | RG-AP840-L  |
|-----------------------|---|
| Regulatory compliance | EN 55032<br>EN 55035<br>EN 61000-3-3<br>EN IEC 61000-3-2<br>EN 301 489-1<br>EN 301 489-3<br>EN 301 489-17<br>EN 300 328<br>EN 301 893<br>EN 300 440<br>FCC Part 15<br>EN IEC 62311<br>IEC 62368-1<br>EN 62368-1 |

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

## Software Specifications

| Applicable Software Version | RG-AP840-L                |
|-----------------------------|---------------------------|
| Applicable software version | RGOS11.9(6)W3B3 or higher |

## WLAN

| WLAN  | RG-AP840-L   |
|---|--|
| Recommended max number of active devices per AP | 64   |
| Max. number of BSSIDs                           | 32 (up to 16 BSSIDs per radio)   |
| STA management                                  | SSID hiding<br>Each SSID can be configured with the authentication mode, encryption mechanism, and VLAN attributes independently.                                  |
| STA management                                  | Remote intelligent perception technology (RIPT)<br>Intelligent client identification technology<br>Intelligent load balancing based on the STA quantity or traffic |
| STA limiting                                    | SSID-based STA limiting<br>Radio-based STA limiting  |

| WLAN               | RG-AP840-L                      |
|--------------------|---------------------------------|
| Bandwidth limiting | STA/SSID/AP-based rate limiting |
| Wireless roaming   | Layer 2 and Layer 3 roaming     |

## Security

| Security                      | RG-AP840-L   |
|-------------------------------|--|
| Authentication and encryption | Remote Authentication Dial-In User Service (RADIUS)<br>PSK and web authentication<br>QR code-based guest authentication, SMS authentication, MAB authentication (used with the RG-WS series wireless access controller)<br>Data encryption: WEP (64/128 bits), WPA-TKIP, WPA-PSK, WPA2-AES, WPA3-Enterprise, WPA3-Individual |
| Data frame filtering          | Allowlist, static blocklist, and dynamic blocklist   |
| ACL                           | Dynamic ACL assignment   |
| CPP                           | Supported  |
| NFPP                          | Supported  |

## Routing and Switching

| Routing and Switching | RG-AP840-L  |
|-----------------------|---|
| IP service            | Static IPv4 address and DHCP-assigned IPv4 address<br>NAT, FTP ALG, DNS ALG     |
| Multicast             | Multicast-to-unicast conversion   |
| IPv6 basics           | IPv6 addressing, Neighbor Discovery (ND), ICMPv6, IPv6 Ping<br>IPv6 DHCP Client |
| IP routing            | IPv4/IPv6 static routing  |
| VPN                   | PPPoE Client<br>IPsec VPN   |

## Management

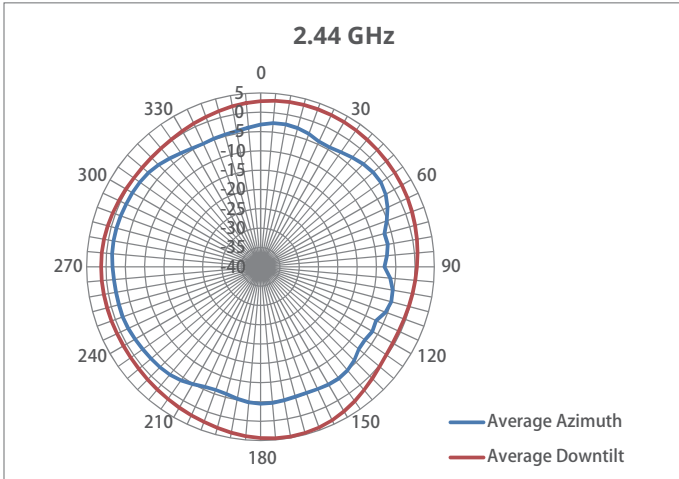
| Management                    | RG-AP840-L  |
|-------------------------------|---|
| Network management            | Fault inspection and alarm<br>Information statistics and logging  |
| Network management platform   | Web-based management  |
| User access management        | Telnet, SSH, SNMP, and TFTP-based management  |
| Fat/Fit/Cloud mode switchover | When the AP works in Fit mode, it can be switched to Fat mode through an AC.<br>When the AP works in Fat mode, it can be switched to Fit mode through the console port or Telnet.<br>When the AP works in Cloud mode, it can be managed through Ruijie Cloud. |

# 06

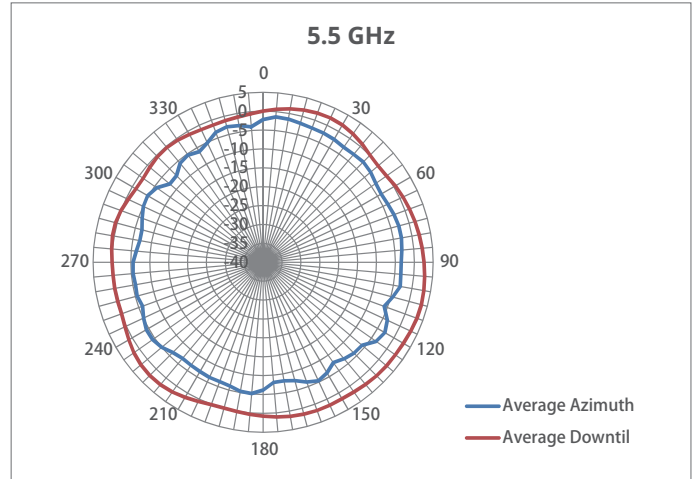
## Antenna Pattern Plots

### Horizontal Planes (Top View)

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



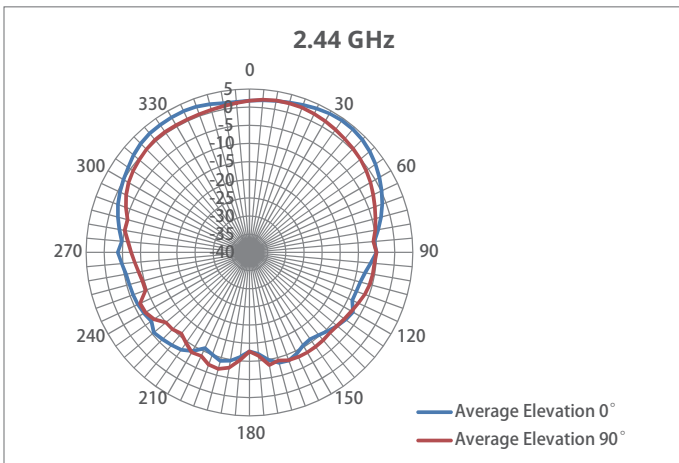
2.44 GHz (ANT1, 2)



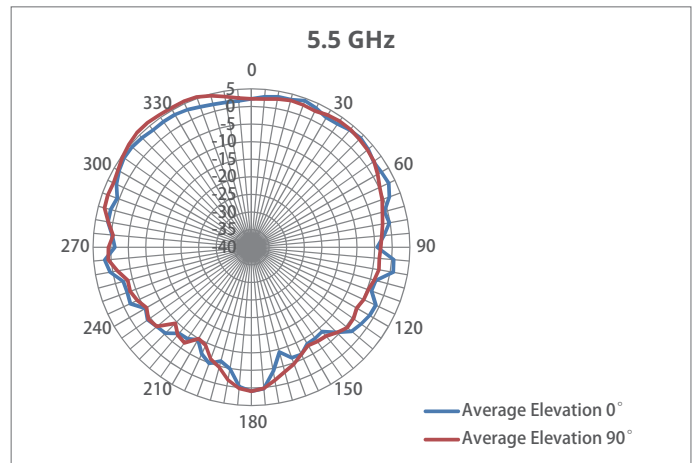
5.5 GHz (ANT1, 2, 3, 4)

### Vertical Planes (Side View, AP Facing Down)

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



2.44 GHz (ANT1, 2)



5.5 GHz (ANT1, 2, 3, 4)

Note: Operating frequency bands are country-specific.

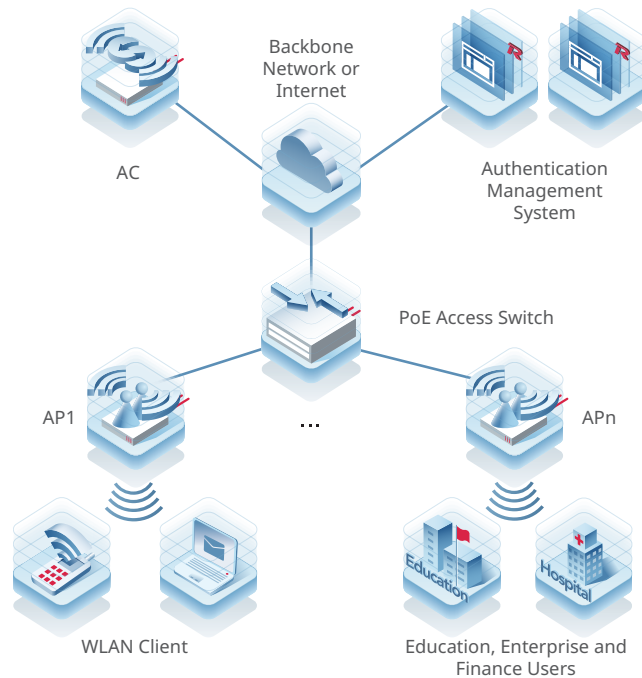
# 07

## Typical Applications

### Typical Scenario

The AP is applicable to densely populated areas with simple building structures, no special obstructions, and a large capacity demand. Such areas include meeting rooms, libraries, classrooms, bars, and leisure centers. The AP can be flexibly deployed based on the environment.

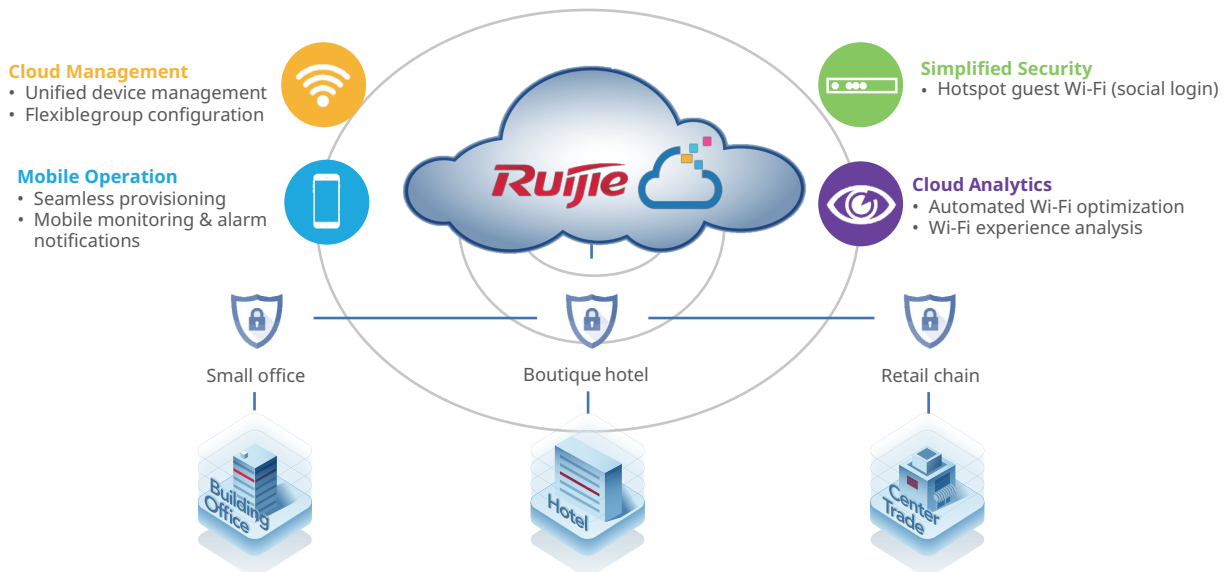
The following figure shows the typical network topology of the RG-AP840-L.



### Public Cloud Deployment

With Ruijie public cloud service, the RG-AP840-L is fit for SME scenarios, including small offices, boutique hotels, and retail stores. Ruijie Networks provides customers with Ruijie Cloud lifetime free licenses. It significantly streamlines the IT operational efficiency, and simplifies wireless deployment with cost-effective options for SMEs.

The Ruijie Cloud service provides network provisioning, monitoring, optimization, operation, and maintenance. Devices can be easily deployed or swapped in plug-and-play mode. Automatic RF planning meets the needs of increasing user experience.

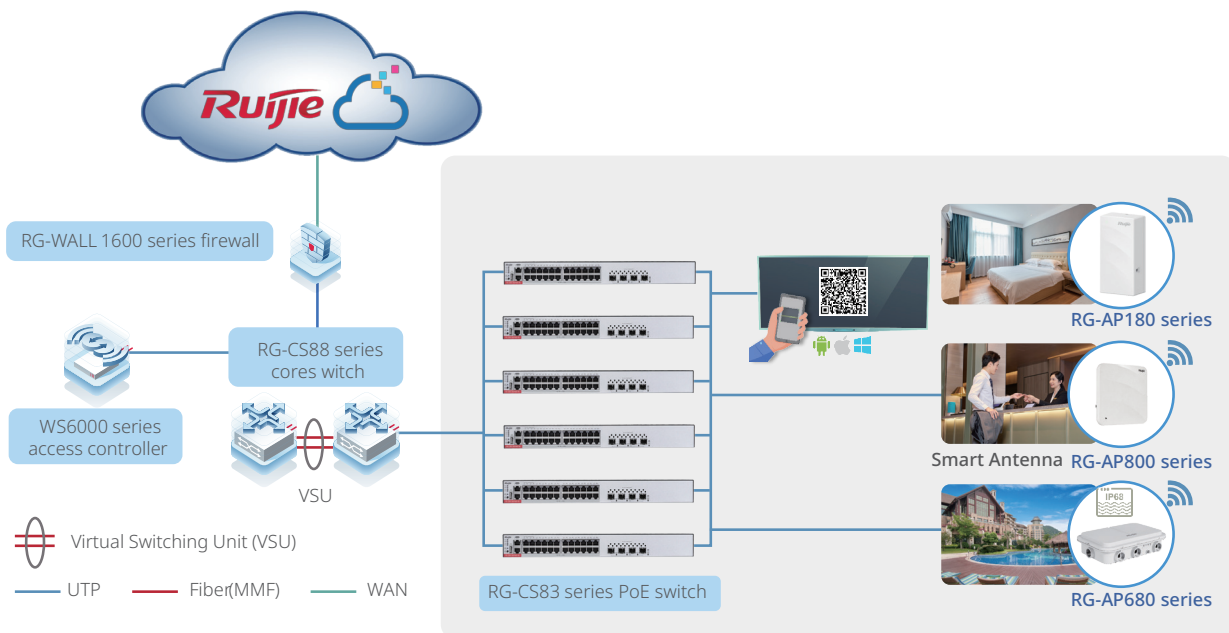


## Key Features:

- Unified device management
- Fast provisioning by Cloud and App
- Captive portal & social media authentication
- App-based monitoring and alarm

## Hybrid Cloud Deployment

For enterprise office, campus network, and hospitality customers with single or multiple sites, a hybrid mode consisting of Ruijie RG-WS series wireless access controller (on-premises) and cloud-based management (optional) is recommended for high-density AP deployment. Wireless access controllers are installed at the customer's site with fully integrated wireless management and authentication features, supporting large-scale AP management with cluster-based controller architecture. Optionally, the cloud management platform allows for value-added features such as centralized device configuration and monitoring, and reporting.



## Key Features:

- Centralized device management and reporting by Ruijie Cloud
- Ultra-seamless roaming management
- High performance and security with all user authentication and traffic forwarding handled locally
- Flexible authentication options, including 802.1X, MSCHAPv2, and voucher authentication
- Unified management of all series of Ruijie APs

# 08

## Ordering Information

| Model      | Description  |
|------------|--|
| RG-AP840-L | Wi-Fi 6 dual-radio indoor wireless access point<br>2.4 GHz 2x2:2 MU-MIMO + 5 GHz 4x4:4 MU-MIMO<br>Built-in omnidirectional antennas<br>Up to six spatial streams<br>Data rate of up to 5.378 Gbps<br>Compliance with IEEE 802.11a/b/g/n/ac and 802.11ax standards<br>Fat/Fit/cloud mode switchover<br>Compliance with IEEE 802.3 bt/at/af PoE standard<br>Each AP occupying one wireless access controller license |

# 09

## Package Contents

| Item  | Quantity |
|---|----------|
| Main unit   | 1        |
| Mounting bracket                                    | 1        |
| Wall anchor   | 4        |
| 4.2 mm x 20 mm Phillips pan head self-tapping screw | 4        |
| Warranty Card and Hazardous Substance Table         | 1        |
| Quick Start Guide                                   | 1        |

# 10

## 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/service\\_41](https://www.ruijienetworks.com/support/service_41)

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

# 11

## 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](mailto:service_rj@ruijienetworks.com)



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