Datasheet



RG-AP720-L

802.11ac Wave2 Dual-Radio Access Point

INNOVATION
Beyond Networks

Ruijie

01 Product Overview

The RG-AP720-L is a dual-radio 802.11ac Wave 2-compliant wireless access point (AP) developed by Ruijie for indoor scenarios, such as higher education, government, healthcare, general education, finance, and business. Each radio supports two spatial streams, and two built-in radios support 4 spatial streams. It provides the data rate of 300 Mbps at 2.4 GHz and 867 Mbps at 5 GHz. The RG-AP720-L provides a data rate of up to 1.167 Gbps. The ultra-fast wireless rate eliminates the performance bottleneck.

The design of the RG-AP720-L considers factors such as wireless network security, radio control, mobile access, QoS, and seamless roaming. With Ruijie's wireless access controller (AC), the RG-AP720-L can implement wireless client data forwarding, security, and access control.

The RG-AP720-L supports 802.11ac Wave2 that provides Multi-User Multiple-Input Multiple-Output (MU-MIMO). It uses the dual-radio design. It works in 802.11b/g/n mode at 2.4 GHz and in 802.11a/n/ac mode at 5 GHz.

02 Product Appearance



Top View



Right View



Bottom View



Front View

03 Product Highlights

- **Local and cloud management (lifetime-free) modes, reduced TCO, and maximum ROI**
- **Rapid configuration through Ruijie Cloud App**
- **IEEE 802.11k/v/r support, roaming stickiness optimization, and remote association**
- **Dynamic segmentation**
- **Automatic radio optimization powered by big data technology**
- **Aggregated peak data rage of up to 1.167 Gbps**

04 Product Features

Stylish Design

The RG-AP720-L for SMEs employs the simplistic and stylish design to adapt to different scenarios. It has an integrated antenna and hidden LAN port, which facilitates cabling and deployment.



Hidden LAN Port Design for the AP720-L (Left Side)

High-speed Wireless Access for Better Experience

802.11ac GE Access

At 5 GHz frequency band, the RG-AP720-L adopts Wi-Fi standard 802.11ac Wave 2, with the maximum connection rate of 867 Mbps. When dual radios are enabled, it provides a data rage of up to 1.167 Gbps. Compared with traditional 802.11n antenna mode, the throughput is increased by 94.5%, bringing high-speed experience.

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.

Intelligent Optimization, Reliability Guarantee

Radio Resource Management

The RG-AP720-L uses Radio Resource Management (RRM) technology to analyze the radio frequency environment around itself. It automatically adjusts its radio channel and power, and can identify the interference of non-802.11 devices and switch channels to avoid signal interference between APs, and between APs and interference devices. This ensures normal operation of the wireless network and improves user experience.

Intelligent Local Forwarding

The RG-AP720-L integrates intelligent local forwarding technology to eliminate the traffic bottleneck on its connected wireless access controller. The data forwarding mode of the RG-AP720-L can be flexibly pre-configured through Ruijie's wireless access controller. Then the RG-AP720-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-AP720-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 802.11ac networks.

Advanced Network Coexistence

The RG-AP720-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-AP720-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-AP720-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.

Comprehensive Security Protection and Ease of Use

Comprehensive Wireless Security Protection

The IPQ40xx series chip can securely store credentials and keys. It provides various secure storage mechanisms, including the hardware encryption module, secure startup, and secure booting. It protects credentials and keys stored in the chip against malicious attacks and unauthorized access. In addition, the IPQ40xx series chip supports various encryption algorithms and protocols, such as Transport Layer Security (TLS) and Secure Socket Layer (SSL), to further enhance data security.

The Network Foundation Protection Policy (NFPP) enables the switch to defend against attacks. Various malicious attacks such as ARP attacks and IP scanning attacks exist on a network, resulting in a failure to process normal protocol flows and management flows by the CPU. In this case, protocol flapping occurs or the switch cannot be managed by the NMS. NFPP can rate-limit or isolate attack packets to ensure normal operation of a network.

IP source guard enables the switch to filter IP packets through the hardware. This technology ensures that only the users that have matching entries in the hardware filtering database can access the network normally, preventing users from using private IP addresses and forging IP packets.

Various and Comprehensive Management Policies

Flexible Switching Between Fat, Fit, and Cloud Modes

The RG-AP720-L supports flexible switchover among Fat, Fit, and cloud deployment modes.

When the RG-AP720-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-AP720-L is deployed in Fit mode, it can be used with the AC to achieve more functions. In Fit mode, the RG-AP720-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.

Ethernet Power Port for Easy Deployment and Maintenance

The RG-AP720-L supports Power over Ethernet (802.3af). Its Ethernet port can supply power to itself through PoE, and can receive communication data and power supply on the Ethernet cable. A network administrator can directly operate the device through the remote network, avoiding inconvenient power supply and greatly reduces the difficulty in deployment and installation cost.

All-in-One for Small Branch Office

In small branch office scenarios, the RG-AP720-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.

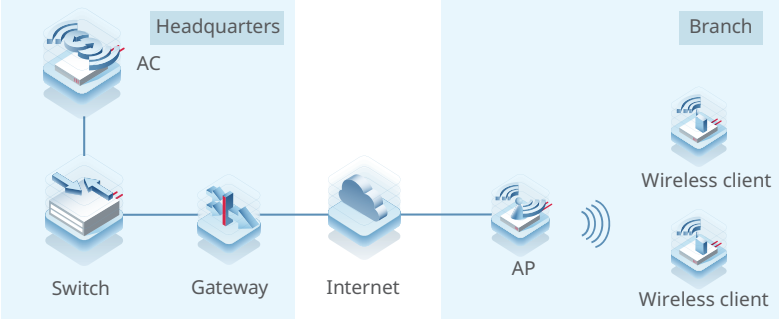
PPPoE

The RG-AP720-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.

The RG-AP720-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-AP720-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-AP720-L
Unit dimensions (W x D x H)	194 mm x 194 mm x 37 mm (7.64 in. x 7.64 in. x 1.46 in.)
Shipping dimensions (W x D x H)	460 mm x 360 mm x 242 mm (18.11 in. x 14.17 in. x 9.53 in.)
Unit weight	Main unit: 0.42 kg (0.93 lbs) Mounting bracket: 0.07 kg (0.15 lbs)
Shipping weight	0.87 kg (1.92 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-AP720-L
Radio design	Dual-radio and up to four spatial streams: • Radio 1: 2.4 GHz, two spatial streams, 2x2 MU-MIMO • Radio 2: 5 GHz, two spatial streams, 2x2 MU-MIMO
Operating frequencies	Radio 1, 802.11b/g/n: • 2.400 GHz to 2.4835 GHz, ISM Radio 2, 802.11a/n/ac: • 5.150 GHz to 5.250 GHz, U-NII-1 • 5.250 GHz to 5.350 GHz, U-NII-2A • 5.470 GHz to 5.725 GHz, U-NII-2C • 5.725 GHz to 5.850 GHz, U-NII-3/ISM 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.*

Wi-Fi Radio	RG-AP720-L
Data rates	Combined peak data rate: 1.167 Gbps 2.4 GHz radio • Two spatial stream Single User (SU) MIMO for up to 300 Mbps wireless data rate to individual 2SS HT40 802.11n client devices (maximum) • Two spatial stream Single User (SU) MIMO for up to 144.4 Mbps wireless data rate to individual 2SS HT20 802.11n client devices (typical) 5 GHz radio • Two spatial stream Single User (SU) MIMO for up to 867 Mbps wireless data rate to individual 2SS HT80 802.11ac client devices (typical)
Data rate set	The following 802.11-compliant data rates in Mbps are supported: 2.4 GHz radio • 802.11b: 1, 2, 5.5, 11 • 802.11g: 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 • 802.11n: 6.5 to 300 (MCS0 to MCS15, HT20 to HT40) 5 GHz radio • 802.11a: 6, 9, 12, 18, 24, 36, 48, 54 • 802.11n: 6.5 to 300 (MCS0 to MCS15, HT20 to HT40) • 802.11ac: 6.5 to 867 (MCS0 to MCS9, NSS = 1 to 2, VHT20 to VHT80)
Packet aggregation	802.11n/ac: A-MPDU and A-MSDU
Antenna type	Built-in omnidirectional antennas (two 2.4 GHz antennas and two 5 GHz antennas)
Antenna gain	2.4 GHz: 4.3 dBi 5 GHz: 5.7 dBi
Maximum transmit power	2.4 GHz radio: 26 dBm (23 dBm per chain) 5 GHz radio: 26 dBm (23 dBm per chain) Note: The transmit power is limited by local regulatory requirements. For details, see *WLAN Country or Region Codes and Channel Compliance.* Thailand 2.400 GHz to 2.4835 GHz, EIRP ≤ 20 dBm 5.150 GHz to 5.350 GHz, EIRP ≤ 23 dBm 5.470 GHz to 5.725 GHz. EIRP ≤ 30 dBm 5.725 GHz to 5.825 GHz, EIRP ≤ 30 dBm
Radio technologies	802.11b: Direct-Sequence Spread-Spectrum (DSSS) 802.11a/g/n/ac: Orthogonal Frequency-Division Multiplexing (OFDM)
Modulation types	802.11b: BPSK, QPSK, CCK 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM

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.

Wi-Fi Radio Frequency Performance	RG-AP720-L		
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	–89dBm
	5.5 Mbps	23 dBm	–88 dBm
	11 Mbps	23 dBm	–85 dBm

Wi-Fi Radio Frequency Performance	RG-AP720-L		
Frequency Band and Protocol	**Data Rate**	**Maximum Transmit Power per Transmit Chain**	**Maximum Receive Sensitivity per Receive Chain**
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
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
5 GHz, 802.11n (HT20)	MCS0	20 dBm	–83 dBm
	MCS11	18 dBm	–65 dBm
5 GHz, 802.11n (HT40)	MCS0	19 dBm	–80 dBm
	MCS11	18 dBm	–62 dBm

Ports Specifications

Ports Specifications	RG-AP720-L
Fixed service port	1 x 10/100/1000BASE-T port • In compliance with IEEE 802.3af standard (PoE) • Auto MDI/MDIX crossover • PoE-PD: 54 V DC (nominal) 802.3af/at/bt (Class 3 or higher) • 802.3az EEE
Fixed management port	1 x RJ45 console port (serial console port)

Ports Specifications	RG-AP720-L
Status LED	1 x multi-color system status LED
Button	1 x Reset button • Press the button for shorter than 2 seconds. Then the device restarts. • Press the button for longer than 3 seconds. Then the device restores to factory settings.

Power Supply and Consumption

Power Supply and Consumption	RG-AP720-L
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 adapter needs to be purchased separately. • 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.
Overall power consumption	Maximum power consumption: 12.95 W • DC powered: 12.95 W • PoE powered (802.3af): 12.95 W • PoE+ powered (802.3at): 12.95 W • PoE++ powered (802.3bt): 12.95 W • Idle mode: 6 W

Environment and Reliability

Environment and Reliability	RG-AP720-L
Temperature	Operating temperature: –10°C to +50°C (14°F to +122°F) Storage temperature: –40°C to +70°C (–40°F to +158°F) Note: At an altitude in the range of 3,000–5,000 m (9,842.52–16,404.20 ft.), every time the altitude increases by 220 m (722 ft.), the maximum temperature decreases by 1°C (1.8°F).
Humidity	Operating humidity: 5% RH to 95% RH (non-condensing) Storage humidity: 5% RH to 95% RH (non-condensing)
Mean Time Between Failure (MTBF)	200,000 hours (22 years) at the operating temperature of 25°C (77°F)

Regulatory Compliance

Regulatory Compliance	RG-AP720-L
Security regulations	IEC 62368-1 EN 62368-1
EMC regulations	EN 55032 EN 55035 EN IEC 61000-3-2 EN 61000-3-3 EN 301 489-1 EN 301 489-3 EN 301 489-17

Regulatory Compliance	RG-AP720-L
Radio frequency regulations	EN 300 328 EN 301 893 EN 300 440 EN 62311 EN IEC 62311 EN 50665:2017 FCC Part 15

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

Software Specifications

Applicable Software Version	RG-AP720-L
Applicable software version	RGOS 11.1(9)B1P30 or higher

WLAN

WLAN	RG-AP720-L
Recommended maximum number of active devices per AP	64
Maximum number of associated clients	256 Note The number of associated clients varies according to the environment.
Maximum number of BSSIDs	32 (up to 16 BSSIDs per radio)
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 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
Wireless roaming	Layer 2 and Layer 3 roaming

Security

Security	RG-AP720-L
Authentication and encryption	Remote Authentication Dial-In User Service (RADIUS) PSK, web, 802.1X and MSCHAPv2 authentication SMS authentication (used with the RG-WS series wireless access controller) MAB authentication (used with the RG-WS series wireless access controller) WPA (TKIP), WPA-PSK, WPA2, WEP (64/128-bit)
Data frame filtering	Allowlist, static blocklist, and dynamic blocklist
ACL	Dynamic ACL assignment based on 802.1X authentication (used with the AC)
CPP	Supported
NFPP	Supported

Routing and Switching

Routing and Switching	RG-AP720-L
IP service	Static IPv4 address IPv4 DHCP client FTP ALG and DNS ALG
Multicast	Multicast Multicast-to-unicast conversion
IPv6 basics	IPv6 addressing, Neighbor Discovery (ND), ICMPv6, IPv6 Ping, IPv6 Tracert
IP routing	IPv4/IPv6 static routing
VPN	PPPoE client

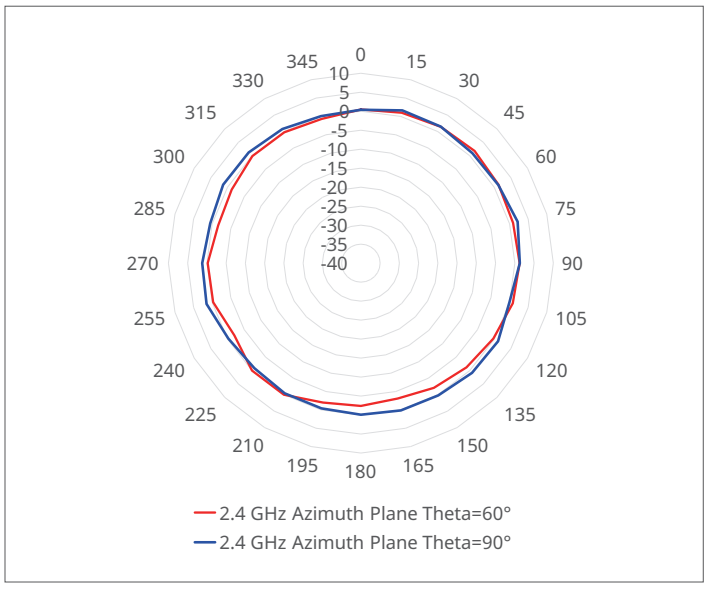
Management

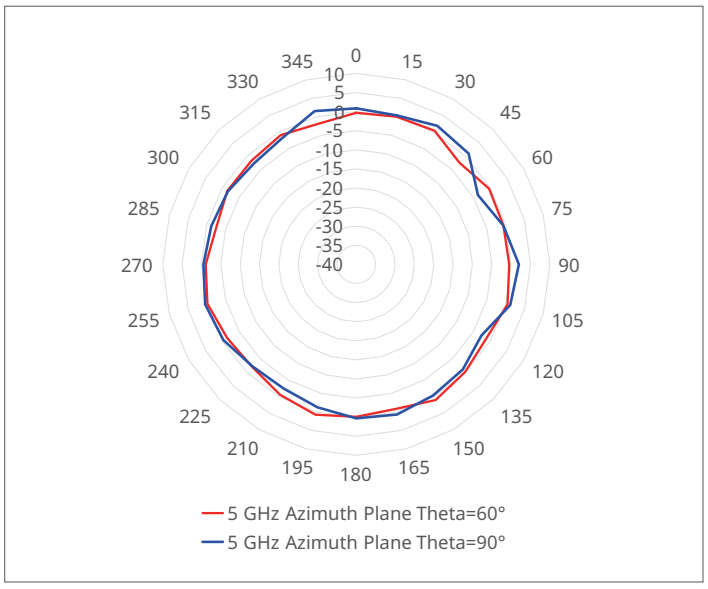
Management	RG-AP720-L
Network management	Fault inspection and alarm Information statistics and logging SNMPv1/v2c/v3 NTP Server and NTP Client
Network management platform	Ruijie Cloud Web-based management (Eweb)
User access management	Console, Telnet, SSH, SNMP and TFTP-based management
Fat/Fit/Cloud mode switchover	When the AP works in Fit mode, it can be switched to Fat mode through an AC. When the AP works in Fat mode, it can be switched to Fit mode through the console port or Telnet. When the AP works in Cloud mode, it can be managed through Ruijie Cloud.

06 Antenna Pattern Plots

Horizontal Planes (Top View)

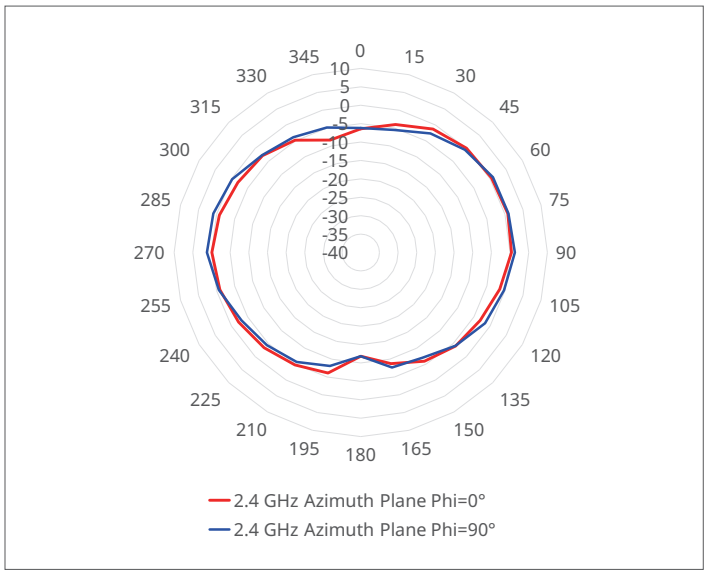
The following figures show the azimuth antenna pattern at 2.4 GHz and 5 GHz radios.

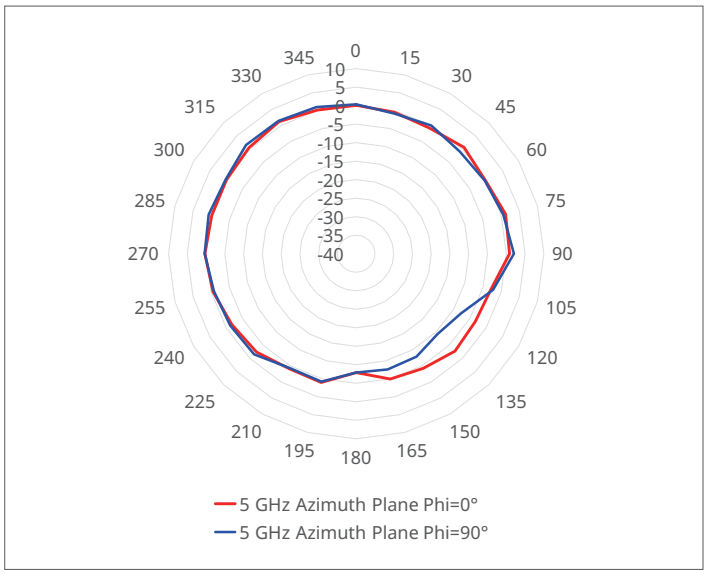




Vertical Planes (Side View, AP Facing Down)

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





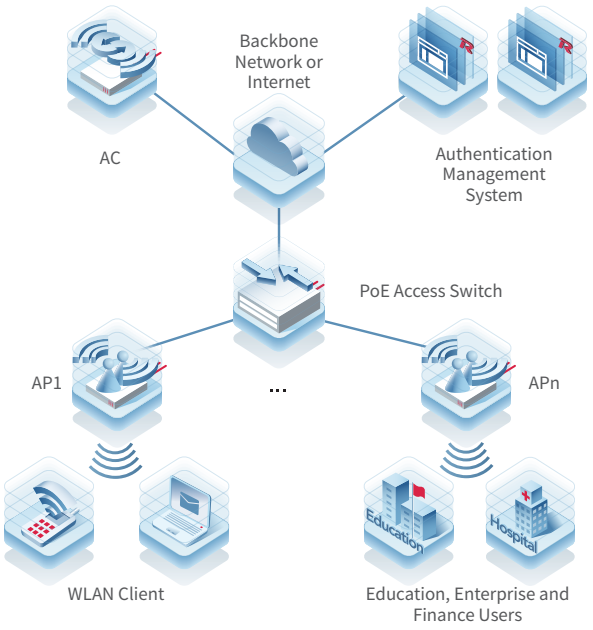
Note: Operating frequency bands are country-specific.

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 cover the scenarios of meeting rooms, libraries, classrooms, bars, and leisure centers. The AP can be flexibly deployed based on the environment.

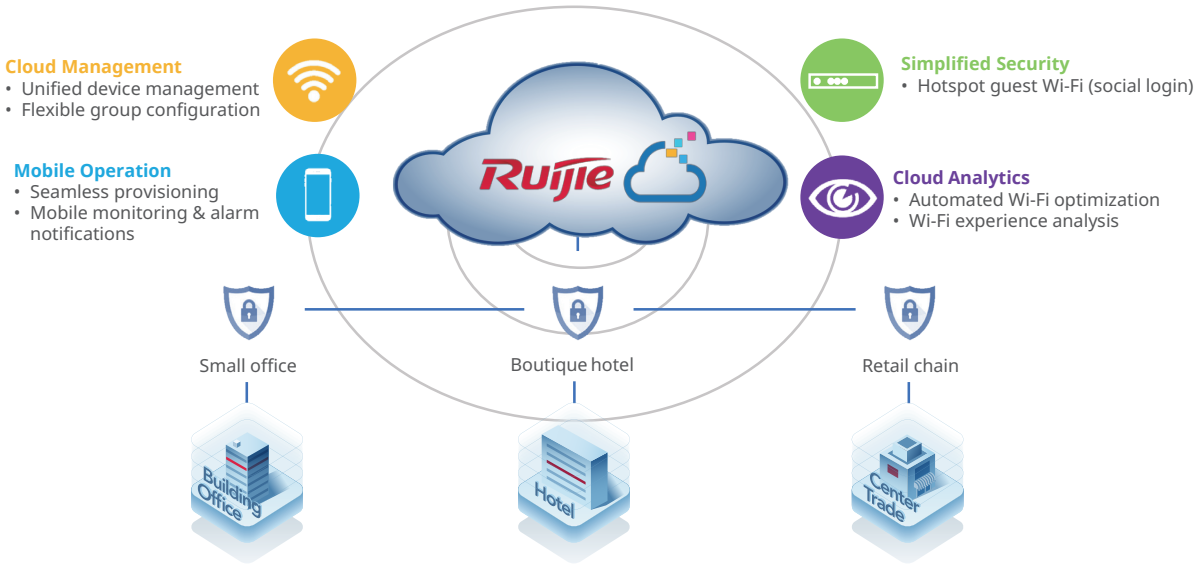
The following figure shows the typical network topology of the RG-AP720-L.



Public Cloud Deployment

With Ruijie public cloud service, the RG-AP720-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.

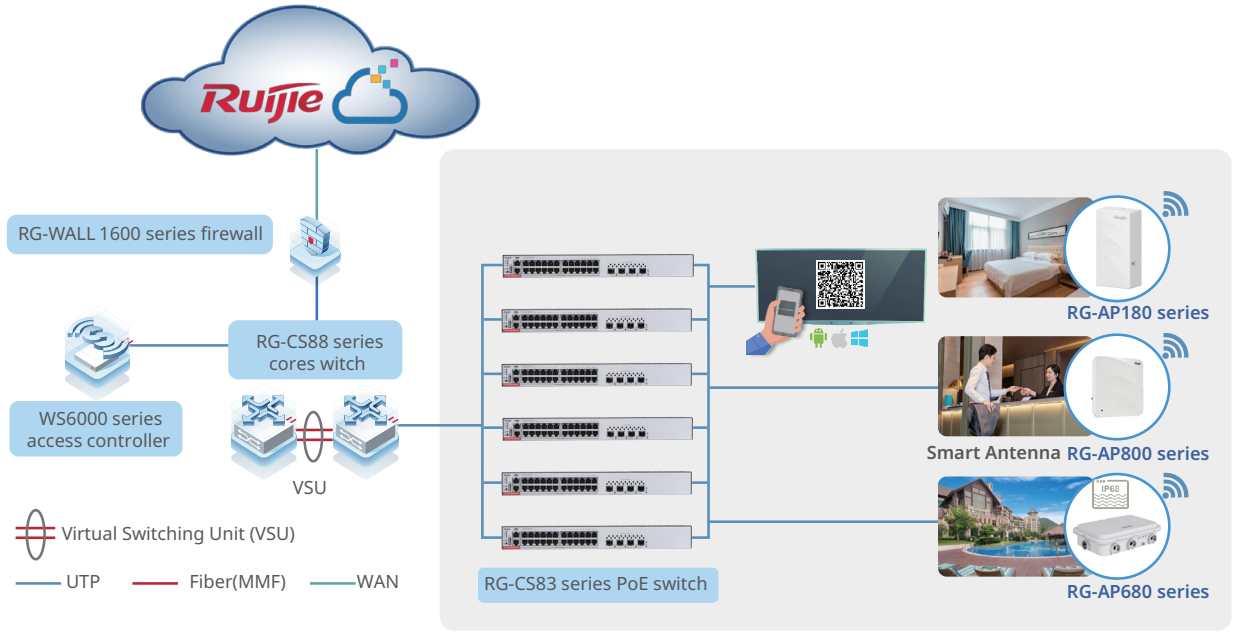


Key Features:

- Unified device management
- Fast provisioning by Cloud and App
- Captive portal
- 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 authenticatio
- Unified management of all series of Ruijie APs

Note: For more applicable scenarios, contact Ruijie pre-sales engineers.

08 Ordering Information

Model	Description
RG-AP720-L	Dual-radio indoor wireless access point Data rate of up to 1,167 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

09 Package Contents

Item	Quantity
Main unit	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 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/servicepolicy/Service-Support-Summany/

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
- *WLAN Country or Region Codes and Channel Compliance:* https://www.ruijienetworks.com/support/documents/slide_wlan-country-codes-overview

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