

PUNTO DE ACCESO INTERIOR WIFI

Wi-Fi 6 AX3000 Multi-Gigabit SME Access Point Datasheet

Ruijie RG-AP820-L(V3) is a cost-effective entry level wireless access point with Wi-Fi 6 dual-radio, dual-band design. It not only has the simplicity and flexibility for small and medium sized enterprise, but the features, functionality, and performance quality to scale up to large-enterprise network deployments.

Ruijie RG-AP820-L(V3) supports a maximum of 2.97Gbps wireless throughput when 160MHz bandwidth in 5G radio mode adopted (HE160). It fully complies with Wi-Fi 6 features and guarantees minimal signal interference and 512 clients.

Highlights:

- Maximum ROI (Lifetime free cloud management & WIS optimization service)
- HE160 Supported for Higher Throughput with Latest Wi-Fi 6 Chipsets
- Hybrid Management (Cloud / Controller / Standalone)
- Automated Radio Optimization by Artificial Intelligence
- 3-Year Hardware Warranty

Upon the uprising challenges of management efficiency and wireless security, all Ruijie enterprise APs support hybrid management mode. Either deployed as standalone AP (Fat Mode) or managed AP (Fit Mode and Cloud Managed Mode), the AP will detect the operation mode automatically without extra effort on firmware upgrade. For additional security and operation features, we recommend the enterprise customers to choose one of the below options depending on the functionality and capacity needed:

Public Cloud: Ruijie Cloud – Ruijie Public Cloud service (powered by RG-MACC) is targeted for the SME segment with integrated captive portal, authentication (such as PPSK for employees, Facebook, voucher, account, etc.), and reporting features. Together with Ruijie Cloud Mobile App (free download), SME customers can provision and manage their networks at fingertips.

Hybrid Cloud: RG-WS Series Wireless Controller (On-premises) Plus Cloud Management (Optional) – targeted for enterprise office, campus, and hospitality customers with single or

multiple sites and high-density AP deployment. The controller devices with cluster-based architecture are installed at the customer's sites with fully integrated wireless management and authentication features, supporting large scale AP management. Optionally, the cloud management platform allows for value-added features like centralized device configuration and monitoring, AI radio (RF) optimization, reporting, etc.

1. Features

1024-QAM High-speed Access

RG-AP820-L(V3) adopts the dual-radio dual-band design. With the next-generation 802.11ax for 5GHz band, the maximum access rate can reach 2.4Gbps. If dual-radio is enabled concurrently, the high-speed Wi-Fi throughput can reach 2.97Gbps, offering the true high-speed experience.

OFDMA High-density User Access

RG-AP820-L(V3) supports OFDMA of 802.11ax, which divides the WLAN channel into plurality of narrower subchannels, with each user occupying one or more subchannels. By scheduling multiple users to receive and send packets concurrently via the AP, user competition and back-off can be reduced, thereby reducing network latency, and improving network efficiency. In a high-density deployment environment, the average rate per user is increased by four times compared with Wi-Fi 5 devices.

Spatial Reuse with BSS Color

RG-AP820-L(V3) supports spatial reuse with basic service set (BSS) color of 802.11ax. It marks the BSSs of different WLANs in the network by different color identifiers (BSS color), and further divides them into internal and external BSS. Packet receiving and sending thresholds for the internal and external BSS are maintained separately. When receiving packets, the BSS color is retrieved to quickly identify the packets of the external BSS. If the signal strength is lower than the receiving threshold of the external BSS, the packet will be ignored. At the same time the transmission of the internal BSS packet will not be affected. This technology enhances channel reuse in a high-density scenario, greatly reducing the impact of co-channel interference for the actual network deployment.

Performance Boost from Wi-Fi 5

RG-AP820-L(V3) provides considerable performance boost even in an environment with Wi-Fi 5 only user devices. This means RG-AP820-L(V3) is not only future-proof but also able to provide instant improvement over the Wi-Fi 5 APs.

Energy Saving for Green and Low-carbon Network

Several energy saving technologies have been used in RG-AP820-L(V3), such as single antenna standby, dynamic MIMO, enhanced auto power-saving transmission and packet power control. With the high-performance power circuit design, RG-AP820-L(V3) is able to save energy while providing high-speed wireless Access. Industry-leading Local Forwarding Technology Employing an industry-leading local forwarding technology, RG-AP820-L(V3) breaks through the limitation of traffic bottleneck of wireless controllers. In collaboration with the RG-WS wireless controller series, users can flexibly pre-configure the data forwarding mode for RG-AP820-L(V3). The AP also controls whether the data will be forwarded via the wireless controller according to the SSID and user VLAN, or directly sent to the wired network for data exchange.

The local forwarding technology can classify and forward time-sensitive data which requires real-time transmission through the wired network, in order to greatly alleviate the traffic pressure on the wireless controllers and meet the need of high traffic transmission requirements of the 802.11ax standard network.

Abundant QoS Policies

RG-AP820-L(V3) supports a wide variety of QoS policies. For example, it provides WLAN/AP/STA-based bandwidth limitations and Wi-Fi multimedia (WMM) which defines different priorities for different service data. RG-AP820-L(V3) realizes timely and quantitative transmission of audio/video and guarantees smooth operation of multimedia applications. With the multicast-to-unicast technology, RG-AP820-L(V3) resolves the video lagging problem due to packet loss or high latency, and greatly enhances user experience of the multicast video services of the wireless network.

2. Technical Specifications

Physical Specifications	
Dimensions (W x D x H)	220 mm × 220 mm × 49 mm

Weight	Device: 0.6kg Mounting Kit: 0.2kg
Installation	Ceiling / Wall
Anti-theft lock	Support
Radio Specifications	
Radio	Dual-radio dual-band: Radio1: 2.4GHz 11ax, 2×2 MIMO Radio2: 5GHz 11ax, 2×2 MIMO
Operating Band	Radio1: 802.11b/g/n/ax, 2.4GHz, 2.483GHz, HE40 Radio2: 802.11a/n/ac/ax, 5.150GHz, 5.350GHz, HE80/HE160 802.11a/n/ac, 5.470GHz, 5.725GHz, 5.725GHz, 5.850GHz, HE80 Note: vary depending on different countries
Max. Throughput	Radio1: 2.4GHz, 0.574Gbps Radio2: 5GHz, 2.402Gbps Maximum throughput per AP: 2.4GHz+5GHz, 2.976Gbps
Antenna Type	Integrated Omnidirectional
Antenna Gain	2.4GHz: 2dBi 5GHz: 2dBi
Transmit Power	20dBm Note: vary depending on different countries
Adjustable Power	1dBm
Modulation	OFDM: BPSK@6/9Mbps, QPSK@12/18Mbps, 16-QAM@24Mbps, 64-QAM@48/54Mbps DSSS: DBPSK@1Mbps, DQPSK@2Mbps, and CCK@5.5/11Mbps MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM, 256QAM and 1024QAM OFDMA
Receiver Sensitivity	11b: -96dBm (1Mbps), -93dBm (5Mbps), -89dBm (11Mbps) 11a/g: -91dBm (6Mbps), -85dBm (24Mbps), -80dBm (36Mbps), -74dBm (54Mbps) 11n: -90dBm@MCS0, -70dBm@MCS7, -89dBm@MCS8, -68dBm@MCS15 11ac: HT20: -88dBm (MCS0), -63dBm (MCS9)

	<p>11ac: HT40: -85dBm (MCS0), -60dBm (MCS9)</p> <p>11ac: HT80: -82dBm (MCS0), -57dBm (MCS9)</p> <p>11ax: HE80: -82dBm (MCS0), -57dBm (MCS9), -52dBm (MCS11)</p> <p>11ax: 160MHz: -77dBm (MCS0), -50dBm (MCS11)</p>
Interfaces	
Interfaces	<p>1 10/100/1000M BASE-T Ethernet Port, PoE In (Support IEEE 802.3af/at)</p> <p>Full Spectrum Operation in IEEE 802.3af Mode</p> <p>1 1G/2.5G SFP Port</p>
Management Port	1 RJ45 Console Port
LED Indicator	1 LED Indicator
Reset Button	Support
Power	
Power Supply	<p>Local Power Supply (DC 48V/0.6A)</p> <p>Note: DC power adapters should be purchased separately from third-party vendors if needed.</p> <p>PoE (IEEE 802.3af Standard) - Full Spectrum Operation</p>
Power Consumption	12.95W
Environment	
Temperature	<p>Operating Temperature: - 10°C ~ 50°C</p> <p>Storage Temperature: - 40°C ~ 70°C</p>
Humidity	<p>Operating Humidity: 5% ~ 95% (non-condensing)</p> <p>Storage Temperature: 5% ~ 95% (non-condensing)</p>
IP Rating	IP41
Safety Standard	GB 4943.1-2011, IEC 62368-1
EMC Standard	EN 300386, GB 19286-2003, GB 17618-1998