

RG-MAP920-SF-M(V3)

Wi-Fi 7 Dual-Radio
Wall-Plate Access Point



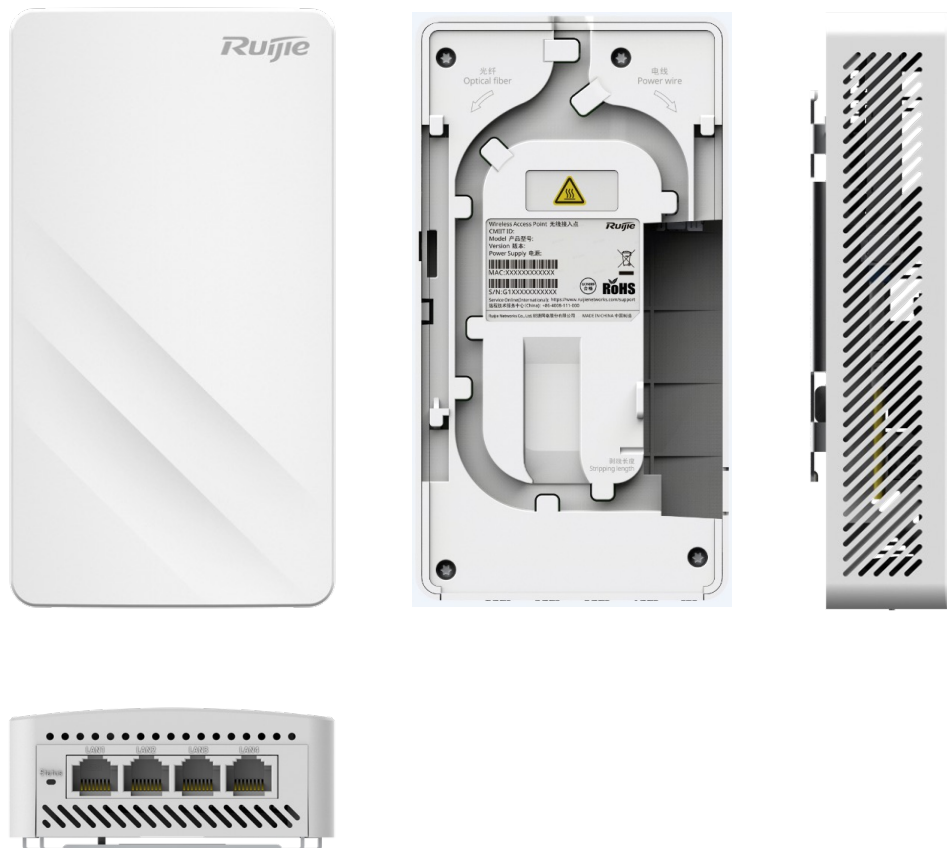
01 Product Overview

The RG-MAP920-SF-M(V3) is a Wi-Fi 7 dual-radio wall-plate access point (AP) launched by Ruijie Networks for Ruijie Simplified Optical Ethernet (SOE) Solution in indoor scenarios of various sectors covering higher education, government, K12 education, finance, and business.

Complying with IEEE 802.11be, the RG-MAP920-SF-M(V3) operates in both the 2.4 GHz and 5 GHz frequency bands. It delivers a combined peak data rate of 3.570 Gbps, with 688 Mbps in the 2.4 GHz band and 2.882 Gbps in the 5 GHz band. It provides one 2.5G SFP port and four 10/100/1000BASE-T Ethernet ports, facilitating access of wired users.

The RG-MAP920-SF-M(V3) is designed considering factors such as wireless network security, radio control, mobile access, QoS, and seamless roaming. The RG-MAP920-SF-M(V3) can be used with the Ruijie access controller (AC) and RG-UNC to implement wireless user data forwarding, security, and access control.

02 Product Appearance



03 Product Highlights

SOE Solution Architecture

FTTR and Exclusive Bandwidth

Ruijie SOE Solution adopts the Fiber to the Room (FTTR) architecture, with one fiber deployed to each room for direct fiber connectivity. As a wireless network element (NE) within the Ruijie SOE Solution, the RG-MAP920-SF-M(V3) supports flexible networking options.

- **Coarse Wavelength Division Multiplexing (CWDM) solution:** The access-side quasi-industrial CWDM optical transceiver connects to the building-side transparent distribution device, enabling seamless integration with the Ruijie SOE Solution.
- **All-Optical i-Share+ (O-Share) Solution:** A hybrid cable is used to connect the O-Share master AP, allowing adaptation to diverse deployment scenarios.

Based on the preceding architecture, the RG-MAP920-SF-M(V3) can deliver an exclusive-bandwidth, high-speed optical network that meets the requirements of high-bandwidth, low-latency services, such as 4K/8K ultra-high-definition (UHD) video and Augmented Reality (AR)/Virtual Reality (VR)-based teaching.

Simplified Construction and Flexible Deployment

Ruijie SOE Solution adopts fiber communication above the access layer. Compared with traditional network cables, optical fibers have significant advantages in deployment and O&M. They support longer transmission distances, effectively minimizing signal attenuation over long runs. Their thin, lightweight design makes them easier to route through conduits and helps save cable tray space. In addition, with a service life of up to 10 years—far exceeding the typical 3 to 5 years of network cables—optical fibers significantly reduce the cost of subsequent cable replacement and maintenance, providing a solid foundation for the long-term stable operation of networks.

By integrating optical fibers and power lines into a single hybrid cable, Ruijie SOE Solution supports both data transmission and power supply over a maximum distance of more than 1.1 km (3,608.92 ft). This solution enables direct coverage from ELV rooms to endpoint rooms in high-rise buildings, eliminating the need for relay devices and helping create a flattened network architecture.

Intelligent Management and Convenient O&M

The RG-MAP920-SF-M(V3) integrates the management mode of the O-Share Solution. In i-Share mode, no configuration is required for device onboarding, and PoE switches do not need to be configured. It aligns with the technical development trend of future wireless networks toward high performance, high density, compact scale, and microcell deployment.

IEEE 802.11be (Wi-Fi 7)

4096-QAM for High Data Rate

The RG-MAP920-SF-M(V3) adopts a dual-radio design and complies with the next-generation IEEE 802.11be standard. When two radios are enabled, the RG-MAP920-SF-M(V3) can provide a combined peak data rate of 3.570 Gbps, meeting requirements of increasing bandwidth in various scenarios.

OFDMA for High-Density Client Access

The Orthogonal Frequency Division Multiple Access (OFDMA) feature in IEEE 802.11be enables the RG-MAP920-SF-M(V3) to divide a Wireless Local Area Network (WLAN) channel into multiple sub-channels, with each client consuming one or more sub-channels. The RG-MAP920-SF-M(V3) can implement scheduling for multiple clients to receive and send packets concurrently. This reduces contention for air interface resources and backoff, shortens network latency, and boosts network efficiency.

In high-density deployment and access scenarios, the average rate per client can be increased compared to that under the IEEE 802.11ax standard.

Advanced Wi-Fi Technologies

The RG-MAP920-SF-M(V3) supports the following radio transmission technologies:

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

The RG-MAP920-SF-M(V3) supports the following radio channel coding technologies:

- **Space-time block coding (STBC)** increases the range and improves the signal reception, and enhances the 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.

Efficient and Diverse Service Assurance Policies

Intelligent Endpoint Identification

The RG-MAP920-SF-M(V3) is capable of identifying smart mobile endpoints (such as iOS and Android endpoints) and PCs. The RG-MAP920-SF-M(V3) can be interconnected with RG-UNC to implement visualized wireless network management based on wireless endpoint types and perform network optimization with one click.

Intelligent Local Forwarding

The RG-MAP920-SF-M(V3) integrates the intelligent local forwarding technology of Ruijie Networks, eliminating the traffic bottleneck of ACs. The data forwarding mode of the RG-MAP920-SF-M(V3) can be pre-configured through a Ruijie AC. The RG-MAP920-SF-M(V3) determines whether data needs to be forwarded by the AC or be sent to a wired network for data exchange based on SSIDs or user VLANs.

The local forwarding technology enables the RG-MAP920-SF-M(V3) to forward delay-sensitive data that requires real-time high-performance transmission over a wired network. This greatly reduces the traffic forwarding burden of the AC to better adapt to high-throughput transmission on 802.11be networks.

Abundant QoS Policies

The RG-MAP920-SF-M(V3) provides abundant QoS policies. It supports WLAN/AP/STA-based bandwidth limiting as well as Wi-Fi Multimedia (WMM) that defines priorities for different service data. Therefore, the RG-MAP920-SF-M(V3) can provide timely and quantitative transmission of audio and video services, and ensure smooth application of multimedia services.

The multicast-to-unicast conversion technology supported by the RG-MAP920-SF-M(V3) addresses the problem of video freezing caused by packet loss or high latency in Video on Demand (VoD) and other multicast applications on wireless networks, improving the user experience in multicast video services.

Flexible and Comprehensive Security Policies

User Data Encryption and Security

The RG-MAP920-SF-M(V3) supports a complete data security protection mechanism. It supports Wired Equivalent Privacy (WEP), Temporal Key Integrity Protocol (TKIP), and Advanced Encryption Standard (AES) encryption technologies to ensure data transmission security on wireless networks.

Radio Security

When used with Ruijie RG-UNC and the RG-WS series AC, the RG-MAP920-SF-M(V3) can enable the radio detection and scan mechanism to detect rogue APs or other radio interference sources in real time and report alarms to Ruijie RG-UNC. In this way, network administrators can monitor potential threats and resource usage on each wireless network anytime.

Multiple Easy-to-Use Authentication Modes

The RG-MAP920-SF-M(V3) supports traditional web-based and 802.1X authentication to manage users' network access behavior, and provides convenient authentication modes for customers based on actual scenarios. Working with the RG-WS series AC, the RG-MAP920-SF-M(V3) can also implement MAC authentication bypass (MAB).

MAB eliminates the need for a client to enter the username and password repeatedly after the first login.

DHCP Snooping

Dynamic Host Configuration Protocol (DHCP) snooping enables the RG-MAP920-SF-M(V3) to allow only DHCP Reply packets from trusted interfaces, preventing unauthorized DHCP server attacks. This is because unauthorized DHCP servers seriously affect IP address allocation and management, resulting in network access failures. With DHCP snooping configured, the RG-MAP920-SF-M(V3) can dynamically check source IP addresses of Address Resolution Protocol (ARP) packets to prevent ARP spoofing attacks and source IP address spoofing attacks in the environment where the DHCP server dynamically allocates IP addresses.

ARP Anti-Spoofing

ARP spoofing or poisoning is a common and severe type of network attack. The RG-MAP920-SF-M(V3) supports ARP anti-spoofing in multiple modes. Regardless of whether clients automatically obtain IP addresses from a DHCP server or use static IP addresses, the RG-MAP920-SF-M(V3) records clients' authentic IP and MAC addresses, and compares addresses in ARP packets with recorded IP and MAC addresses when ports receive ARP packets from hosts. Then the RG-MAP920-SF-M(V3) forwards only ARP packets whose addresses match the recorded IP and MAC addresses and discards forged ARP packets. In this way, ARP spoofing packets are blocked from the network to protect STAs against ARP attacks.

Proactive Defense Against Various DoS Attacks

Due to network openness, computers may be attacked by viruses or attackers may attack network devices and servers for various purposes, resulting in network unavailability. For example, ARP flood attacks cause the gateway to fail to respond to requests. Internet Control Message Protocol (ICMP) flood attacks paralyze network devices due to high CPU load. DHCP flood attacks lead to address exhaustion of a DHCP server, preventing authorized users from obtaining IP addresses for network access.

The RG-MAP920-SF-M(V3) adopts the innovative Network Foundation Protection Policy (NFPP) technology to limit the rate for sending ARP packets, ICMP request packets, DHCP Request packets, and other packets to the network. The RG-MAP920-SF-M(V3) discards packets whose rate exceeds the threshold, identifies attacks, and isolates clients launching attacks. In this way, basic networks are protected against network attacks, ensuring network stability.

Management Information Security

Through Secure Shell (SSH) and Simple Network Management Protocol version 3 (SNMPv3), the RG-MAP920-SF-M(V3) encrypts management information in Telnet and SNMP processes, ensuring information security of management devices and preventing attackers from attacking and controlling devices. Telnet access control based on the source IP address means fine-grained device management and control. With this function, only the devices with IP addresses configured by administrators can connect to the RG-MAP920-SF-M(V3), enhancing network management security.

Rich and Comprehensive Management Policies

Simplified ZTP Deployment

When operating in Fit mode, the RG-MAP920-SF-M(V3) requires no pre-configuration prior to installation. During onsite deployment and subsequent maintenance, the replacement RG-MAP920-SF-M(V3) can automatically inherit its configuration from the AC without requiring manual reconfiguration. This significantly reduces the effort and cost associated with deployment and maintenance.

Comprehensive Remote Management

The working parameters of the RG-MAP920-SF-M(V3) deployed on a network, such as the channel number, power level, SSID settings, security settings, and VLAN assignment can be uniformly managed by the remote RG-WS series AC. This reduces local management resource consumption and centralizes the management permission, improving the security and management efficiency of the wireless network.

Web-based Management

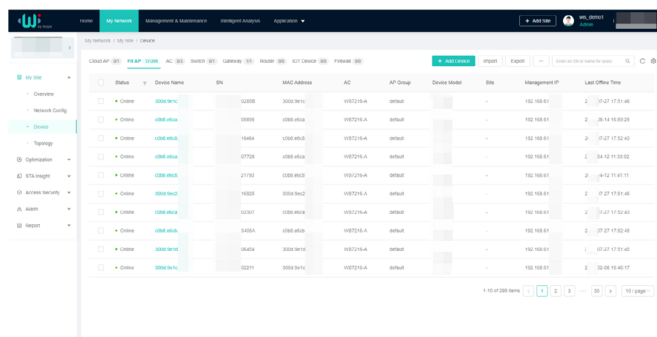
The RG-MAP920-SF-M(V3) allows users to configure wireless networks through eWeb of the AC. On eWeb, O&M personnel can manage APs as well as stations (STAs) connected to the APs, limit the rates, and restrict network access behaviors of the STAs, facilitating management and maintenance of wireless networks.

04 Solution Scalability Capabilities

Ruijie WIS Cloud Management Network Solution (WIS Cloud for short, <https://wis.ruijienetworks.com/>) provides full-lifecycle cloud management network services covering network procurement, planning, deployment, acceptance, and O&M. When the RG-MAP920-SF-M(V3) is connected to WIS Cloud, it can meet various needs in multiple scenarios including planning, deployment, acceptance, and O&M through cloud management, cloud O&M, cloud authentication, and other value-added services (VASS) provided by WIS Cloud.

Network-Wide Cloud Management

WIS Cloud 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.

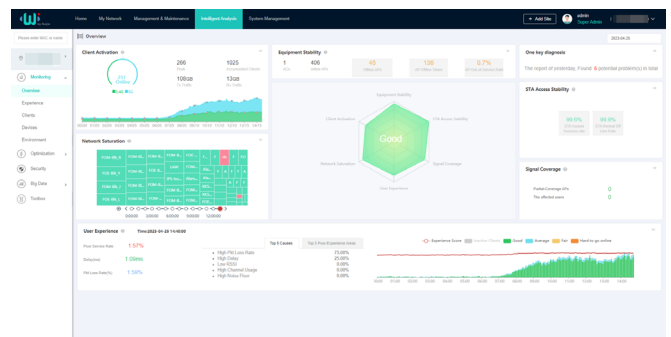


Device ID	Device Name	SN	MAC Address	AC	AP Group	Device Model	Site	Management IP	Last Offline Time
1	WIS-AP-001	10000	0000-0000-0000	WIS-AC-001	WIS-AP-001	WIS-AP-001	WIS-AP-001	192.168.1.1	2023-04-24 10:00:00
2	WIS-AP-002	10001	0000-0000-0001	WIS-AC-001	WIS-AP-002	WIS-AP-002	WIS-AP-002	192.168.1.2	2023-04-24 10:00:00
3	WIS-AP-003	10002	0000-0000-0002	WIS-AC-001	WIS-AP-003	WIS-AP-003	WIS-AP-003	192.168.1.3	2023-04-24 10:00:00
4	WIS-AP-004	10003	0000-0000-0003	WIS-AC-001	WIS-AP-004	WIS-AP-004	WIS-AP-004	192.168.1.4	2023-04-24 10:00:00
5	WIS-AP-005	10004	0000-0000-0004	WIS-AC-001	WIS-AP-005	WIS-AP-005	WIS-AP-005	192.168.1.5	2023-04-24 10:00:00
6	WIS-AP-006	10005	0000-0000-0005	WIS-AC-001	WIS-AP-006	WIS-AP-006	WIS-AP-006	192.168.1.6	2023-04-24 10:00:00
7	WIS-AP-007	10006	0000-0000-0006	WIS-AC-001	WIS-AP-007	WIS-AP-007	WIS-AP-007	192.168.1.7	2023-04-24 10:00:00
8	WIS-AP-008	10007	0000-0000-0007	WIS-AC-001	WIS-AP-008	WIS-AP-008	WIS-AP-008	192.168.1.8	2023-04-24 10:00:00
9	WIS-AP-009	10008	0000-0000-0008	WIS-AC-001	WIS-AP-009	WIS-AP-009	WIS-AP-009	192.168.1.9	2023-04-24 10:00:00
10	WIS-AP-010	10009	0000-0000-0009	WIS-AC-001	WIS-AP-010	WIS-AP-010	WIS-AP-010	192.168.1.10	2023-04-24 10:00:00

Wireless Network Visualization

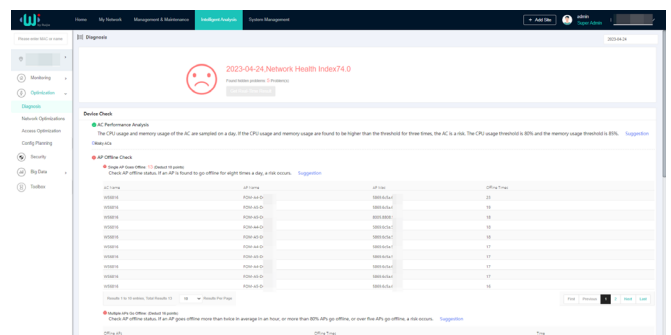
The overview function module of WIS Cloud provides a comprehensive view of the network running status from the perspective of overview, experience, users, devices, and environment. The network running information includes the following items:

- 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 Cloud, 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 Cloud enables you to rapidly assess the state of your live network. WIS Cloud can locate faulty areas, APs, and STAs, and provides potential risks and corresponding optimization suggestions.



The screenshot displays the WIS Cloud dashboard with network diagnosis results. Key elements include:

- 2023-04-24 Network Health Index V4.0:** A red warning icon indicating a health index of 7.0.
- Device Check:** A table showing the results of a device check, including AP Name, AP ID, AP Type, and AP Status.
- AP Health Index:** A table showing the health index for each AP, with a peak of 7.0.
- AP Health Index:** A table showing the health index for each AP, with a peak of 7.0.

05 Specifications

Hardware Specifications

Hardware Specifications	RG-MAP920-SF-M(V3)
802.11n	Four spatial streams - Radio 1 – 2.4 GHz: 2x2 MIMO, two spatial streams - Radio 2 – 5 GHz: 2x2 MIMO, two spatial streams Channels: - Radio 1 – 2.4 GHz: 20 MHz and 40 MHz - Radio 2 – 5 GHz: 20 MHz and 40 MHz Combined peak data rate: 600 Mbps - Radio 1 – 2.4 GHz: 6.5 Mbps to 300 Mbps (MCS0 to MCS15) - Radio 2 – 5 GHz: 6.5 Mbps to 300 Mbps (MCS0 to MCS15) Radio technologies: Orthogonal Frequency-Division Multiplexing (OFDM) Modulation types: BPSK, QPSK, 16-QAM, 64-QAM Packet aggregation: - Aggregate MAC Protocol Data Unit (A-MPDU) - Aggregate MAC Service Data Unit (A-MSDU) DFS CDD/CSD MRC STBC LDPC TxBF
802.11ac	Two spatial streams - Radio 2 – 5 GHz: 2x2 downlink MU-MIMO, two spatial streams Channels: - Radio 2 – 5 GHz: 20 MHz, 40 MHz, 80 MHz, and 160 MHz Combined peak data rate: 1.733 Gbps - Radio 2 – 5 GHz: 6.5 Mbps to 1.733 Gbps (MCS0 to MCS9) Radio technologies: OFDM Modulation types: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM Packet aggregation: - A-MPDU - A-MSDU DFS CDD/CSD MRC STBC LDPC TxBF
802.11ax	Four spatial streams - Radio 1 – 2.4 GHz: 2x2 uplink/downlink MU-MIMO, two spatial streams - Radio 2 – 5 GHz: 2x2 uplink/downlink MU-MIMO, two spatial streams Channels: - Radio 1 – 2.4 GHz: 20 MHz and 40 MHz - Radio 2 – 5 GHz: 20 MHz, 40 MHz, 80 MHz, and 160 MHz Combined peak data rate: 2.976 Gbps - Radio 1 – 2.4 GHz: 7.3 Mbps to 574 Mbps (MCS0 to MCS11) - Radio 2 – 5 GHz: 7.3 Mbps to 2.402 Gbps (MCS0 to MCS11)

Hardware Specifications	RG-MAP920-SF-M(V3)
802.11ax	Radio technologies: Uplink/Downlink Orthogonal Frequency-Division Multiple Access (OFDMA) Modulation types: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM Packet aggregation: ● A-MPDU ● A-MSDU DFS CDD/CSD MRC STBC LDPC TxBF WPA3
802.11be	Four spatial streams ● Radio 1 – 2.4 GHz: 2x2 uplink/downlink MU-MIMO, two spatial streams ● Radio 2 – 5 GHz: 2x2 uplink/downlink MU-MIMO, two spatial streams Channels: ● Radio 1 – 2.4 GHz: 20 MHz and 40 MHz ● Radio 2 – 5 GHz: 20 MHz, 40 MHz, 80 MHz, and 160 MHz Combined peak data rate: 3.570 Gbps ● Radio 1 – 2.4 GHz: 7.3 Mbps to 688 Mbps (MCS0 to MCS13) ● Radio 2 – 5 GHz: 7.3 Mbps to 2.882 Gbps (MCS0 to MCS13) Radio technologies: Uplink/Downlink OFDMA Modulation types: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM, 4096-QAM Packet aggregation: ● A-MPDU ● A-MSDU DFS CDD/CSD MRC STBC LDPC TxBF WPA3
Antenna	Wi-Fi ● 2.4 GHz: Two built-in omnidirectional smart antennas, with the peak antenna gain of 5.73 dBi ● 5 GHz: Two built-in omnidirectional smart antennas, with the peak antenna gain of 6.49 dBi Bluetooth ● One built-in omnidirectional antenna, with the peak antenna gain of 3.35 dBi
Port	1 x 2.5G SFP port, which is compatible with the 1G SFP transceiver 4 x 10/100/1000BASE-T ports 1 x micro USB console port 1 x Bluetooth 5.3
Status LED	1 x system status LED ● AP power-on status ● Software initialization status and upgrade status ● Uplink service port status ● Wireless user online status ● CAPWAP tunnel timeout ● Specific AP locating
Button	1 x Reset button ● Press the button for shorter than 2 seconds. Then the device restarts. ● Press the button for longer than 5 seconds. Then the device restores to factory settings.

Hardware Specifications	RG-MAP920-SF-M(V3)
Dimensions (W x H x D)	Main unit: 86 mm x 160 mm x 38 mm (3.39 in. x 6.30 in. x 1.5 in.) Shipping: 347 mm x 375 mm x 289 mm (13.66 in. x 14.76 in. x 11.38 in.)
Weight	Main unit: 0.45 kg (0.99 lbs) Mounting bracket: 0.05 kg (0.11 lbs) Shipping: 9.78 kg (21.56 lbs)
Mounting	Mounting in the 86 mm x 86 mm (3.39 in. x 3.39 in.) junction box or wall-mounting
Lock option	Kensington lock
Input power supply	The AP supports the following power supply modes: 48 V DC/0.25 A power input over the DC connector - IEEE 802.3af-compliant PoE power input using hybrid cables
Maximum power consumption	Maximum power consumption: 12 W - DC power: 12 W, 2.4 GHz radio 2x2, 5 GHz radio 2x2 802.3af (PoE): 12 W, 2.4 GHz radio 2x2, 5 GHz radio 2x2 - Idle mode: 9 W
External power supply	When 802.3at (PoE+) power supply is used, the AP can provide 5 V/0.5 A power over the USB port to supply power to or connect to an IoT module.
Environment	Storage temperature: -40°C to +70°C (-40°F to +158°F) Storage humidity: 0% RH to 95% RH (non-condensing) Storage altitude: -500 m to +5,000 m (-1640.42 ft. to +16,404.20 ft.) Operating temperature: -10°C to +40°C (14°F to 104°F) Operating humidity: 5% RH to 95% RH (non-condensing) Operating altitude: -500 m to +5,000 m (-1640.42 ft. to +16,404.20 ft.) Note: At an altitude in the range of 1,800–5,000 m (5,905.51–16,404.20 ft.), every time the altitude increases by 220 m (721.78 ft.), the maximum temperature decreases by 1°C (1.8°F).
Mean Time Between Failure (MTBF)	200,000 hours (22 years) at the operating temperature of 25°C (77°F)
System memory	512 MB DDR3L, 256 MB flash
Transmit power	2.4 GHz - Maximum transmit power: +20 dBm (100 mW) - Minimum transmit power: +12 dBm (15.85 mW) 5 GHz - Maximum transmit power: +20 dBm (100 mW) - Minimum transmit power: +10 dBm (10 mW) Note: - Adjust the transmit power by percentage (recommended), with 1 dBm increments. - The transmit power is limited by local regulatory requirements. For details, see WLAN Country or Region Codes and Channel Compliance.

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

Wi-Fi Radio Performance	RG-MAP920-SF-M(V3)		
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	18 dBm	-91 dBm
	54 Mbps	16 dBm	-74 dBm
2.4 GHz 802.11n (HT20)	MCS0	18 dBm	-92 dBm
	MCS7	16 dBm	-72 dBm

Wi-Fi Radio Performance	RG-MAP920-SF-M(V3)		
2.4 GHz 802.11n (HT40)	MCS0	18 dBm	-89 dBm
	MCS7	16 dBm	-70 dBm
2.4 GHz 802.11ax (HE20)	MCS0	18 dBm	-92 dBm
	MCS11	14 dBm	-62 dBm
2.4 GHz 802.11ax (HE40)	MCS0	18 dBm	-89 dBm
	MCS11	14 dBm	-59 dBm
2.4 GHz 802.11be (EHT20)	MCS0	18 dBm	-91 dBm
	MCS13	12 dBm	-57 dBm
2.4 GHz 802.11be (EHT40)	MCS0	18 dBm	-89 dBm
	MCS13	12 dBm	-53 dBm
5 GHz 802.11a	6 Mbps	18 dBm	-92 dBm
	54 Mbps	16 dBm	-74 dBm
5 GHz 802.11n (HT20)	MCS0	18 dBm	-92 dBm
	MCS7	16 dBm	-73 dBm
5 GHz 802.11n (HT40)	MCS0	18 dBm	-91 dBm
	MCS7	16 dBm	-71 dBm
5 GHz 802.11ac (VHT20)	MCS0	18 dBm	-92 dBm
	MCS8	15 dBm	-69 dBm
5 GHz 802.11ac (VHT40)	MCS0	18 dBm	-90 dBm
	MCS9	15 dBm	-65 dBm
5 GHz 802.11ac (VHT80)	MCS0	18 dBm	-87 dBm
	MCS9	15 dBm	-63 dBm
5 GHz 802.11ax (HE20)	MCS0	18 dBm	-93 dBm
	MCS11	14 dBm	-62 dBm
5 GHz 802.11ax (HE40)	MCS0	18 dBm	-91 dBm
	MCS11	14 dBm	-60 dBm
5 GHz 802.11ax (HE80)	MCS0	18 dBm	-87 dBm
	MCS11	14 dBm	-57 dBm
5 GHz 802.11ax (HE160)	MCS0	18 dBm	-84 dBm
	MCS11	14 dBm	-54 dBm
5 GHz 802.11be (EHT80)	MCS0	18 dBm	-87 dBm
	MCS13	12 dBm	-51 dBm
5 GHz 802.11be (EHT160)	MCS0	18 dBm	-84 dBm
	MCS13	12 dBm	-48 dBm

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

Software Specifications

Basic Function	RG-MAP920-SF-M(V3)
Applicable software version	RGOS11.9(6)W7B4 or later
WLAN	
Maximum number of associated STAs	1,024 (up to 256 STAs per radio)
Recommended number of STAs	64
Maximum number of BSSIDs	32 (up to 16 BSSIDs per radio)
Maximum number of WLAN IDs	16
STA management	SSID hiding Band steering (preferential access to the 5 GHz radio) 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, traffic, or band Intelligent STA identification (the AC is required)
STA limiting	SSID-based STA limiting Radio-based STA limiting
Bandwidth limiting	STA/SSID/AP-based rate limiting
CAPWAP	IPv4/IPv6 CAPWAP Layer 2 and Layer 3 topology between an AP and an AC An AP can automatically discover the accessible AC. An AP can be automatically upgraded through the AC. An AP can automatically download the configuration file from the AC. CAPWAP through NAT MTU setting and fragmentation over CAPWAP tunnels Encryption over CAPWAP data tunnels Encryption over CAPWAP control tunnels
Data forwarding	Centralized and local forwarding
Wireless roaming	Layer 2 and Layer 3 roaming
Wireless locating	Mobile unit (MU) locating
Application management	Application identification
Security and Authentication	
Authentication and encryption	Remote Authentication Dial-In User Service (RADIUS) EXEC authorization, specifying source IP addresses of RADIUS packets, supporting authentication of other vendors, and built-in authentication server PSK, web-based, 802.1X, WPA, WPA2, and WPA3 authentication MAB Data encryption: WEP (64/128 bits), WPA-Personal, WPA-Enterprise, WPA2-Personal (PSK, TKIP, CCMP), WPA2-Enterprise, WPA3-Personal (SAE, WPA2/WPA3), WPA3-Enterprise (CCMP, GCMP), and WPA3-OWE
Data frame filtering	Allowlist, static blocklist, and dynamic blocklist
WIDS	Wireless Intrusion Detection System (WIDS) User isolation Rogue AP detection and containment

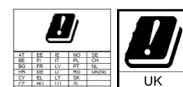
Basic Function	RG-MAP920-SF-M(V3)
Dynamic policy	IP standard ACL, MAC extended ACL, IP extended ACL, expert ACL, and IPv6 ACL Time range-based ACL ACL based on a Layer 2 interface ACL based on a Layer 3 interface Ingress ACL based on a wireless interface Dynamic ACL assignment based on 802.1X authentication (used with an AC)
CPP	CPU Protect Policy (CPP)
NFPP	Network Foundation Protection Policy (NFPP) ARP attack defense, ICMP attack defense, and DHCP attack defense
Routing and Switching	
MAC	Static MAC address and MAC address filtering MAC address table size: 1,024 Maximum number of static MAC addresses: 1,024 Maximum number of filtered MAC addresses: 1,024
Ethernet	Jumbo frame length: 1,518 Full-duplex and half-duplex modes of interfaces Optical transceiver information display, alarms about faults, and diagnosis parameter measurement (QSFP+/SFP+/SFP)
VLAN	Interface-based VLAN assignment Maximum number of SVIs: 256 Maximum number of VLANs: 4,094 VLAN ID range: 1–4,094
ARP	ARP entry aging, gratuitous ARP learning, and proxy ARP Maximum number of ARP entries: 1,024 ARP check
IPv4 services	Static IPv4 address and DHCP-assigned IPv4 address Maximum number of IPv4 addresses configured on each Layer 3 interface: 200 NAT, FTP ALG, and DNS ALG
IPv6 services	IPv6 addressing, Neighbor Discovery (ND), IPv6 ND proxy, ICMPv6, and IPv6 ping IPv6 DHCP client Maximum number of IPv6 addresses configured on each Layer 3 interface: 400
IP routing	IPv4/IPv6 static route Maximum number of static IPv4 routes: 1,024 Maximum number of static IPv6 routes: 1,000
Multicast	Multicast-to-unicast conversion
VPN	PPPoE client IPsec VPN
Network Management and Monitoring	
Network management	NTP server and NTP client SNTP client SNMPv1/v2c/v3 Fault detection and alarms Information statistics collection and logging
Network management platform	Web management (eWeb)
User access management	Console, Telnet, SSH, FTP client, FTP server, and TFTP client
Switchover among Fat, Fit, and cloud modes	When the AP works in Fit mode, it can be switched to Fat mode through an AC. When the AP works in Fat mode, it can be switched to Fit mode through the console port or Telnet. When the AP works in cloud mode, it can be managed through WIS Cloud.

Regulatory Compliance	RG-AP9220(V2)
Regulatory compliance	EN 55032, EN 55035, EN 61000-3-3, EN IEC 61000-3-2, EN 301 489-1, EN 301 489-3, EN 301 489-17, EN 300 328, EN 301 893, EN 300 440, FCC Part 15, EN IEC 62311, IEC 62368-1, EN 62368-1, EN 18031-1, EN 18031-2

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

Note:

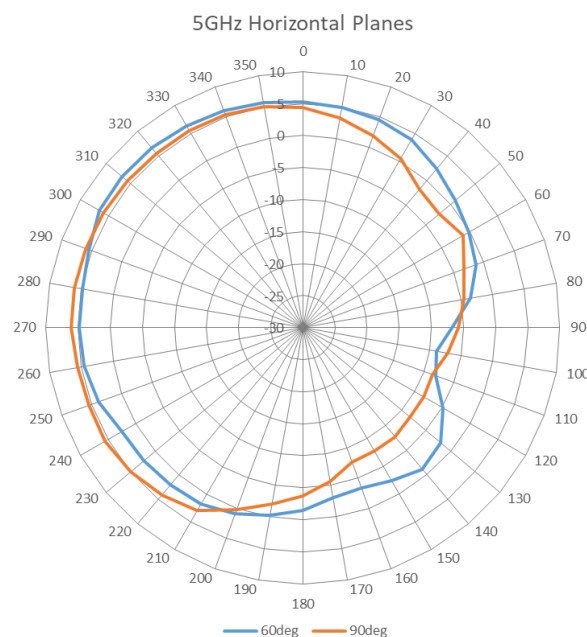
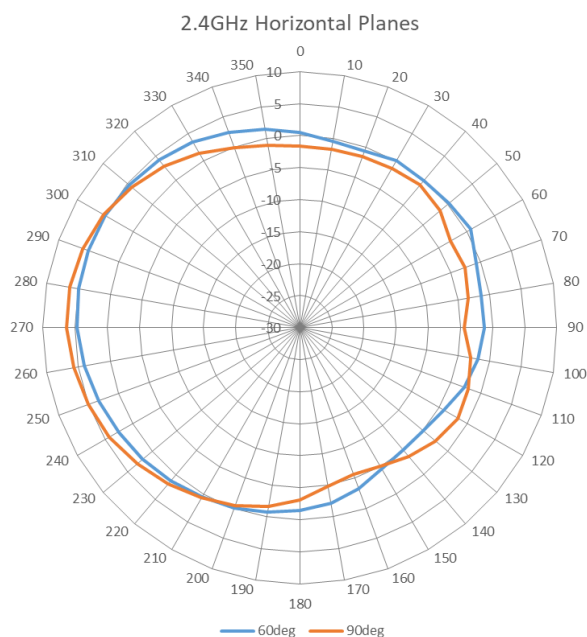
- EU simplified DoC: Hereby, [Ruijie Networks Co., Ltd.] declares that the radio equipment type [RG-MAP920-SF-M(V3)] is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at <https://www.ruijienetworks.com/>.
- UK simplified DoC: Hereby, [Ruijie Networks Co., Ltd.] declares that the radio equipment type [RG-MAP920-SF-M(V3)] is in compliance with UK Radio Equipment Regulation 2017. The full text of the UK declaration of conformity is available at <https://www.ruijienetworks.com/>
- The functions of Wireless Access Systems including Radio Local Area Networks (WAS/RLANs) within the band 5150-5350 MHz for this device are restricted to indoor use only within European Union countries and other relevant European regions (BE/BG/CZ/DK/DE/EE/IE/EL/ES/FR/HR/IT/CY/LV/LT/LU/HU/MT/NL/AT/PL/PT/RO/SI/SK/FI/SE/TR/NO/CH/IS/LI/UK(NI)).
- Ruijie wireless products provide only secure and reliable network protocols and communication ports by default. For details, see [Ruijie Default Protocols and Ports for Wireless Products](#). Proper firewall and security policies can be implemented based on this document to ensure the normal operation of wireless services.



06 Antenna Pattern Plots

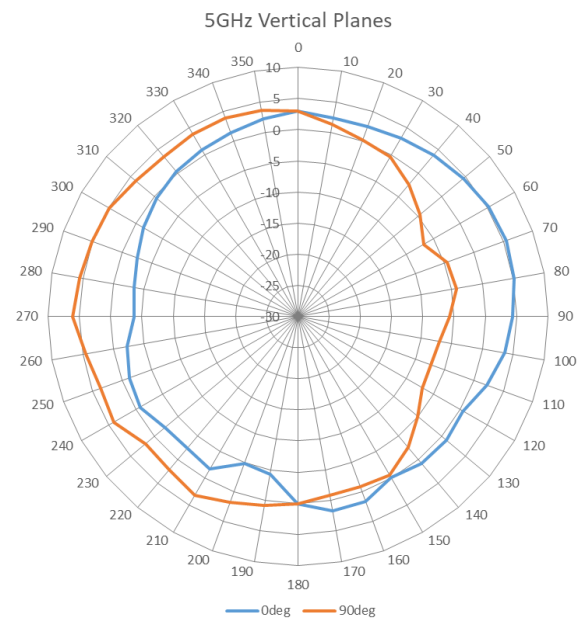
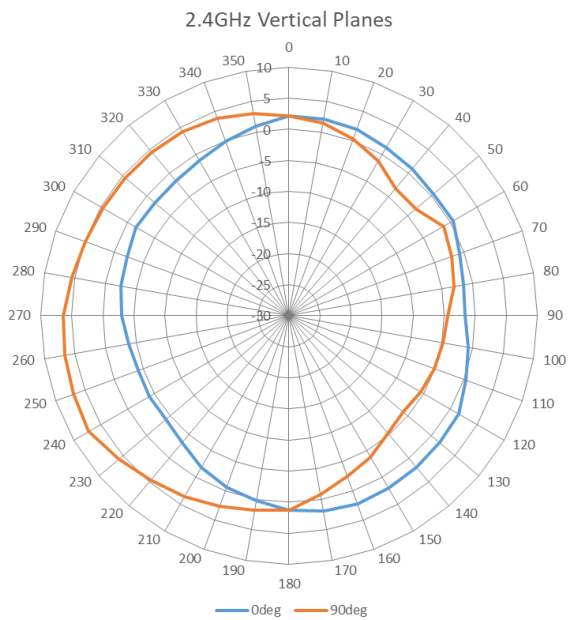
Horizontal Planes (Top View)

The following figure shows the azimuth antenna patterns at 2.4 GHz and 5 GHz radios.



Vertical Planes (Front View)

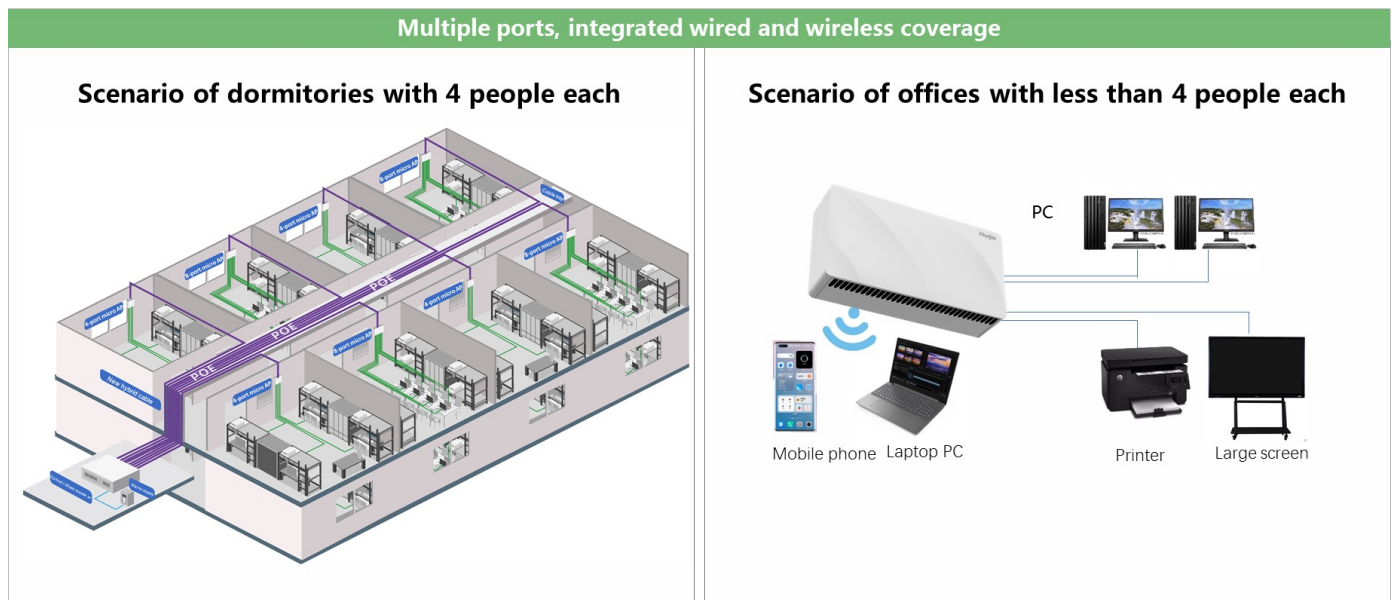
The following figures show the elevation antenna patterns at 2.4 GHz and 5 GHz radios.



Note: Operating frequency bands are country/region-specific and comply with local regulations.

07 Typical Applications

Dormitory and Office Scenarios



Application features:

Ruijie SOE Solution implements long-haul optical communication and high-bandwidth deployment through hybrid cables, effectively satisfying the power supply requirements of APs. With four LAN ports, the RG-MAP920-SF-M(V3) caters for expansion requirements in dormitories and offices.

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

08 Ordering Information

Model	Description	Mandatory/Optional
RG-MAP920-SF-M(V3)	Wi-Fi 7 dual-radio wall-plate access point Up to four spatial streams, peak data rate of 3.570 Gbps - Radio 1 – 2.4 GHz: Two spatial streams, 2x2 MU-MIMO, peak data rate of 688 Mbps - Radio 2 – 5 GHz: Two spatial streams, 2x2 MU-MIMO, peak data rate of 2.882 Gbps It complies with 802.11a/b/g/n/ac/ax/be, and supports switchover among Fat, Fit, and cloud modes. It provides PoE and DC power supply. Note: - The DC power supply needs to be purchased separately, and the output voltage/current must be 48 V/0.25 A. - When the AP adopts DC power supply, an adapter with a power of less than 100 W should be used. - The RG-MAP920-SF-M(V3) does not have a built-in optical transceiver by default, and BIDI optical transceivers must be used in pairs. Therefore, a pair of optical transceivers needs to be purchased separately. Recommended 2.5GE models: 2.5G-SFP-LX03-SM1310-BIDI-I and 2.5G-SFP-LX03-SM1550-BIDI-I.	Optional
RG-AM5528-SF	Optical i-Share master AP for Ruijie SOE Solution 24 x 1G/2.5G downlink SFP ports 24 x PoE/PoE+ ports (with four ports supporting PoE/PoE+/PoE++) 4 x 10G uplink SFP+ ports Low noise and power module included In i-Share mode, each master AP consumes eight AC licenses.	Optional
RG-HybridBox	Hybrid box for Ruijie SOE Solution 24 hybrid pigtailed are connected to 24 hybrid cables in the hybrid box.	Optional
Optional	Ruijie SOE O-Share master AP 24 x 1G/2.5G/10G downlink SFP+ ports 24 x PoE/PoE+/PoE++ power supply ports Select the RG-M5800-8VS (8 x 25G SFP28 ports) or the RG-M5800-2QXS (2 x 40G QSFP+ ports) for the uplink slot as needed. The card features low-noise operation and is equipped with one power module. Each device occupies eight AC licenses, and must be equipped with an uplink card upon delivery.	Optional
RG-PA1000I-P-F	1000 W AC power module	Optional
RG-M5800-8VS	Uplink card of the 24-port 10G SOE O-Share master AP RG-AM5832-SF-P 8 x 1G/10G/25G SFP ports, which can be switched to the 10G SFP+ mode simultaneously	Optional
RG-M5800-2QXS	Uplink card of the 24-port 10G SOE O-Share master AP RG-AM5832-SF-P 2 x 40G SFP+ ports	Optional
RG-24DUP1DB48LC	24-port hybrid cable termination box 1 x DB-78 power connector 48 x LC connectors for optical fibers	Optional
2DP48DC-E	Power patch panel: Provides two groups of uplink DB-78 power connectors and 48 downlink power ports. Each group of DB-78 connectors is independently interconnected with 24 power ports. An ODF must be purchased separately.	Optional
RG-OEHC-SM-1B6A2-2x0.5-I-305	Indoor single-core 2 x 0.5 mm ² hybrid cable, single roll, 305 m (1,000.66 ft) in length	Optional
RG-OEHC-SM-2B6A2-2x1.0-R-I-305	Indoor dual-core 2 x 1.0 mm ² hybrid cable, single roll, 305 m (1,000.66 ft) in length	Optional
RG-OEHC-SM-2B6A2-2x1.5-O-1000	Outdoor dual-core 2 x 1.5 mm ² hybrid cable, single roll, 1,000 m (3,280.84 ft) in length	Optional

09 Package Contents

Item	Quantity
RG-MAP920-SF-M(V3)	1
Mounting bracket	1
M4 x 20 mm Phillips pan head screw	2
PM3 x 3.5 mm Torx screw	1
Quick Installation Guide	1
Warranty Card and Hazardous Substance Table	1
Ruijie wireless product management software (pre-installed on the AP)	1

10 Warranty

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

- Warranty terms: <https://www.ruijie.com/support/servicepolicy>
- Warranty period: <https://www.ruijie.com/support/servicepolicy/Service-Support-Summary/>

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

12 More Information

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

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



Ruijie Networks Co., Ltd.

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