

RG-AM5832-SF-P

Optical i-Share Master
Access Point



01 Product Overview

The RG-AM5832-SF-P is a high-performance optical i-Share master access point (AP) for Ruijie SOE Solution based on the Simplified Optical Campus Solution. The RG-AM5832-SF-P supports the flexible i-Share mode. It can automatically switch between i-Share mode and common mode based on access devices. The RG-AM5832-SF-P provides 24 downlink 10GE SFP+ ports (compatibility with 2.5GE and 1GE modules), which can satisfy various access requirements.

The RG-AM5832-SF-P also has one expansion slot and supports the RG-M5800-8VS (with eight 25GE SFP28 ports) or RG-M5800-2QXS (with two 40GE QSFP+ ports) subcard for uplink transmission, further improving the performance.

The RG-AM5832-SF-P is designed considering factors such as wireless network security, radio control, mobile access, QoS, and seamless roaming, ensuring data forwarding, security, and access control for wireless users.

The RG-AM5832-SF-P can be connected to 24 optical micro APs or other optical APs through hybrid cables, meeting the requirements for high-performance wireless access in scenarios such as dormitories and offices. The RG-AM5832-SF-P is applicable to a wide range of scenarios covering large-sized enterprises, schools, and hospitals, delivering smooth and high-speed network access experience.

02 Product Appearance



Front View of the RG-AM5832-SF-P



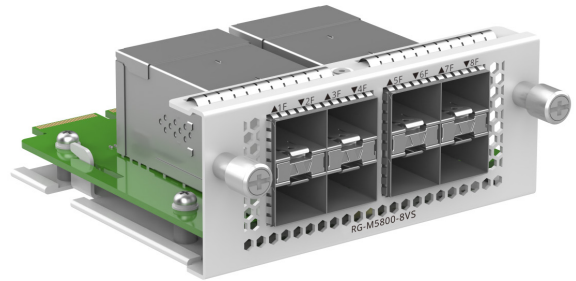
Rear View of the RG-AM5832-SF-P



Side View of the RG-AM5832-SF-P



Side View of the RG-M5800-2QXS



Side View of the RG-M5800-8VS

03 Product Features

Simplified Optical Ethernet Solution Architecture

Fiber to the Room and Exclusive Bandwidth

Ruijie Simplified Optical Ethernet Solution adopts the architecture of fiber to the room (FTTR) and one fiber for each room. Each room has exclusive line and bandwidth resources, eliminating the bottleneck of the optical split ratio. The traditional passive optical network (PON) solution architecture adopts 1:8 or 1:16 optical splitting, which can hardly meet the requirements of high-bandwidth applications. Ruijie Simplified Optical Ethernet Solution delivers a 10 Gbps high-speed optical network, fully unleashing the performance of Wi-Fi 6 and Wi-Fi 7 devices and providing high-speed wireless services.

Easy Construction and Deployment

Compared with traditional Ethernet cables, optical fibers are characterized by long communication distance, small size, and long service life.

With the technical base of the i-Share+ solution, Ruijie Simplified Optical Ethernet Solution uses hybrid cables for power and data transmission, ensuring lossless data transmission over at least 1.1 km (0.68 miles). Even in modern high buildings, signals can reach each room in a building from the ELV room over optical fibers. This architecture helps customers minimize the number of relay devices in buildings, simplifying network management and achieving flat network management.

Compared with traditional copper cables, hybrid cables used in Ruijie Simplified Optical Ethernet Solution provide a smaller cross-sectional area and higher flexibility. Moreover, hybrid cables have obvious advantages over Ethernet cables in terms of cable tray design, deployment, and cabling. This facilitates intelligent ELV design,

construction, as well as management and maintenance.

Ethernet cables only have a service life of 3 to 5 years on average. However, optical fibers have a service life of up to 10 years, greatly reducing the O&M burden for customers.

Open, Compatible, and Intelligent O&M

By adopting Ruijie Simplified Optical Ethernet Solution, customers can reuse original device deployment and utilize optical fibers and devices of other vendors on the market to protect benefits and maximize the return on investment (ROI).

Ruijie Simplified Optical Ethernet Solution inherits the management mode of the i-Share+ solution. In i-Share mode, there is no need to deliver configurations to optical micro APs and deploy power over Ethernet (PoE) switches. The RG-AM5832-SF-P is ideal for future-proof wireless network development focused on high performance, high density, small scale, and microcell capabilities.

Flexible Scalability and Worry-Free Service

Ruijie Simplified Optical Ethernet Solution fully considers the room-level bandwidth expansion due to service upgrades in the future. The solution uses 1:1 optical fiber links to rooms, eliminating the need to re-calculate the optical split ratio. The optical fiber links adapt to the port bandwidth, stamping out cable redeployment. Therefore, only the optical i-Share master AP or optical micro AP needs to be replaced to achieve quick bandwidth upgrade in a room.

Intelligent Power Supply and Worry-Free Security

The RG-AM5832-SF-P provides 24 PoE-out ports, with a maximum output power of 1,600 W. It can supply power to 24 optical micro APs (compliant with the IEEE 802.3bt standard and supporting a maximum power consumption per AP of 66 W). This addresses the issues such as the department coordination, electric safety, and electricity

charge allocation of local power supply, dramatically improving management and O&M efficiency.

Multi-Tier Distributed System Architecture

Performance Comes First: Multi-Tier Distributed Architecture

With the continuous implementation of the Broadband China strategy, there is a growing demand for higher bandwidth on wireless networks. In this case, Ruijie Simplified Optical Ethernet Solution adopts a multi-tier distributed architecture. Different modules are employed for data forwarding and service management on the master AP, while 25GE or 40GE uplink ports can be used to eliminate the data transmission bottleneck. The optical micro AP deployed indoors adopts an independent CPU for data processing and forwarding, and an independent radio frequency chipset for multi-user air interface scheduling. The multi-tier distributed architecture consisting of the optical i-Share master AP and optical micro APs delivers high performance for Ruijie Simplified Optical Ethernet Solution.

High Performance and Reliability

Intelligent Local Forwarding

The RG-AM5832-SF-P adopts Ruijie's intelligent local forwarding technology, eliminating the traffic bottleneck of wireless access controllers (ACs). The data forwarding mode of the RG-AM5832-SF-P can be pre-configured on a Ruijie RG-WS series AC. Then the RG-AM5832-SF-P determines whether data needs to be forwarded by the AC based on the SSID or user VLAN, or be sent to a wired network for data exchange.

The local forwarding technology enables the master AP to forward latency-sensitive data that requires real-time high-performance transmission over a wired network. This can greatly reduce the traffic forwarding burden of the AC to better adapt to high-throughput transmission on 802.11ax networks.

Roaming Access

When used with RG-WS series ACs, the RG-AM5832-SF-P can ensure seamless roaming between Layer 2 and Layer 3 networks for stations (STAs) when STAs roam between multiple APs. In this way, data access is not interrupted.

Abundant QoS Policies

The RG-AM5832-SF-P supports abundant QoS policies, such as bandwidth limiting based on the WLAN, AP, and STA, and preferential bandwidth guarantee for key data applications.

The RG-AM5832-SF-P utilizes the multicast-to-unicast conversion technology to solve the problem of video freezing caused by packet loss and long delay in video on demand (VoD) and other multicast applications on wireless networks, improving the experience of multicast

video services.

Wireless IPv6 Access

The RG-AM5832-SF-P supports IPv6 features, achieving IPv6 forwarding on wireless networks. IPv4 and IPv6 users can automatically connect to ACs through tunnels to support IPv6 applications on wireless networks.

Flexible and Comprehensive Security Policies

User Data Encryption and Security

The RG-AM5832-SF-P supports a complete data security protection mechanism. It supports WEP, TKIP, and AES encryption technologies to ensure data transmission security on wireless networks.

Radio Security

When used with Ruijie RG-SNC unified network management system (NMS) and RG-WS series ACs, the RG-AM5832-SF-P can enable the radio detection and scan mechanism to discover unauthorized APs or other radio interference sources in real time and report alarms to the NMS. In this way, network administrators can monitor potential threats and resource usage on each wireless network anytime.

Multiple Easy-to-Use Authentication Methods

The RG-AM5832-SF-P not only supports traditional web-based and 802.1X authentication to manage users' network access behavior but also provides convenient authentication methods for customers based on actual scenarios. Working with RG-WS series ACs, the RG-AM5832-SF-P can implement MAC authentication bypass (MAB), SMS-based authentication, and QR code-based guest authentication.

When accessing the Internet through MAB authentication, wireless users only need to enter their usernames and passwords upon first login. This allows users to directly access the Internet without the need for re-authentication.

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

QR code-based guest authentication is another convenient method for guests to access the Internet. After connecting to a wireless network, the guest will receive a QR code prompt. The guest can access the Internet after being authorized by the visited employee. Guest behaviors are associated with the visited employee to ensure high security.

DHCP Snooping

DHCP snooping enables the RG-AM5832-SF-P to allow only DHCP Reply packets from trusted interfaces, preventing unauthorized DHCP server attacks. This is because unauthorized DHCP server seriously affects IP address

allocation and management, resulting in network access failures. With DHCP snooping configured, the RG-AM5832-SF-P can dynamically check source IP addresses of 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

Address Resolution Protocol (ARP) spoofing (or poisoning) is a type of common and severe network attacks. The RG-AM5832-SF-P supports ARP anti-spoofing in multiple modes. Regardless of whether STAs automatically obtain IP addresses from a DHCP server or use static IP addresses, the RG-AM5832-SF-P records STAs' 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-AM5832-SF-P 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 infected with 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-AM5832-SF-P adopts the innovative Network Foundation Protection Policy (NFPP) technology to limit the rate for sending ARP packets, ICMP requests, DHCP requests, and other packets to networks. The RG-AM5832-SF-P discards packets whose rate exceeds the threshold, identifies attacks, and isolates STAs launching attacks. In this way, basic networks are protected against network attacks, ensuring network stability.

Management Information Security

Through the Secure Shell (SSH) and Simple Network Management Protocol version 3 (SNMPv3), the RG-AM5832-SF-P encrypts management information in Telnet and SNMP processes, ensuring information security of management devices and preventing hackers 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-AM5832-SF-P, enhancing network management security.

Rich Management Policies

Zero Touch Provisioning and Replacement

The RG-AM5832-SF-P does not need to be pre-configured before installation. During on-site installation and subsequent maintenance, the RG-AM5832-SF-P can inherit the configuration from the AC without reconfiguration when it is replaced. This greatly reduces the workload and cost of implementation and maintenance.

Comprehensive Remote Management

The working parameters of the RG-AM5832-SF-P deployed on a network, such as 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-AM5832-SF-P allows users to configure wireless networks through the web management system of the AC. On the web management system, O&M personnel can manage APs as well as STAs connected to the APs, limit the rates, and restrict network access behaviors of the STAs, facilitating management and maintenance of wireless networks.

04 Specifications

Hardware Specifications

Dimensions and Weight

Dimensions and Weight	RG-AM5832-SF-P
Dimensions (W x D x H)	442 mm x 420 mm x 43.6 mm (17.40 in. x 16.54 in. x 1.72 in.)
Shipping dimensions (W x D x H)	570 mm x 565 mm x 172 mm (22.44 in. x 22.24 in. x 6.77 in.)
Rack size	1 RU
Unit weight	5.85 kg (12.90 lbs)
Shipping weight	7.95 kg (17.53 lbs)
Mounting	Rack-mount

Ports

Ports	RG-AM5832-SF-P
Fixed service port	Uplink: RG-M5800-2QXS subcard (optional): 2 x 40GE QSFP+ ports RG-M5800-8VS subcard (optional): 8 x 25GE SFP28 ports, compatibility with 10GE and 1GE modules. Downlink: 24 x 10GE SFP+ ports, compatibility with 2.5GE and 1GE modules. 24 x PoE-out ports, supporting PoE/PoE+/PoE++, with a maximum PoE output power of 90 W per port and a maximum PoE output power of 1,600 W.
Fixed management port	1 x RJ45 10/100/1000Base-T auto-negotiation management port 1 x RJ45 console port
USB port	1 x USB 2.0 port (Type A connector)
Status LED	24 x SFP+ port status LEDs, also indicating the PoE status RG-M5800-2QXS subcard (optional): 2 x QSFP+ port status LEDs RG-M5800-8VS subcard (optional): 8 x SFP28 port status LEDs 1 x system status LED 2 x power status LEDs 1 x management (MGMT) port status LED
Button	1 x Reset button Press and hold the button for less than 2 seconds to reset the device. Press and hold the button for more than 5 seconds to restore the device to factory settings. 1 x LED mode button Used to switch the status LED to indicate either PoE status or Link/Act status.

Power Supply and Consumption

Power Supply and Consumption	RG-AM5832-SF-P
Input power supply	The RG-AM5832-SF-P supports two hot-swappable 1,000 W power modules, AC input, and DC output for system power supply. The RG-AM5832-SF-P is delivered with only one AC power module, and you can purchase an additional AC power module. Rated input voltage range: AC input: 100 V AC to 130 V AC, 50/60 Hz AC input: 200 V AC to 240 V AC, 50/60 Hz HVDC input: 240 V DC Maximum input current: 12 A (input voltage: 100 V AC to 130 V AC) 8 A (input voltage: 200 V AC to 240 V AC) 8A (input voltage: 240 V DC) Output voltage: 56 V DC for sourcing power to the RG-AM5832-SF-P and 56 V DC for external power supply
External power supply	24 x PoE-out ports, supporting PoE, PoE+, and PoE++ Output voltage: 56 V Max. output current per port: 1.6 A Max. PoE output power per port: 90 W Max. PoE output power: 1,600 W
Max. power consumption	< 200 W (without load) < 2,000 W (full load)

Environment and Reliability

Environment and Reliability	RG-AM5832-SF-P
Temperature	Operating temperature: 0°C to 45°C (32°F to 113°F) at an altitude in the range of 0 m to 1,800 m (5,905.51 ft.) Storage temperature: -40°C to +70°C (-40°F to +158°F) At an altitude in the range of 1,800 m to 5,000 m (5,905.51 ft. to 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).
Altitude	Operating altitude: -500 m to 5,000 m (-1,640.42 ft. to 16,404.20 ft.) Storage altitude: -500 m to 5,000 m (-1,640.42 ft. to 16,404.20 ft.)
Humidity	Operating humidity: 10% RH to 90% RH (non-condensing) Storage humidity: 5% RH to 95% RH (non-condensing)
Lightning protection	AC power connector: differential mode ±6 kV, common mode ±6 kV PoE-out port: differential mode ±2 kV, common mode ±6 kV
Fan	Fault alarming and speed adjustment

Software Specifications

Software Specification	RG-AM5832-SF-P
Applicable software version	RGOS12.6(3)B0401 or later

WLAN

Software Specification	RG-AM5832-SF-P
Max. number of associated STAs	1,536
Max. number of BSSIDs	64
STA management	SSID hiding Band steering (When used with an AC, the master AP enables STAs to preferentially access the 5 GHz band.)

Security

Software Specification	RG-AM5832-SF-P
Authentication and encryption	Remote Authentication Dial-In User Service (RADIUS) PSK, Web-based authentication, and 802.1X authentication Data encryption: WPA (TKIP), WPA-PSK, WPA2 (AES), WEP (64/128-bit) QR code-based guest authentication, SMS-based authentication, and MAB authentication (The master AP needs to work with an RG-WS series AC.)

Software Specification	RG-AM5832-SF-P
Data frame filtering	Allowlist, static blocklist, and dynamic blocklist
WIDS	Wireless Intrusion Detection System (WIDS) User isolation Rogue AP detection and containment
ACL	Dynamic ACL assignment based on 802.1X authentication (The master AP needs to work with an AC.)
CPU Protect Policy (CPP)	Supported
NFPP	Supported

Routing and Switching

Software Specification	RG-AM5832-SF-P
MAC	MAC address auto-learning and MAC address entry aging Static and dynamic MAC address entries Source MAC address filtering MAC address limit learned on an interface
Ethernet	Jumbo frame length: 9,216 IEEE 802.1p and IEEE 802.1Q Optical module information displaying, fault alarming, and diagnostic parameter measurement (QSFP+/SFP28/SFP+/SFP)
VLAN	Port-based VLAN Max. number of SVIs: 1,000 Number of VLANs that can be created: 4,094 Available VLAN ID range: 1 to 4,094
ARP	ARP entry aging, gratuitous ARP learning, and ARP proxy ARP entries: 24,000 ARP check
IPv4 services	Static IPv4 address and DHCP-assigned IPv4 address DHCP server and DHCP client DHCP snooping DNS client and DNS proxy NTP server, NTP client, and SNTP client
IPv6 services	Manually configured and automatically created IPv6 addresses IPv6 CAPWAP tunnel IPv6 neighbor discovery (ND), IPv6 ND proxy, ICMPv6, and IPv6 ping DNSv6 client NTPv6 server and NTPv6 client
IP routing	IPv4/IPv6 static routing Static IPv4 routing table: 24,000 Static IPv6 routing table: 14,000 Static blackhole route
Multicast	Supported

Network Management and Monitoring

Software Specification	RG-AM5832-SF-P
Network management	SNMP v1/v2c/v3 Fault detection and alarming
User access management	Console, Telnet, SSH, TFTP, and FTP

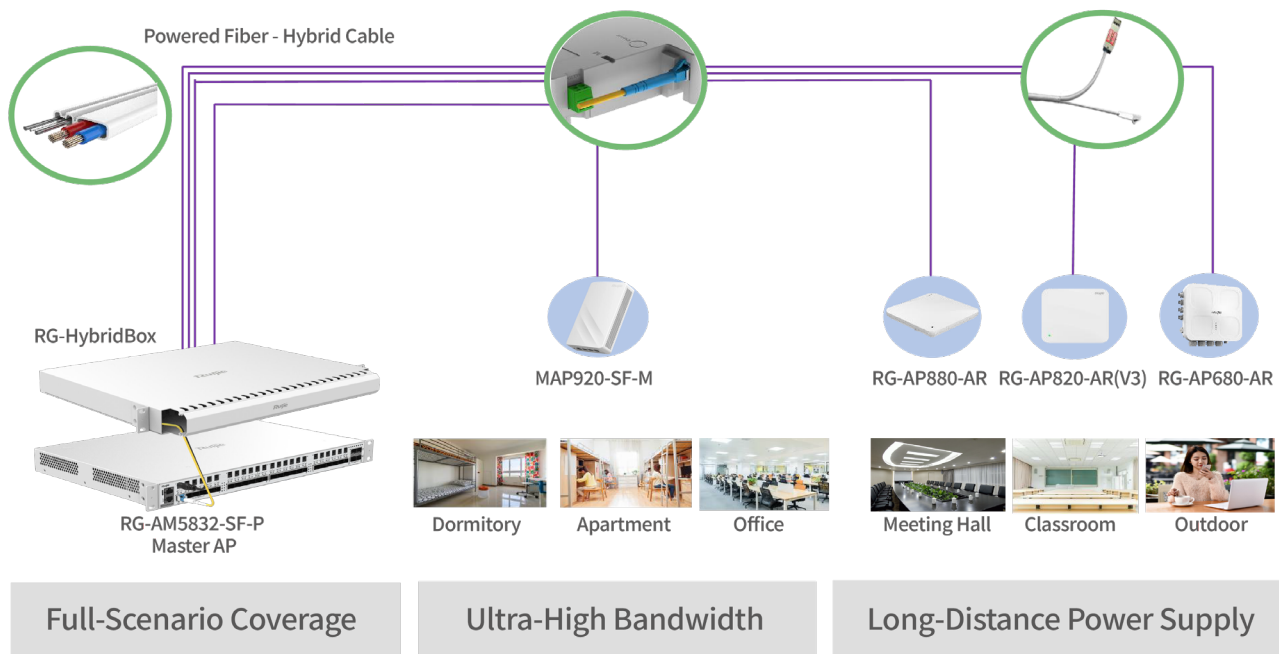
Regulatory Compliance

Regulatory Compliance	RG-AM5832-SF-P
Regulatory compliance	EN 55032, EN 55035, EN 61000-3-3, EN IEC 61000-3-2, EN 300 386, IEC 62368-1, and EN 62368-1

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

05 Application Scenarios

General Scenarios



Ruijie All-Optical i-Share+ Solution Full-Scenario Deployment Diagram of the 24-Port 10G Master AP

Diagram 1

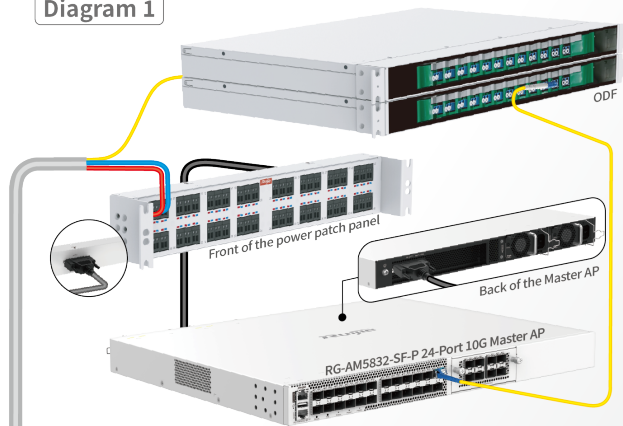
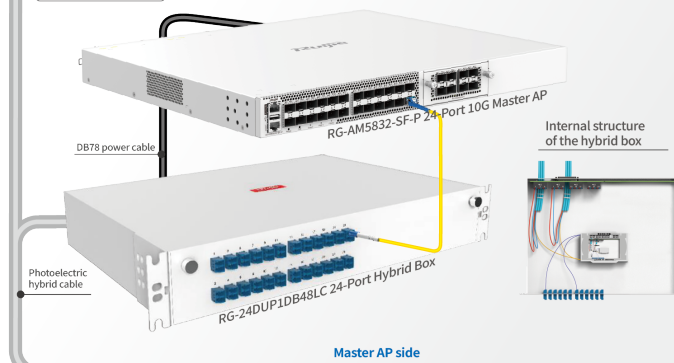
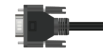


Diagram 2



1 DB78 connector



2 pRRU power connector



Wires are connected to a pRRU power connector to function as an RJ45 PoE power plug.

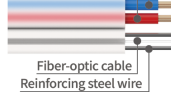
3 Terminal block



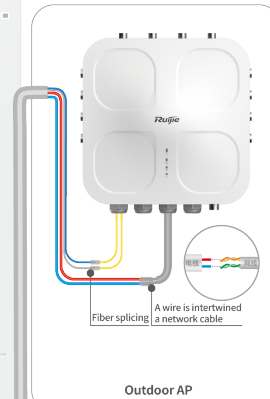
Hybrid cable

Negative pole (blue)

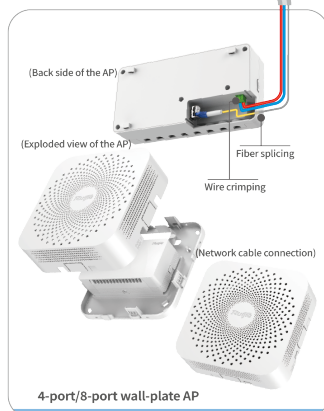
Positive pole (red)



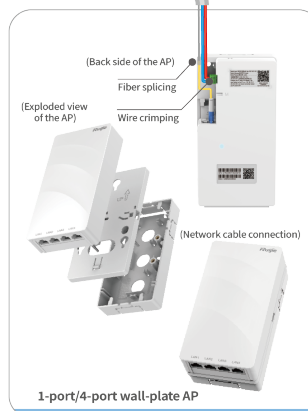
Application device side



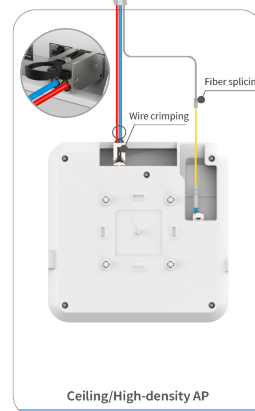
Outdoor AP



4-port/8-port wall-plate AP



1-port/4-port wall-plate AP



Ceiling/High-density AP

Features:

Ruijie Simplified Optical Ethernet Solution achieves long-distance and high-bandwidth optical communication using hybrid cables, effectively satisfying the power supply requirements of APs. With four connection methods, this solution enables full-scenario wireless coverage.

06 Ordering Guide

Take the following ordering procedure:

Order an RG-AM5832-SF-P. Select the RG-M5800-8VS or RG-M5800-2QXS subcard based on the backbone network, and order optical modules

based on uplink ports. If redundant power supply is required, you can purchase an additional power module. The RG-AM5832-SF-P supports up to two power modules.

Order an RG-24DUP1DB48LC hybrid cable termination box.

Order APs of different models based on actual scenarios.

- The RG-MAP920-SF-M offer four downlink 1GE electrical ports, which is suitable for scenarios with moderate wired information points, such as standard dormitories with 2–4 beds and small-sized offices.
- Indoor APs are suitable for high-density scenarios such as studios and conference rooms.
- Outdoor APs are applicable to outdoor scenarios that have dustproof and waterproof requirements.

Order hybrid cables based on the power supply distance and power requirements of APs.

07 Ordering Information

Model	Description
RG-AM5832-SF-P	Optical i-Share master AP for Ruijie Simplified Optical Ethernet Solution Downlink: • 24 x 10GE SFP+ ports, compatibility with 2.5GE and 1GE modules. • 24 x PoE-out ports, supporting PoE/PoE+/PoE++ Uplink: • RG-M5800-8VS subcard (optional): 8 x 25GE SFP28 ports • RG-M5800-2QXS subcard (optional): 2 x 40GE QSFP+ ports Low noise 1 x power module Each master AP occupies eight AC licenses. One uplink subcard must be ordered upon delivery.
RG-M5800-8VS	Uplink subcard of the RG-AM5832-SF-P 8 x 25GE SFP28 ports, compatibility with 10GE and 1GE modules Eight 25GE SFP28 ports need to be switched simultaneously to support 10GE SFP+ and cannot be configured separately.
RG-M5800-2QXS	Uplink subcard of the RG-AM5832-SF-P 2 x 40GE QSFP+ ports
RG-MAP920-SF-M	Wi-Fi 7 dual-radio optical micro access point for Ruijie SOE Solution Combined peak data rate of 3.570 Gbps 2.4 GHz and 5 GHz frequency bands 1 x 2.5GE SFP port 4 x 10/100/1000Base-T Ethernet ports with auto-negotiation Wall/Ceiling/Junction box-mount 1 x 2.5GE optical module for the master AP
RG-24DUP1DB48LC	24-port hybrid cable termination box 1 x DB-78 power connector 48 x LC connectors for optical fibers
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
RG-OEHC-SM-2B6A2-2x1.0-I-305	Indoor dual-core 2 x 1.0 mm ² hybrid cable, single roll, 305 m (1,000.66 ft) in length
RG-OEHC-SM-2B6A2-2x1.5-O-1000	Outdoor dual-core 2 x 1.5 mm ² hybrid cable, 1,000 m (3,280.84 ft.) in length

08 Package Contents

Item	Quantity
RG-AM5832-SF-P optical i-Share master AP	1
Rack-mount bracket	2
Rack-mount guide	2
Rubber pad	4
Quick Start Guide	1
Warranty Card and Hazardous Substance Table	1
M4 x 8 mm Phillips countersunk screw	8
Yellow-green grounding cable	1
AC/DC power module (pre-installed in the RG-AM5832-SF-P)	1
AC power cord	1

09 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-Summany/>

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

10 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.ruijie.com/>
- Online support: <https://www.ruijie.com/support>
- Hotline support: <https://www.ruijie.com/support/hotline>
- Email support: EBGITSC@ruijie.com.cn



Ruijie Networks Co., Ltd.

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