Ruijie RG-AP220-E(M)-V2

i-Share Wireless Access Point Datasheet

Product Overview

The RG-AP220-E(M)-V2 is a dual-band, dual-radio wireless Access Point (i-Share Solution AP V2) specially designed for complex application environments. The AP has a built-in intelligent power-dividing module and adopts Ruijie's patented i-Share technology to implement one-to-many deployments including 1) 4-room dual-band dual-stream coverage; 2) 8-room dual-band single-stream coverage; 3) 8-room single-band single-stream coverage. Married with Ruijie's leading Ultra Slim Antenna and Low-Loss Cables, the i-Share Solution AP V2 provides better performance, greater coverage, and nice appearance to cater for various applications.

With dual-band dual-radio design, the i-Share Solution AP V2 can work in both 802.11a/n and 802.11b/g/n with a GE copper port for uplink. The AP adopts wall-mounted design, and can be safely and easily installed on the wall or ceiling. The AP provides 8 external RP-SMA antenna connectors for feeders and antennas connection. The AP also supports local power supply and remote Power over Ethernet (PoE), delivering exceptional flexibility. The i-Share Solution AP V2 is an ideal match for dormitories, hospitals, hotels and settings alike.

Product Features

Ruijie's Patented i-Share Technology

■ Built-in Intelligent Power-Dividing Module

With a built-in intelligent power divider, the i-Share Solution AP V2 can split the transmission power of a radio among multiple ports and hence supplementary devices such as power splitters and couplers are no longer required. Each i-Share Solution AP V2 provides 8 RP-SMA connectors, which can extend the Ultra Slim Antenna to the furthest room up to 15m away using the RG-CAB-SMA Low-Loss Antenna Cables. The Ruijie i-Share Solution AP V2 delivers full coverage for 8 rooms (dual-band, single-stream) or 4 rooms (dual-band, dual-stream) and guarantees the best signal strength in every room to support heavy network traffic. The three main components of i-Share Solution V2 are shown in the below picture.

Ultra-Slim Antenna
Light and Invisible

i-Share Solution AP V2
Built-in Smart Power Dividing Unit to cover up to **8 rooms per AP**. Dual-Band, Dual-Stream design to offer up to **600Mbps** access rate

Low-Loss Antenna Cable
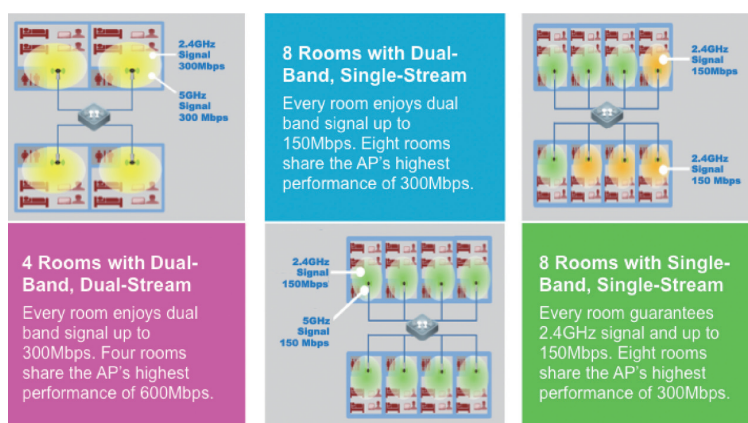As thin as network cable and nearly 180° bendable for easy deployment

■ Three Flexible Wireless Deployments

The i-Share Solution AP V2 provides three deployment modes for various application scenarios.

4-Room Dual-Band Dual-Stream Coverage Deployment provides 2x2 MIMO wireless coverage with 300Mbps throughput for 4 rooms and allows both 2.4GHz and 5GHz clients to access the network, supporting high-throughput services such as Video on Demand (VoD), online conference, and fast downloading in various wireless application scenarios.

8-Room Dual-Band Single-Stream Coverage Deployment provides 150Mbps wireless coverage for 8 rooms and allows both 2.4GHz and 5GHz clients to access the network. This mode enhances wireless user experience and minimizes deployment costs at the same time.

8-Room Single-Band Single-Stream Coverage Deployment provides 150Mbps wireless coverage for 8 rooms and satisfies the network access of 2.4GHz clients with lowered deployment costs also.

High Performance and Reliability

■ Dual-Channel Interference-Free Deployment

The i-Share Solution AP V2 adopts dual-band dual-radio hardware architecture and can work in both 802.11a/n and 802.11b/g/n. To meet the needs of both current clients and upcoming users of 802.11a/n, Ruijie has enabled both 2.4GHz and 5GHz channels for access using 802.11b/g/n. This enhances the number of access clients and device usage. The unique dual-channel deployment greatly reduces signal interference on a wireless network, offering a truly high-speed, high-performance wireless network.

■ High-Performance GE Uplink Copper Port

The i-Share Solution AP V2 provides a 10/100/1000Base-T Ethernet uplink port to support 802.11n so that the wired ports are no longer the bottleneck of wireless access rates.

■ Industry-Leading Local Forwarding Technology

Employing an industry-leading local forwarding technology, the i-Share Solution AP V2 has thoroughly broken through the traffic bottleneck of wireless Access Controllers (ACs). Clients can pre-set a forwarding mode for the i-Share Solution AP V2 by combining a Ruijie RG-WS wireless AC. The i-Share Solution AP V2 can determine whether to forward data to the AC according to a Service Set ID (SSID) or user VLAN, or directly send the data to a wired network for data exchange.

The local forwarding technology can forward large-scale, delay-sensitive, and real-time transmission data through upstream switches, which will greatly alleviate the traffic pressure on the wireless LAN controllers and fulfill the high traffic transmission requirements of 802.11n network.

■ Seamless Roaming Experience

The i-Share Solution AP V2 works perfectly with the RG-WS wireless ACs, allowing wireless users to roam seamlessly on Layer 2 and Layer 3 networks without data interruption.

■ Abundant QoS Policies

The i-Share Solution AP V2 supports abundant QoS polices. For example, it provides bandwidth restriction in WLAN/AP/STA modes, offering bandwidth guarantee for mission-critical applications.

The i-Share Solution AP V2 supports the multicast-to-unicast conversion technology, which thoroughly resolves video interruption due to packet loss or long delay in wireless VoD and optimizes user experience with multicast video over wireless networks.

■ Wireless IPv6 Access

The i-Share Solution AP V2 supports all the IPv6 features and implements IPv6 forwarding on a wireless network. Both IPv4 and IPv6 users can connect to the ACs over tunnels, enabling IPv6 applications to be borne on the wireless network.

Comprehensive Security Protection

■ User Data Secured with Data Encryption

The i-Share Solution AP V2 supports a complete data security mechanism. Its comprehensive support for WEP, TKIP, and AES encryption technologies thoroughly ensures that data is securely transmitted on wireless networks.

■ Virtual AP Technology

The i-Share Solution AP V2 can provide a maximum of 32 Extended Service Set IDs (ESSIDs) and support 16 802.1q VLANs based on the virtual AP technology. Network administrators can separately encrypt and isolate subnets or VLANs that have the same SSID. They can also configure a separate authentication mode and encryption mechanism for each SSID.

■ CAPWAP Encryption Tunnel for Secure Transmission

The Control and Provisioning of Wireless Access Points (CAPWAP) protocol is deployed for encrypted tunnel communications between the i-Share Solution AP V2 and RG-WS wireless ACs to ensure secure data transmission.

■ RF Security

Pairing with Ruijie's integrated network management system RG-SNC and the RG-WS wireless ACs, the i-Share Solution AP V2 enables an RF-probe-based scanning mechanism to detect unauthorized APs or RF interference sources in real time and send corresponding alarms to the network management system. Network administrators can thereby monitor potential threats in various wireless environments and check resource usage at any time.
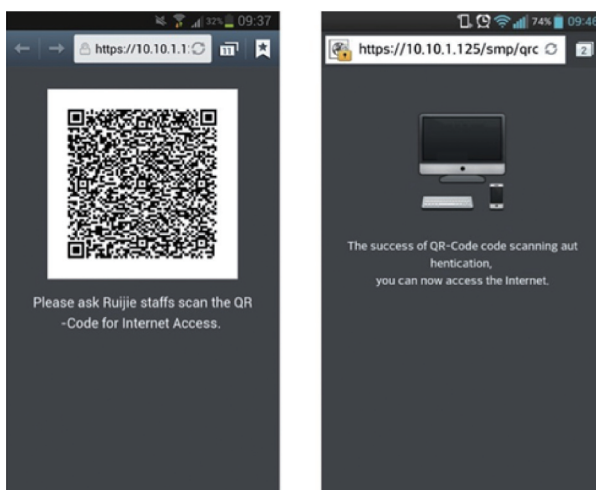
■ Multiple Easy-to-Use Authentication Modes

Together with Ruijie Security Management Platform (RG-SMP), the i-Share Solution AP V2 supports Web Portal Authentication, 802.1X Smart Device Authentication, SMS Authentication, and QR Code Authentication.

If users are authenticated via Ruijie 802.1X Seamless Authentication, they just need to perform password authentication for once. That means they are only required to enter user credentials during their first network visit.

If users are authenticated via SMS, they need to sign in first with their mobile phone numbers and then obtain usernames and passwords from the SMS sent to their mobile phones.

QR code authentication is another wireless security highlight. After accessing a wireless network, users will obtain a QR code and need to get it scanned by any authorized staff's mobile phones to gain network access.

QR Code Authentication Interface

■ Protection Against ARP Spoofing

Address Resolution Protocol (ARP) detection effectively protects network users from ARP gateway spoofing and host spoofing for secure wireless access. Automatic binding can be enabled in both dynamic and static IP address allocation environments to greatly save manpower resources and management costs. The i-Share Solution AP V2 can monitor and control the transmission rate of ARP packets to prevent malicious use of scanning tools, which triggers ARP flooding and causes network congestion.

■ DHCP Snooping

With Dynamic Host Configuration Protocol (DHCP) snooping, the i-Share Solution AP V2 permits DHCP response messages from the trusted ports only. The i-Share Solution AP V2 can thus prevent unauthorized deployment of any DHCP server to disturb the allocation and management of IP addresses and affect normal operation of the network. The i-Share Solution AP V2 can effectively prevent ARP host spoofing and source IP address spoofing in the dynamic IP allocation environment by dynamically monitoring ARP and checking source IP address.

■ Management Information Security

To ensure the security of devices and offer protection against attacks, the i-Share Solution AP V2 encrypts management information by Secure Shell (SSH) and SNMPv3 technologies via Telnet and Simple Network Management Protocol (SNMP). The i-Share Solution AP V2 offers Telnet access control on the basis of source IP address, offering a high level of granularity on device management. The Wireless Controller also guarantees that only the IP addresses authorized by the network administrator can log into the switch, which further enhances the security of device network management.

Abundant and Comprehensive Management Policies

■ Simple Configuration-Free Installation

The i-Share Solution AP V2 working in fit mode requires no pre-settings before installation. During onsite installation, implementation or maintenance, no reconfiguration is required as well. The i-Share Solution AP V2 can automatically obtain configuration information from a wireless AC to complete the configuration at any time. This greatly reduces the workload and costs of implementation and maintenance.

■ Comprehensive Remote Management

Regardless of the network location of the i-Share Solution AP V2, all of its operating

parameters such as the channel number, power level, SSID settings, security settings, and VLAN settings can be centrally processed by a remote Ruijie RG-WS wireless AC. This saves local management resources, centralizes management, and improves wireless network security and management efficiency.

■ PoE Port for Easy Deployment and Maintenance

On top of local power option, the i-Share Solution AP V2 supports the PoE with the 802.3af standard. By the End-span PSE (PoE power supply switch) or Mid-span PSE (PoE power supply adaptor) device, it can provide data transmission and power supply services through Ethernet. IT administrator hence can perform remote management and the deployment greatly lowers deployment difficulty and installation costs.

■ Web Interface Management

The i-Share Solution AP V2 provides AC and AP Web management interfaces. The interfaces provide easy wireless deployment and high transparency for network management. The AC web interface can manage both AP as well as the AP associating users, restrict user access, and control access bandwidths, thereby facilitating O&M personnel's wireless network planning, operation, and maintenance.

■ Association with Network Management Software

The i-Share Solution AP V2 is able to integrate with Ruijie network management software Smart Network Commander (SNC) to manage all wireless ACs and APs on a network. The management function includes:

● Configuration backup

● Device status inspection

● Wireless signal "heat map" diagram to display wireless signal distribution of APs in the actual operating environment

Technical Parameters

Model	RG-AP220-E(M)-V2
Hardware Specifications	
Radio	Dual
Protocol	Concurrent 802.11b/g/n and 802.11a/n
Operating Bands	2.4GHz and 5GHz
i-Share	Built-in power divider
Spatial Streams	1 for 8-room access 2 for 4-room access
Max Throughput	300Mbps per radio and 600Mbps per AP
Modulation	OFDM: BPSK@6/9Mbps, QPSK@12/18Mbps, 16-QAM@24Mbps, 64-QAM@48/54Mbps DSSS: DBPSK@1Mbps, DQPSK@2Mbps, CCK@5.5/11Mbps MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM
Receiver Sensitivity	11b: -79dBm (1Mbps), -76dBm (5Mbps), -73dBm (11Mbps) 11g: -77dBm (6Mbps), -68dBm (24Mbps), -64dBm (36Mbps), -58dBm (54Mbps) 11a: -74dBm (6Mbps), -65dBm (24Mbps), -61dBm (36Mbps), -55dBm (54Mbps) 11na: -68dBm@MCS0, -50dBm@MCS7, -68dBm@MCS8, -50dBm@MCS15 11ng: -71dBm@MCS0, -53dBm@MCS7, -71dBm@MCS8, -53dBm@MCS15

Max Transmit Power	≤100mw (20dBm, transmit power of the RF card only)
Adjustable Power	1dBm
Dimensions (W x D x H) (mm)	200 x 190 x 36 (The height does not include the height of the antenna connectors or brackets)
Weight	1.5kg
Service Port	1 10/100/1000Base-T Ethernet uplink port (supporting PoE)
Management Port	1 console port
Lock	Yes
LED Indicators	3 LED indicators: 2 RF indicators and 1 status indicator
Power Supply	DC power adapter (supporting 48V DC local power supplies)
	802.3af PoE
Max Total Power	13W
Environmental	Operating temperature: –10°C to 50°C
	Storage temperature: –40°C to 70°C
	Operating humidity: 5% to 95% (non-condensing)
	Storage humidity: 5% to 95% (non-condensing)
Installation Mode	Ceiling or wall-mountable
IP Rating	IP41
Safety Standards	GB4943-2001
EMC Standards	GB9254-2008 and GB17625.1-2003
Radio Standards	Model of approved wireless radiation devices
Wi-Fi Alliance Certification	Yes

Software Functions		
WLAN	Maximum number of stations per AP	256
	Virtual AP	A maximum of 32 SSIDs
	SSID hiding	Yes
	Configuring the authentication mode, encryption mechanism, and VLAN attributes for each SSID	Yes
	WDS (bridge mode)	Yes
	RIPT	Yes
	Intelligent load balancing based on the number of clients or traffic	Yes
	STA limit	SSID-based, Radio-based
	Bandwidth limit	STA/SSID/AP-based rate limit

Model		RG-AP220-E(M)-V2
WLAN	Preference for 5GHz (band select)	Yes
	Spectrum analysis	Yes
	Wireless location	Yes
	Heat map diagram	Yes
Security	PSK, Web, and 802.1x authentication	Yes
	Data encryption	WPA (TKIP), WPA2 (AES), WPA-PSK, and WEP (64 or 128 bits)
	QR code authentication	Yes
	SMS authentication	Yes
	PEAP authentication	Yes
	Data frame filtering	Whitelist, static blacklist, and dynamic blacklist
	User isolation	Yes
	Rougue AP detection and countermeasure	Yes
	Dynamic ACL assignment	Yes
	WAPI	Yes
	RADIUS	Yes
	CPU Protection Policy (CPP)	Yes
	Network Foundation Protection Policy (NFPP)	Yes
Routing	IPv4 address	Static IP address or DHCP
	IPv6 CAPWAP tunnel	Yes
	ICMPv6	Yes
	IPv6 address	Manual or automatic
	IPv6 tunnel	Manual or automatic
	ISATAP	Yes
	Multicast	Multicast to unicast conversion
Management and Maintenance	Network management	SNMP v1/v2C/v3; Telnet, SSH, TFTP, FTP and Web management
	Fault detection and alarm	Yes
	Statistics and logs	Yes
	Switching between the FAT and FIT modes	The AP working in FIT mode can switch to the FAT mode through the RG-WS wireless AC; The AP working in FAT mode can switch to the FIT mode through a local console port or Telnet.

Ordering Information

Model	Description	Remarks
RG-AP220-E(M)-V2	2nd-Gen i-Share Solution Access Point, built-in power & signal splitter divider, support up to 8 i-Share Antenna connection, Dual-channel Dual-band, 802.11a/n and 802.11b/g/n, FAT/FIT Mode (Antenna, Antenna Extension Cable and AC adaptor sold separately)	Mandatory
RG-CAB-SMA-5m	i-Share RP-SMA Extension Cable (male-to-female), 0.38dBi Loss per Meter, 5m	Optional
RG-CAB-SMA-10m	i-Share RP-SMA Extension Cable (male-to-female), 0.38dBi Loss per Meter, 10m	Optional
RG-CAB-SMA-15m	i-Share RP-SMA Extension Cable (male-to-female), 0.38dBi Loss per Meter, 15m	Optional
RG-IOA-2505-S1	2nd-Gen i-Share Solution Omnidirectional Antenna, panel-shaped, 2.4GHz and 5GHz, 5dBi, SMA interface (female)	Optional
RG-DCAB-SMA-5m	i-Share Solution Antenna Extension Cable, for Dual-channel deployment, 2 SMA interfaces (male-to-female), 0.38dBi Loss per Meter, 5m (For 1:4 dual-band dual-channel deployment)	Optional
RG-DCAB-SMA-10m	i-Share Solution Antenna Extension Cable, for Dual-channel deployment, 2 SMA interfaces (male-to-female), 0.38dBi Loss per Meter, 10m (For 1:4 dual-band dual-channel deployment)	Optional
RG-DCAB-SMA-15m	i-Share Solution Antenna Extension Cable, for Dual-channel deployment, 2 SMA interfaces (male-to-female), 0.38dBi Loss per Meter, 15m (For 1:4 dual-band dual-channel deployment)	Optional
RG-IOA-2505-M1	2nd-Gen i-Share Solution Omidirectional Antenna, panel-shaped, 2*2 MIMO, 2.4GHz and 5GHz, 5dBi, 2 SMA interfaces (female) (For 1:4 dual-band dual-channel deployment)	Optional

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