Indoor Access Point Datasheet
AP740-I/ AP740-I(C)/ AP720-I

Today, in a fast-pace and highly mobile digital workspace, WiFi has successfully replaced traditional wired network as a primary connectivity option to carry out business activity in more efficient and effective manner.

With the explosion in mobile devices over past few years, it is vital to grant access to employee access to the cooperate network with the right infrastructure and BYOD policy. A high performance & reliable WiFi network is crucial in-order to guarantee uninterrupted business operation.

It is not uncommon that many challenges faced by enterprises in deploying WiFi networks. Here are some of the typical issue/challenges:

- Poor WiFi Quality
- Complex WiFi Design & Build
- Costly Infrastructure
- Complicated Operation

Thanks to Ruijie patented X-sense™ smart antenna technology, AP700 series greatly improves the AP coverage performance and ensures an optimal access experience for various kind of smart mobile devices. Supplement by innovative Pre-AX, CorrectLink & AirReorder feature, deploying high density WiFi is no longer a challenge.

The AP700 series is also equipped with richness feature and simplicity management that have made Ruijie Networks the industry leader in China WiFi market at cost effective approach.

Highlights

- **X-sense™, market leading patented smart antenna technology**
- **World's thinnest 11ac Wave 2 AP**
- **Unmatched blazing fast & reliable performance by tri-radio design**
- **Secured & cost-effective Virtual AP technology for Guest WiFi**
- **Pre-AX, CorrectLink & AirReorder feature for high density WiFi optimization**
- **Integrated BLE Bluetooth iBeacon design**

Overview

Ruijie AP700 series provides the fastest 802.11ac gigabit wireless performance and unbeatable user experience for any organization.

With maximum wireless performance of 2.966Gbps, Ruijie AP700 series is the perfect solution in any WiFi deployment of diverse client with diverse needs.

Innovative market leading feature, Pre-AX, CorrectLink & AirReorder drastically improve RF efficiency in high density WiFi deployment.

RG-AP740-I
Wireless AP

RG-AP740-I(C)
Wireless AP

RG-AP720-I
Wireless AP

Figure 1: RG-AP700 Series Product Family

Product Features

Patented X-sense™ Smart Antenna

• Automated Selection of Optimum Signal Paths

Gearing up with the patented Smart Antenna matrix architecture, the AP740-I supports multiple antenna combinations and effectively solves the weakness of coverage dead zones of traditional antennas.

• Enhanced Signal Strength with the Same Power

The AP740-I Series accurately calculates the location of smart devices and improves the signal strength accordingly with dynamic combinations of antennas, ensuring the best signal coverage.

• Reduced Interference & Simplified Deployment

The RG-AP700 Series automatically adjust the wireless signal output direction according to the user location. When subject to interference, the Smart Antenna and X-Sense™ Smart Antenna technology can effectively reduce interference by more than 30%.
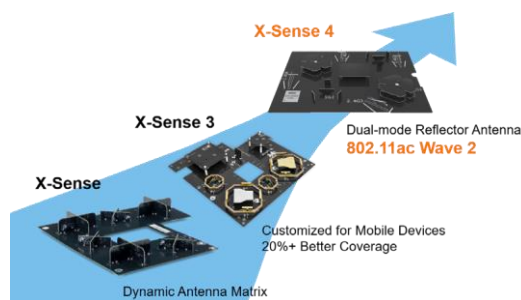

Figure 2: X-Sense 4 Smart Antenna

Performance Proven by 3rd Party Independent Validation, Tolly Certified

Tolly Group is one of the reputable 3rd party independent performance testing organization. Over 65% of Fortune 100 Companies turn to Tolly Reports to assist in strategic technology decisions.

The Ruijie AP740-I performance is further validated in Tolly certified report. We have outperformed other major vendor flagship wireless access point in the real-world performance rating.
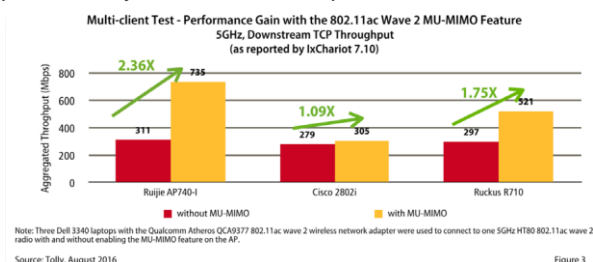
http://www.tolly.com/DocDetail.aspx?DocNumber=216147

Figure 3: Tolly Certification Report

High Density WiFi Experience

• Pre-AX, Minimizes Co-channel & Other Interferences

DCCA/DTPC is adopted from 802.11ax technology to dynamically fine tune RSSI threshold to maximize the utilizable spectrum and allow more data to be transmitted. Each AP optimize the RF channel and power according to each client.
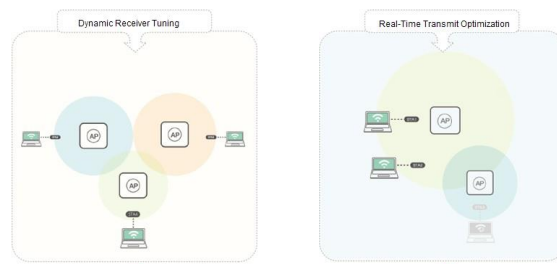

Figure 4: Pre-AX Technology Optimizing WiFi Experience

• CorrectLink, Improves Traffic Load Balancing & Client Roaming

CorrectLink technology is designed to analyses the latency, jitter and the signal strength of each client. It also correlates with additional information like wireless channel utilization and throughput to optimize the best user experience for wireless client.

Figure 5: CorrectLink Technology Optimizing WiFi Experience

• AirReorder, Smart Airtime Scheduling Technology

The fundamental of AirReorder is to allocate the equal the time slot to ensure that each terminal can get the fairness of RF resources as possible. This can prevent lower data rate client to degrade entire network performance by occupying the limited shared medium.

Figure 6: AirReorder Allocating Time Slots to Terminals
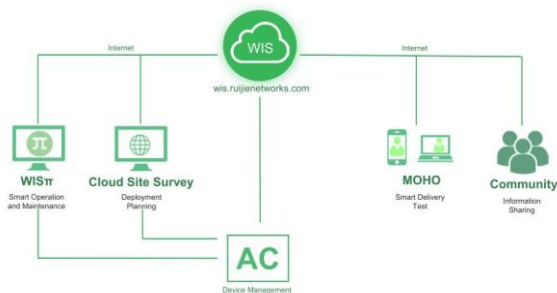
Seamless Integration with WIS Cloud

Figure 7: WIS Cloud Smart Services Platform

Ruijie WIS is an AI-based intelligent services designed for WiFi optimization on the cloud. Seamlessly integrated with Ruijie hardware AC on premise helps to streamline WiFi deployment planning, delivery testing as well as operation diagnosis. With WIS you can:

• Cloud site survey for deployment planning
• Smart mobile APPS for provisioning
• Visualize the user experience
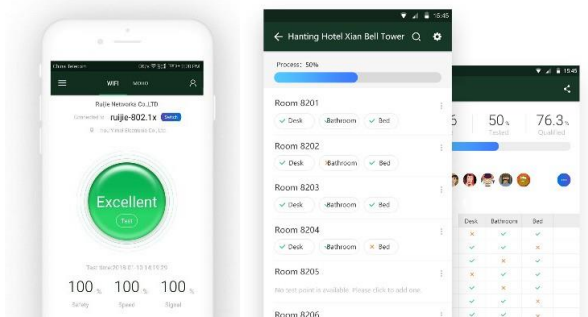• One-click WiFi optimization
• and it is FREE!

Figure 8: Ruijie MOHO APP for WiFi Testing

As part of the Ruijie WIS solution, Ruijie MOHO is a mobile app designed to carry out WiFi testing from your fingertips. Comprehensive testing tools like collaborative test, speed test, multi-point test and etc. are available for in Ruijie MOHO app that freely download from IOS APP Store & Google Play.
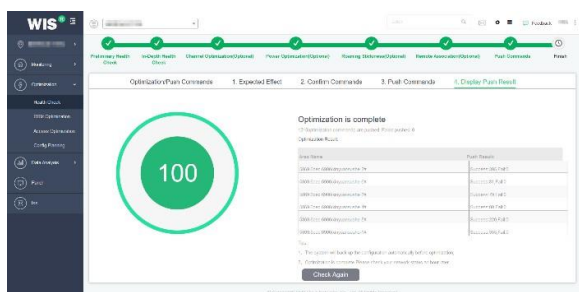

Figure 9: WISπ One-click Optimization

Another key feature from Ruijie WIS, WISπ provides one-click optimization by using the AI based machine learning automated correlation based on the real-time information gather from your WiFi network. It truly optimizes the entire WiFi network performance by providing the best suitable configuration fine-tuning by just a click.

Virtual AP Technology

In most of the enterprise today, providing a Guest WiFi to visitor is an essential. However, Guest WiFi might become another entry point for network intrusion either it is intended or not.

Ruijie AP Virtualization technology allows to virtualize a physical AP into multiple virtual AP to handle different services. Different VAP can connect to different AC to ensure the only authorized user access to right resource.

With VAP, you can now enjoy from its benefit of:

• Resource isolation
• Flexible authentication
• Minimize RF interference
• Cost effective & secured

Benefit from the dual GE uplink design of AP740, two different CAPWAP tunnel separating employee WiFi and guest WiFi traffic into two different physical uplinks further enhanced the security.
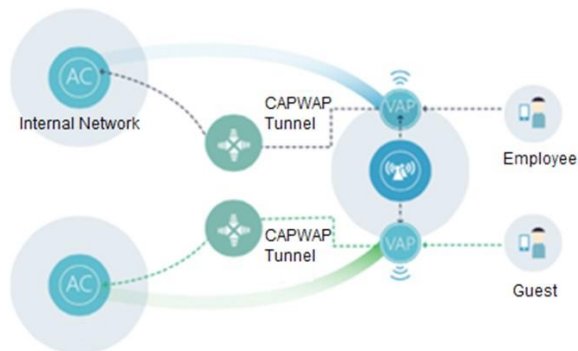

Figure 10: Virtual AP Enhancing Network Security

Virtual AC Technology

Ruijie Network AC Virtualization technology help to virtualize multiple AC into single logical AC regardless of module or appliance-based AC. It supports up to 8 members of hardware AC in single high availability cluster. AP license is shared from the license pool regardless of the number of AC in the cluster.

With the centralized management and distributed processing capability, it increases the scalability and resilience of entire Wireless Network. Simplified management streamline the IT operation as well.
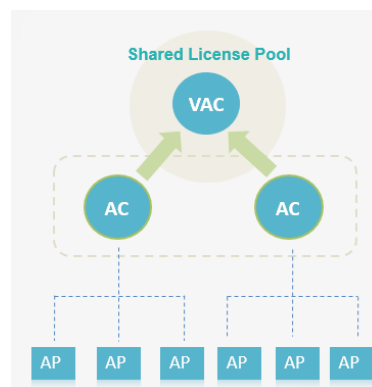

Figure 11: Virtual AC Enabling Centralized Management

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PPSK Authentication

Traditional Pre-shared keys (PSK) are shared by all users on a WLAN, giving it potential risk of PSK leak-out.

Ruijie Per-user PSK (PPSK) is an easy setup wireless authentication method with enterprise grade security level. Credentials can be created and revoked individually. Each PPSK can also be tied to a unique user/machine.

With PPSK, you can enjoy its benefit of:

• High security by using different passwords for each user and device at individual SSID
• Simple deployment, allow for batch account creation
• Ease of use and offers the same experience as WPA/ WPA2-PSK
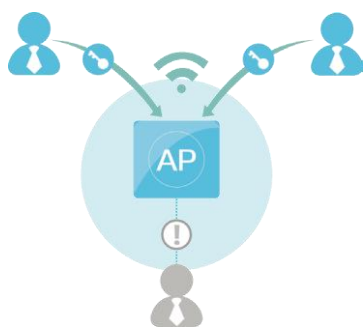• Out-of-box feature in AC controller
• No additional AAA required

Figure 12: Simple and Effective Wireless Security Practice

Bluetooth iBeacon Application

The AP700 series comes with built-in BT4.0 module, brings revolutionary changes to LBS marketing through iBeacon. iBeacon, first developed by Apple and later widely supported by other mobile devices, is a protocol leveraging Bluetooth low-energy (BLE) wireless technology to provide location-based information and services.

Gearing up with this BT 4.0 integration, the AP becomes a powerful O2O marketing tool, enabling customers to get exclusive offers from nearby shops, view details on mobile when they are close to a featured product, get alerts on what's in-store next and many more.

Figure 13: iBeacon for O2O Marketing

Techincal Specifications

Model		RG-AP740-I	RG-AP740-I(C)	RG-AP720-I
Target Deployments		For campuses, offices, hospitals, and hotspots of service providers		
Basic Specifications	Radio	Concurrent tri-radio dual-band	Concurrent dual-radio dual-band	Concurrent dual-radio dual-band
	Protocol	802.11a/b/g/n/ac Wave 2		
	Operating Bands	802.11b/g/n: 2.4GHz to 2.483GHz 802.11a/n/ac: 5.150GHz to 5.350GHz, 5.47GHz to 5.725GHz, 5.725GHz to 5.850GHz (vary depending on countries)		
	Antenna	Built-in "X-Sense 4" Smart Antenna, 4×4 MU-MIMO	Built-in Smart Antenna, 4×4 MU-MIMO	Built-in Smart Antenna, 2×2 MU-MIMO
	Max Throughput	1733Mbps/800Mbps/433Mbps per radio 2966Mbps per AP	1733Mbps/800Mbps per radio 2533Mbps per AP	400Mbps@2.4GHz 867Mbps@5GHz 1267Mbps per AP
	Spatial Streams	4	4	2

Model		RG-AP740-I	RG-AP740-I(C)	RG-AP720-I
Basic Specifications	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: PSK, QPSK, 16QAM, 64QAM and 256QAM	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 and 256QAM	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 and 256QAM
	Receiver Sensitivity	11b: -91dBm(1Mbps), -88dBm(5Mbps), -85dBm(11Mbps) 11a/g: -89dBm(6Mbps), -80dBm(24Mbps), -76dBm(36Mbps), -71dBm(54Mbps) 11n: -83dBm@MCS0, -65dBm@MCS7, -83dBm@MCS8, -65dBm@MCS15 11ac HT20: -83dBm(MCS0), -57dBm(MCS9) 11ac HT40: -79dBm(MCS0), -57dBm(MCS9) 11ac HT80: -76dBm(MCS0), -51dBm(MCS9)		
	Maximum Transmit Power	100mw		
	Adjustable Power	1dBm		
	IP Rating	IP41		
Ports	Service Port	2 10/100/1000BASE-T Ethernet uplink ports (Both ports support PoE) 1 USB port	2 10/100/1000BASE-T Ethernet uplink ports (Both ports support PoE) 1 USB port	2 10/100/1000BASE-T Ethernet ports (LAN1 port supports PoE & Uplink) 1 USB port
	Management Port	1 console port		
Power (DC Power adapters should be purchased from third-party vendors separately if needed.)	Power Supply	Local power supply (DC 48V) and PoE+ (802.3af/802.3at) Support dual PoE for power backup (Power adapters sold separately)	Local power supply (DC 48V) and PoE+ (802.3af/802.3at) Support dual 802.3at power supply, or dual 802.3af power supply	Local power supply (DC 48V) and PoE+ (802.3af/at) (Power adapters sold separately)
	Power Consumption	<25.4W	<25.4W	<12.95W
WLAN	Maximum clients per AP	Up to 612	Up to 512	Up to 256
	BSSID capacity	Up to 16 per radio Up to 48 per AP	Up to 16 per radio Up to 32 per AP	Up to 16 per radio Up to 32 per AP
	SSID hiding	Support		
	Configuring the authentication mode, encryption mechanism and VLAN attributes for each SSID	Support		
	Remote Intelligent Perception Technology (RIPT)	Support		
	X-speed	Support		
	Intelligent load balancing based on the number of users or traffic	Support		
	STA control	SSID/radio-based		
	Bandwidth control	STA/SSID/AP-based speed control		
	Preference for 5GHz (band select)	Support		

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Model		RG-AP740-I	RG-AP740-I(C)	RG-AP720-I
WLAN	Wireless position tracking	Support		
	Dynamic Frequency Selection(DFS)	Future Release Support		
Security	PSK, Web, and 802.1x authentication	Support		
	Data encryption	WPA (TKIP), WPA2 (AES), WPA-PSK, and WEP (64 or 128 bits)		
	SMS authentication	Support		
	PEAP authentication	Support		
	Data frame filtering	Whitelist, static/dynamic blacklist		
	User isolation	Support		
	Rogue AP detection and countermeasure	Support		
	Dynamic ACL assignment	Support		
	RADIUS	Support		
	Wireless Intrusion Detection System(WIDS)	Support		
	Wireless Intrusion Prevention System (WIPS)	Support		
Bluetooth	iBeacon	Support		
Routing	IPv4 address	Static IP address or DHCP reservation		
	IPv6 CAPWAP tunnel	Support		
	ICMPv6	Support		
	IPv6 address	Manual or automatic configuration		
	Multicast	Multicast to unicast conversion		
Management and Maintenance	Network management	SNMP v1/v2C/v3, Telnet, TFTP, Web management		
	One-click optimization	Support (need to integrate with SNC)		
	Fault detection and alarm	Support		
	Cloud AC management	Support		
	Statistics and logs	Support		
	FAT/FIT switching	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.		
External Characteristics	Lock	Support		
	LED Indicators	1 LED (red, green, blue, orange, and flashing modes, breathing flashing mode for smart device access, and the indicator can be switched off to silent mode)		
Relevant Standard	Wi-Fi Alliance Certification	Support		
	Safety Standard	GB4943, EN/IEC 60950-1		

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Model		RG-AP740-I	RG-AP740-I(C)	RG-AP720-I
Relevant Standard	EMC Standard	GB9254, EN301 489, EN 55032 , EN 61000, EN 55035		
	Health Standard	EN 62311		
	Radio Standard	EN300 328, EN301 893		
	Vibration Standard	IEC60068 2-31, ETSI EN300 019, NEBS GR-63-CORE		
Specifications	Dimensions (W x D x H) (mm)	230 x 230 x 42 (Height of AP only, excluding case and mount kit)	230 x 230 x 42 (Height of AP only, excluding case and mount kit)	180 x 180 x 20 (Height of AP only, excluding case and mount kit)
	Weight	1.3kg	1.0kg	0.37kg
Work Enviroment	Temperature	Operating Temperature: -10°C to 50°C		
		Storage Temperature: -40°C to 70°C		
	Humidity	Operating Humidity: 5% to 95% (non-condensing)		
		Storage Humidity: 5% to 95% (non-condensing)		
Installation Mode		Ceiling/wall-mountable		

Application Scenario

As a key component of the end-to end enterprise networking solution, the high-performance RG-AP700 Series is targeted at high-capacity scenario, such as reception area, function hall, theater and corridor. On premise hardware AC provides the unified management platform to manage wireless AP in the campus network, it also integrated with the Ruijie WIS platform on the cloud to further enhance on WiFi optimization services the RG-AP700 Series is able to scale its deployment according to the evolving requirements of enterprise-grade networks as shown in the following solution diagram.
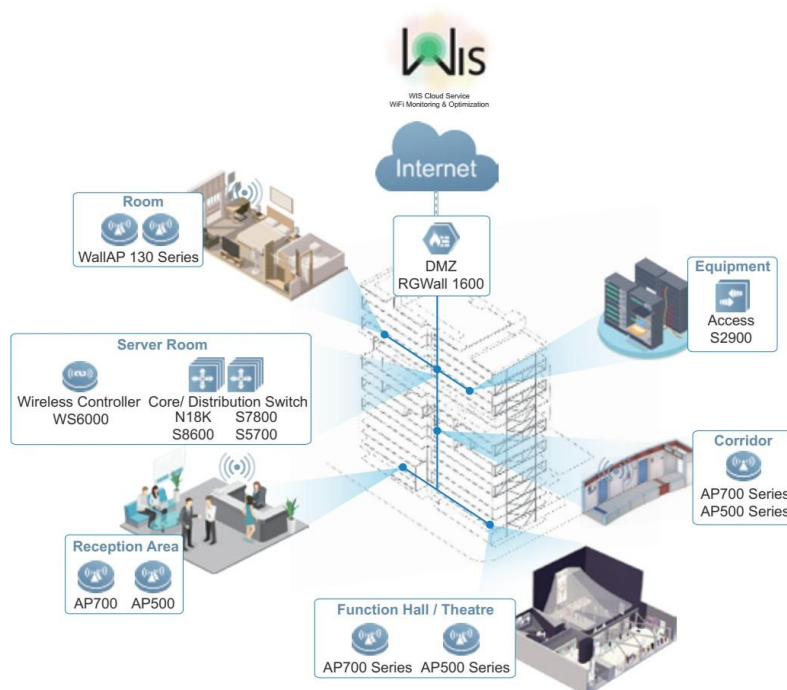

Figure 14: Typical Scenarios optimized with WIS Optimization Service

Ordering Information

Model	Description
RG-AP740-I	Indoor Wireless Access Point, built-in "X-Sense 4" Smart Antenna, tri-radio dual-band, 4 spatial streams, access rate up to 2.966Gbps per AP Support concurrent 802.11ac Wave 2 and 802.11a/b/g/n, FAT/FIT modes, 2 10/100/1000BASE-T uplink ports, support PoE+ and local power supply , integrated with BLE/Bluetooth iBeacon (PoE+ adapters are sold separately, which could be purchased from Ruijie while DC Power adapters should be purchased from third-party vendors separately if needed)
RG-AP740-I(C)	Indoor Wireless Access Point, built-in Smart Antenna, dual-radio dual-band, 4 spatial streams, access rate up to 2.533Gbps per AP Support concurrent 802.11ac Wave 2 and 802.11a/b/g/n, FAT/FIT modes, 2 10/100/1000BASE-T uplink ports, support PoE+ and local power supply, integrated with BLE/Bluetooth iBeacon (PoE+ adapters are sold separately, which could be purchased from Ruijie while DC Power adapters should be purchased from third-party vendors separately if needed)
RG-AP720-I	Indoor Wireless Access Point, built-in Smart Antenna, dual-radio dual-band, 2 spatial streams, access rate up to 1.267Gbps per AP Support concurrent 802.11ac Wave 2 and 802.11a/b/g/n, FAT/FIT modes, 2 10/100/1000BASE-T ports, support PoE+ and local power supply, integrated with BLE/Bluetooth iBeacon (Only LAN1 port supports PoE & Uplink) (PoE+ adapters are sold separately, which could be purchased from Ruijie while DC Power adapters should be purchased from third-party vendors separately if needed)