PUNTO DE ACCESO EXTERIOR

Wireless Access Point Datasheet

Ruijie RG-AP680(CD) is a high-performance Wi-Fi 6 (802.11ax) enterprise outdoor AP with IP68 rating designed for extreme outdoor conditions.

The RG-AP680(CD) provide concurrent dual-band with up to 2.4Gbps access rate, offers 4 spatial streams and built-in directional antenna. RG-AP680(CD) supports switching between FAT/FIT mode, offers 1 SFP port and 1 10/100/1000M port with PoE/ local power supply. Taking wireless network security, RF control, mobile access, QoS, seamless roaming and other important factors into account. Teaming up with Ruijie RG-WS Wireless Controller Series/Cloud AC, the APs offer Wi-Fi user data forwarding, advanced security and access control with ease.

RG-AP680(CD) adopts the IP68 protection design for the enclosure, which is suitable for application in extreme indoor and outdoor environments. It can withstand extreme weather and other environmental conditions, thereby greatly reducing the difficulty of installation and maintenance. Equipped with a built-in directional antenna, RG-AP680(CD) can achieve Wi-Fi coverage in the vast majority of the scenarios. Multi-hop and point-to-multipoint bridge features are also supported to further enhance the deployment flexibility.

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

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

- **Hybrid Cloud**: **RG-WS6000 Series Wireless Controller (on-premises) Plus Cloud Management (Optional) –** targeted for enterprise office and campus with single or multiple sites and high-density AP deployment. The controller appliances are installed at the customer's site with fully integrated wireless management and authentication feature, supporting up to 5000 APs per cluster. Optionally, the cloud management platform allows for value-added features like centralized device configuration and monitoring, AI radio (RF) optimization, reporting, etc.

- **Private Cloud: RG-MACC Software Controller** – targeted for ISP/MSP, government, or multi-national corporation (MNC) with diverse customer sites and demand on integration of their billing, portal and security systems. The RG-MACC supports unified device management, not only for wireless access points, but also switches and gateway devices.

1. **Features**

1024-QAM High-speed Access Rate

RG-AP680(CD) adopts the dual-band dual-radio 802.11ax design with up to 4 spatial streams and built-in directional antenna. The first radio offers up to 0.575Gbps access rate at 2.4G and supports switching to 5G with up to 1.2Gbps access rate, while the second radio offers up to 1.2Gbps access rate at 5G. The AP offers a maximum wireless access rate of 2.4Gbps. 2.4G + 5G is recommended, which offers access rate of 1.775Gbps.

OFDMA High-density User Access

RG-AP680(CD) supports OFDMA of 802.11ax, which divides the WLAN channel into multiple narrower subchannels, with each user occupying one or more subchannels. By scheduling multiple users to receive and send packets concurrently via the AP, user competition and back-off can be reduced, thereby reducing network latency and improving network efficiency.

Spatial Reuse with BSS Color

RG-AP680(CD) supports spatial reuse with basic service set (BSS) color of 802.11ax to identify the BSSs of different WLANs in the network by different coloring (BSS color), and further divide them into internal (BSS which belongs to the device) and external BSS. Different packet receiving and sending thresholds can be maintained. When receiving packets, BSS coloring is used to quickly identify the packet of external BSS. If the signal

strength is lower than the receiving threshold of external BSS, the packet will be ignored. The transmission of the internal BSS packets will be not affected.

This technology can implement channel reuse in a high density scenario, greatly reducing the impact of co-channel interference for the actual network deployment.

Industry-leading Local Forwarding Technology

Employing Ruijie's intelligent local forwarding technology, RG-AP680(CD) eliminates the traffic bottleneck of wireless access controllers. Deploying with the Ruijie RG-WS Wireless Controller Series, users can flexibly configure the data forwarding mode for RG-AP680(CD). The AP also controls whether the data will be forwarded via the wireless controller according to the SSID or user VLAN, or directly sent to the wired network for data exchange.

The local forwarding technology can classify and forward

delay-sensitive data which requires real-time transmission through the wired network to greatly alleviate the traffic pressure on the wireless controllers and better meet the high traffic transmission requirements of the 802.11n and 802.11ac network.

Abundant QoS Policies

RG-AP680(CD) supports a wide variety of QoS policies. For example, it provides WLAN/AP/STA-based bandwidth limitations which prioritize important and critical data transmission over others for bandwidth guarantee.

With the multicast-to-unicast technology, RG-AP680(CD) resolves the video lagging problem due to packet loss or

high latency in the wireless network, and highly enhances user experience of the multicast video services of wireless networks.

2. **Technical Specifications**

Hardware specifications	
Radio	Dual-radio dual-band: Radio 1: 2.4G 11ax/5G 11ax: 2×2 MIMO Radio 2: 5G 11ax: 2×2 MIMO
Protocol	Concurrent 802.11ax and 802.11a/b/g/n/ac BLE 5.0

Operating Bands	802.11b/g/n/ac/ax: 2.4G ~ 2.4835GHz 802.11a/n/ac/ax: 5G: 5.150~5.350GHz, 5.725~5.850GHz (Note: the operating bands varies according to different countries)
Antenna	Built-in directional antenna
Antenna Loba Orientation	Internal Directional: 60 degrees total
Antenna Gain	9dBi
Spatial Streams	4 spatial streams, MU-MIMO
Max. Throughput	Up to 0.575Gbps@2.4G Up to 1.2Gbps@5G Up to 2.4Gbps per AP 2.4G+5G is recommended with 1.775Gbps access rate
Modulation	OFDM: BPSK@6/9Mbps, QPSK@12/18Mbps, 16-QAM@24Mbps, 64-QAM@48/54Mbps DSSS: DBPSK@1Mbps, DQPSK@2Mbps and CCK@5.5/11Mbps MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM and 256QAM OFDM: BPSK@6/9Mbps, QPSK@12/18Mbps, 16-QAM@24Mbps, 64-QAM@48/54Mbps DSSS: DBPSK@1Mbps, DQPSK@2Mbps and CCK@5.5/11Mbps MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM, 256QAM and 1024QAM
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) 11ax HT80: -76dBm(MCS0), -49dBm(MCS11)
Maximum Transmit Power	28dBm (Note: The actual transmit power varies according to different countries and

	regions)
Adjustable Power	1dBm
Dimensions	251 mm × 168 mm × 64 mm (without mounting bracket)
Weight	<1.5kg
Service Ports	1 10/100/1000Base-T Ethernet uplink port (PoE) 1 SFP port
Management Port	1 console port
Bluetooth	Support switching between Bluetooth serial port and iBeacon
Power Supply	Support PoE (802.3af / 802.3at) Support 44 ~ 57V DC power supply
Power Consumption	<12.95W
Environment	
Operating Temperature	- 40 ~ 65°C
Storage Temperature	-40 ~ 85°C
Operating Humidity	0% to 100% (non-condensing)
Storage Humidity	0% to 100% (non-condensing)
Installation Mode	Wall/pole-mount installation
IP Rating	IP68
Surge Protection	Common mode +/-9kV
Safety Standard	GB4943, EN/IEC 60950-1
EMC Standard	GB9254, EN301 489
Radio Standard	SRRC, EN300 328, EN301 893
Wi-Fi Alliance	Wi-Fi CERTIFIEDTM a, b, g, n, ac Wi-Fi CERTIFIED 6TM WPA3TM-Enterprise, Personal Wi-Fi Enhanced OpenTM Wi-Fi Agile MultibandTM WMM®