RG-CAP72-O

Wi-Fi 7 BE3600 Outdoor Access Point

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Datasheet

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Product Overview

Introduction

The RG-CAP72-O is a dual-radio Wi-Fi 7 access point (AP) for outdoor scenarios across various sectors, such as K12, government, hotel, resort, and park scenarios. In compliance with IEEE 802.11be, IEEE 802.11ax, IEEE 802.11ac Wave 2, IEEE 802.11ac Wave 1, and IEEE 802.11n standards, the RG-CAP72-O delivers a combined peak data rate of 3.57 Gbps.

The RG-CAP72-O is designed with considerations for wireless network security, radio control, access control, QoS, and seamless roaming. The RG-CAP72-O can be used together with the network controller (RG-CNC) and Ruijie Cybrey Cloud to provide a better wireless user experience, security features, and access control.

The RG-CAP72-O adopts IP68-rated housing. It is applicable to harsh outdoor environments. In addition, it supports local power supply and Power over Ethernet (PoE), which can be flexibly selected based on the onsite environment.

Product Appearance

RG-CAP72-O

Product Highlights

High-Speed Access and Compatibility

- Dual-radio design with support for the IEEE 802.11be standard, providing 3.57 Gbps peak data rate for high-speed wireless access.
- Wi-Fi 7 technologies, providing users with high-performance wireless experience.
- Advanced 4096-QAM technology, delivering higher data rates and enhanced user experience in demanding scenarios.
- Dynamic Frequency Selection (DFS) for optimized RF spectrum usage and reduced radar interference, ensuring stable and efficient network performance.

High Security and Reliability

- Comprehensive wireless security features, including Wi-Fi Protected Access 3 (WPA3), 802.1X, and Private Pre-Shared Key (PPSK), delivering robust data protection.
- Multicast-to-unicast conversion and intelligent monitoring, enhancing the stability of multimedia services and overall network reliability.

Flexible Deployment and Power Supply

The RG-CAP72-O features two RP-SMA female connectors, which can be used to connect external antennas. Users can choose between using the built-in antenna or the external antenna on eWeb.

The RG-CAP72-O supports both local power supply (DC & 2-pin terminal) and Power over Ethernet (PoE), providing you with the flexibility to choose the power supply mode. In addition, the RG-CAP72-O can be mounted on a wall or pole, making deployment more flexible and environmental requirements less challenging.

Ease of Management

- Flexible deployment options with support for Fit and Cloud modes, offering simplified provisioning and comprehensive remote management.
- Integration with Ruijie Cybrey Cloud for centralized management, including device configuration, real-time monitoring, and one-click optimization for end-to-end network lifecycle management.

Product Features

High-Speed Access with 4096-QAM

With 4096-QAM, each modulation symbol carries 12 bits of data, a 20% increase over 1024-QAM. This enables higher-order modulation and greater data transmission density at the same spectral bandwidth, significantly increasing physical-layer throughput. 4096-QAM not only delivers an ultra-high-speed wireless experience for short-range ultra-HD video transmission, instant large-file transfers, and ultra-low-latency applications, but also improves channel utilization in high-density access scenarios, enabling enterprise networks to easily handle high-throughput services.

Orthogonal Frequency-Division Multiple Access (OFDMA) for High-Density User Access

The device supports OFDMA as defined in the IEEE 802.11be standard. OFDMA divides a wireless channel into multiple narrower subchannels, allowing each user to occupy one or more subchannels. Through AP scheduling, multiple users can transmit and receive packets simultaneously, reducing contention and backoff between users, lowering network latency, and improving network efficiency.

In high-density deployment and access scenarios, the theoretical peak data rate for a single user can reach 2.4 times that of 802.11ax.

2.5G RJ45 Port

The RJ45 port provides an uplink rate of up to 2.5 Gbps, fully unleashing the AP's multi-Gigabit wireless capabilities and preventing the wired network from becoming a bottleneck for network throughput.

2.5G SFP Port

The device provides a 2.5 Gbps optical port, overcoming the 100-meter transmission distance limitation of traditional Gigabit RJ45 ports. The optical port not only fully unleashes the AP's multi-Gigabit wireless concurrency capabilities, but also enables stable long-distance connectivity in large campuses, outdoor environments, and industrial scenarios, significantly reducing cabling costs and O&M risks in complex environments.

RP-SMA Female Connectors

The device provides multiple standard RP-SMA female connectors, allowing users to connect external antennas for greater flexibility in wireless coverage in complex areas.

Client Identification

By actively extracting and analyzing client characteristics such as MAC OUI and DHCP options, the device can accurately identify the types of clients accessing the network without requiring any agent to be installed on the clients. This overcomes the limitations of traditional networks in identifying and analyzing connected clients, helping IT teams gain a clear view of client profiles across the entire network and improving network O&M efficiency and security visibility.

Quality of Service (QoS)

The device supports comprehensive QoS features, including bandwidth limiting in WLAN, AP, and STA modes and Wi-Fi Multimedia (WMM) for defining priorities for different types of service traffic, ensuring smooth operation of critical services.

Wireless Intrusion Detection System (WIDS)

WIDS uses real-time over-the-air monitoring and multidimensional wireless packet analysis to accurately detect potential threats such as rogue APs, spoofed Deauthentication attacks, and wireless scanning. WIDS eliminates the blind spots of traditional networks that focus only on wired security while overlooking wireless air interfaces. WIDS not only provides 24/7 wireless security protection for enterprise wireless environments, but also helps IT teams locate attack sources and generate alerts within seconds, minimizing wireless intrusion risks and ensuring the security and compliance of core business data and wireless assets.

Product Features

802.1X

The device works with a RADIUS authentication server to provide dynamic key allocation and access control based on user accounts or certificates, enabling a unique key for each user and building a comprehensive zero-trust security framework for enterprises.

Pre-shared Key (PSK)

The device supports multiple PSK features, including Private Pre-Shared Key (PPSK) and Group Pre-Shared Key (GPSK), addressing the risks of traditional single-password leakage and compatibility challenges with IoT devices. This not only significantly reduces IT O&M and deployment costs, but also delivers a secure, easy-to-use wireless experience with seamless connectivity for enterprises and end users.

Point-to-Point Protocol over Ethernet (PPPoE)

The device supports PPPoE client functionality and can connect to the Internet via PPPoE, eliminating the need for an additional gateway in branch offices.

Product Specifications

Hardware Specifications

Wi-Fi Radio	RG-CAP72-O
Wi-Fi standards	IEEE 802.11be (Wi-Fi 7), compatible with IEEE 802.11a/b/g/n/ac/ax
Wi-Fi standards (2.4 GHz)	IEEE 802.11b (Wi-Fi 1) IEEE 802.11g (Wi-Fi 3) IEEE 802.11n (Wi-Fi 4) IEEE 802.11ax (Wi-Fi 6) IEEE 802.11be (Wi-Fi 7)
Wi-Fi standards (5 GHz)	IEEE 802.11a (Wi-Fi 2) IEEE 802.11n (Wi-Fi 4) IEEE 802.11ac (Wi-Fi 5) IEEE 802.11ax (Wi-Fi 6) IEEE 802.11be (Wi-Fi 7)
Radio design	Dual-radio 4 spatial streams ● Radio 1: 2.4 GHz, 2x2, MU-MIMO ● Radio 2: 5 GHz, 2x2, MU-MIMO
Data rates	Combined peak data rate: 3570 Mbps ● Radio 1: 2.4 GHz, 688 Mbps ● Radio 2: 5 GHz, 2882 Mbps
External antenna connectors	2 RP-SMA female antenna connectors ● ANT1 (2.4G&5G) and ANT2 (2.4G&5G) correspond to Radio 1 and Radio 2, respectively.
Maximum transmit power	Frequency bands and maximum Effective Isotropic Radiated Power (EIRP): Note: The transmit power is limited by local regulatory requirements. European Union & United Kingdom: 2400–2483.5 MHz, EIRP ≤ 20 dBm 5470–5725 MHz, EIRP ≤ 30 dBm Myanmar: 2400–2483.5 MHz, EIRP ≤ 23 dBm 5725–5825 MHz, EIRP ≤ 30 dBm Thailand: 2400–2483.5 MHz, EIRP ≤ 20 dBm 5470–5725 MHz, EIRP ≤ 30 dBm 5725–5825 MHz, EIRP ≤ 30 dBm Indonesia: 2400–2483.5 MHz, EIRP ≤ 36 dBm 5725–5825 MHz, EIRP ≤ 36 dBm Egypt: 2400–2483.5 MHz, EIRP ≤ 20 dBm 5150–5350 MHz, EIRP ≤ 23 dBm Vietnam: 2400–2483.5 MHz, EIRP ≤ 23 dBm 5150–5350 MHz, EIRP ≤ 23 dBm 5470–5725 MHz, EIRP ≤ 30 dBm

Wi-Fi Radio	RG-CAP72-O
	5725–5850 MHz, EIRP ≤ 30 dBm
Maximum transmit power (2.4 GHz)	Combined power: 28 dBm (single-stream power: 25 dBm) Note: The transmit power is limited by local regulatory requirements.
Maximum transmit power (5 GHz)	Combined power: 28 dBm (single-stream power: 25 dBm) Note: The transmit power is limited by local regulatory requirements.
Modulation types	802.11b: BPSK, QPSK, CCK 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM 802.11be: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM, 4096-QAM
Operating frequency bands	● Radio 1: 802.11b/g/n/ax/be, 2.400 GHz to 2.4835 GHz, EHT20/EHT40 ● Radio 2: 802.11a/n/ac/ax/be, 5.150 GHz to 5.350 GHz, 5.470 GHz to 5.725 GHz, 5.725 GHz to 5.850 GHz, EHT20/EHT40/EHT80/EHT160 Note: Country-specific restrictions apply. To use the preceding frequency bands, ensure that they are supported in your country or region.
Receive sensitivity	802.11a: –91 dBm (6 Mbps), –85 dBm (24 Mbps), –74 dBm (54 Mbps) 802.11b: –96 dBm (1 Mbps), –93 dBm (5.5 Mbps), –89 dBm (11 Mbps) 802.11g: –91 dBm (6 Mbps), –85 dBm (24 Mbps), –80 dBm (36 Mbps), –74 dBm (54 Mbps) 802.11n HT20: –88 dBm (MCS0), –70 dBm (MCS7) 802.11n HT40: –85 dBm (MCS0), –67 dBm (MCS7) 802.11ac VHT20: –88 dBm (MCS0), –65 dBm (MCS8) 802.11ac VHT40: –85 dBm (MCS0), –60 dBm (MCS9) 802.11ac VHT80: –82 dBm (MCS0), –57 dBm (MCS9) 802.11ac VHT160: –79 dBm (MCS0), –54 dBm (MCS9) 802.11ax HE20: –88 dBm (MCS0), –63 dBm (MCS9), –58 dBm (MCS11) 802.11ax HE40: –85 dBm (MCS0), –60 dBm (MCS9), –55 dBm (MCS11) 802.11ax HE80: –82 dBm (MCS0)，–57 dBm (MCS9), –52 dBm (MCS11) 802.11ax HE160: –79 dBm (MCS0), –54 dBm (MCS9), –49 dBm (MCS11) 802.11be EHT20: –88 dBm (MCS0), –63 dBm (MCS9), –58 dBm (MCS11), –52 dBm (MCS13) 802.11be EHT40: –85 dBm (MCS0), –60 dBm (MCS9), –55 dBm (MCS11), –49 dBm (MCS13) 802.11be EHT80: –82 dBm (MCS0), –57 dBm (MCS9), –52 dBm (MCS11), –46 dBm (MCS13) 802.11be EHT160: –79 dBm (MCS0), –54 dBm (MCS9), –49 dBm (MCS11), –43 dBm (MCS13)

Antenna	RG-CAP72-O
Antenna type	● 2.4 GHz: 2 x built-in omnidirectional antennas, switching between built-in and external antennas ● 5 GHz: 2 x built-in omnidirectional antennas, switching between built-in and external antennas Note: When external antennas are used, the access point uses two external RP-SMA female antenna connectors. The external antenna connectors are labeled ANT1(2.4G&5G) and ANT2(2.4G&5G). ● Bluetooth: 1 x built-in omnidirectional antenna
Antenna gain	2.4 GHz: 2.60 dBi 5 GHz: 3.10 dBi Bluetooth: 1.90 dBi

Port Specifications	RG-CAP72-O
Fixed service port	• 1 x 10/100/1000/2.5GBASE-T port, supporting IEEE 802.3af/at-compliant PoE input • 1 x 2.5GE SFP port, compatible with 1GE optical transceiver
Fixed management port	1 x RJ45 console port
LED	1 x system LED 1 x RSSI LED
Reset button	1

Bluetooth Radio	RG-CAP72-O
Bluetooth	Bluetooth 5.3 • Remote maintenance through a Bluetooth serial port
Maximum Bluetooth transmit power	10 dBm

Power Supply and Consumption	RG-CAP72-O
DC power supply	• DC power adapter: 54 V, 0.6 A • DC connector dimensions: Outer diameter: 5.5 mm (0.22 in.) Inner diameter: 2.1 mm (0.08 in.) Depth: 10 mm (0.39 in.) Note: If both DC power and PoE are available, DC power is preferred.
DC power input	Port restrictions: N/A Radio restrictions: N/A Other feature restrictions: N/A
PoE power supply	• IEEE 802.3af (PoE) • IEEE 802.3at (PoE+) Note: If both DC power and PoE are available, DC power is preferred.
PoF power supply	• IEEE 802.3af (PoE) • IEEE 802.3at (PoE+) Note: 1. If both DC power and PoE are available, DC power is preferred. 2. If PoF input is adopted, the AP must be used with a dedicated PSE.
Maximum power consumption	18 W
IEEE 802.3af power input	Port restrictions: The 2.5GE SFP port is unavailable. Radio restrictions: The transmit power of both 2.4 GHz and 5 GHz radios is limited to 60%, and their data rates are limited to 50%. Other feature restrictions: N/A
IEEE 802.3at power input	Port restrictions: N/A Radio restrictions: N/A Other feature restrictions: N/A

Environment and Reliability	RG-CAP72-O
Operating temperature	–40°C to +65°C (–40°F to +149°F) Note: At altitudes ranging from 1,800 m (5,905.51 ft.) to 5,000 m (16,404.20 ft.), the maximum temperature decreases by 1°C (1.8°F) for every 220 m (721.78 ft.) increase in elevation.
Operating humidity	0% RH to 100% RH (non-condensing)
Storage humidity	0% RH to 100% RH (non-condensing)
Storage temperature	–40°C to +85°C (–40°F to +185°F) Note: At altitudes ranging from 1,800 m (5,905.51 ft.) to 5,000 m (16,404.20 ft.), the maximum temperature decreases by 1°C (1.8°F) for every 220 m (721.78 ft.) increase in elevation.
Corrosion resistance	IEC 62368-1 IEC 60950-22
IP rating	IP68
Lock option	Kensington lock slot
MTBF	400,000 hours
Mounting options	Wall-mount and pole-mount

Dimensions and Weight	RG-CAP72-O
Unit dimensions (W x D x H)	248 mm x 78 mm x 163 mm (9.76 in. x 3.07 in. x 6.42 in., without the mounting bracket)
Packaging dimensions (W x D x H)	346 mm x 311 mm x 143 mm (13.62 in. x 12.24 in. x 5.63 in.)
Unit weight	Main unit: 1.4 kg (3.09 lbs) Mounting bracket: 1.35 kg (2.98 lbs)
Packaging weight	3.3 kg (7.28 lbs)
Color	White

System Specifications	RG-CAP72-O
Flash memory	256 MB SPI NAND Flash
RAM	1 GB DDR4

Certification and Regulatory Compliance	RG-CAP72-O
Certification	CE, CB, Wi-Fi Alliance
EMC compliance	EN 55032 EN 61000-3-3 EN IEC 61000-3-2 EN 55035 EN 301 489-1 EN 301 489-3 EN 301 489-17
Radio	EN 300 328 EN 301 893 EN 300 440
RF exposure	EN IEC 62311
Safety compliance	IEC 62368-1

Software Specifications

Bandwidth Features	RG-CAP72-O
Bandwidth control	AP-based bandwidth control Client-based bandwidth control Intelligent dynamic bandwidth control based on channel utilization Intelligent dynamic bandwidth control based on critical services SSID-based bandwidth control

Client Management	RG-CAP72-O
Client limit	Radio-based client limit SSID-based client limit
Dynamic blocklist/allowlist	Dynamic blocklist
Smart steering	AP load balancing Configuring load balancing based on client count Configuring load balancing based on client traffic
Static blocklist/allowlist	Static allowlist Static blocklist

Radio Management	RG-CAP72-O
SSID management basics	SSID hiding

Roaming Features	RG-CAP72-O
Layer 2 roaming	Layer 2 roaming
Layer 3 roaming	Layer 3 roaming

Security Features	RG-CAP72-O
Client security	Hotspot2.0 authentication WPA-802.1X authentication WPA-PSK authentication WPA-WPA2 authentication WPA2-802.1X authentication WPA2-PSK authentication WPA2-WPA3 authentication WPA3-Enterprise WPA3-Enterprise (uses Suite-B 192-bit, GCMP-256) WPA3-Enterprise with AES-CCMP-128 WPA3-OWE authentication

Security Features	RG-CAP72-O
	WPA3-Personal WEP authentication
802.1X	Dynamic ACL assignment
Client identification	AI-based identification of client types, operating systems, operating system versions, vendors, and models Client identification
CPP	CPP
MAB	MAB
NFPP	NFPP
RADIUS	RADIUS
Web authentication	Web authentication

Layer 3 Features	RG-CAP72-O
IPv6	ICMPv6 IPv6 basic features Neighbor discovery Ping over IPv6
NAT	NAT PPTP, SIP, FTP, DNS, and TFTP

Management Features	RG-CAP72-O
SNMP	SNMPv1/v2c/v3 SNMP
Alerts	Alerts
Cloud-based management	Cloud-based management
SON	SON
SSH	SSH
Syslog	Syslog
Telnet	Telnet
Web-based management	Web-based management

IP Services	RG-CAP72-O
DHCP	DHCPv4 client DHCPv6 client
NTP	NTP client NTP server

Networking Features	RG-CAP72-O
RIPT	RIPT

Routing Features	RG-CAP72-O
IPv4 routing basics	Static routing
IPv6 routing basics	Static IPv6 routing

Device Management	RG-CAP72-O
AP mode management	Mode switching
Device IP management	Obtaining an IP address through DHCP
Device IP Management	Static IPv4 address

Multicast Features	RG-CAP72-O
IGMP snooping	Multicast-to-unicast conversion

Performance Capacity

Client Management	RG-CAP72-O
Maximum number of associated clients per AP	1024 Note: The number of associated clients varies according to the environment.
Recommended number of associated clients per AP	64

Radio Management	RG-CAP72-O
Maximum number of BSSIDs per AP	32

IP Services	RG-CAP72-O
Number of DHCP address pools	2000

Package Contents

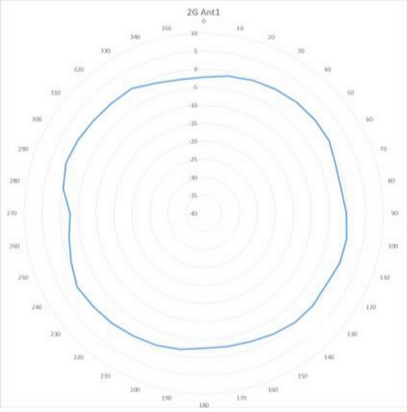
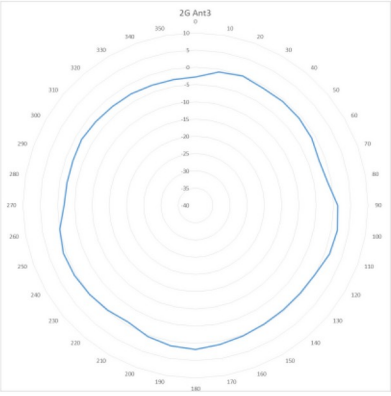
Device	RG-CAP72-O
Main unit	1

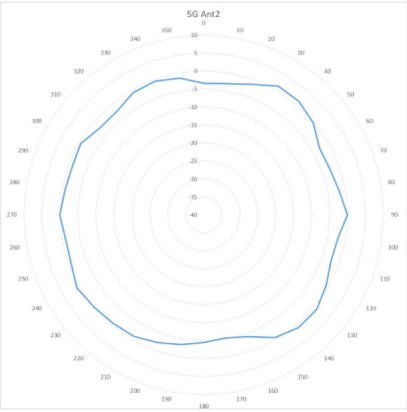
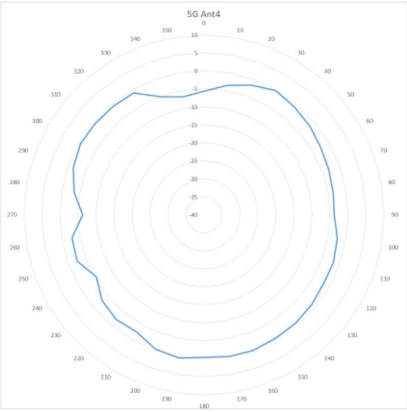
Accessories	RG-CAP72-O
Cable gland assembly	2 x cable gland assemblies for Ethernet cable and DC power cord 2 x cable gland assemblies for optical fiber and hybrid cable
Grounding wire	1 x 2 m (6.56 ft.) grounding wire
Hose clamp	2
Mounting bracket	1 x adjustable mounting bracket (W x D x H: 126 mm x 106 mm x 215 mm / 4.96 in. x 4.17 in. x 8.46 in.)
Screw	4 x M5 x 10 mm Dacromet-coated screws 2 x M8 x 60 mm expansion anchors
Terminal block	1

Manual	RG-CAP72-O
User Manual	1
Warranty Card	1

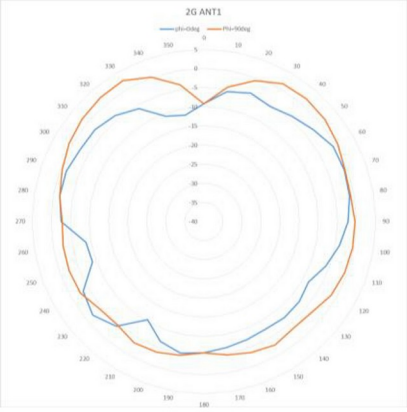
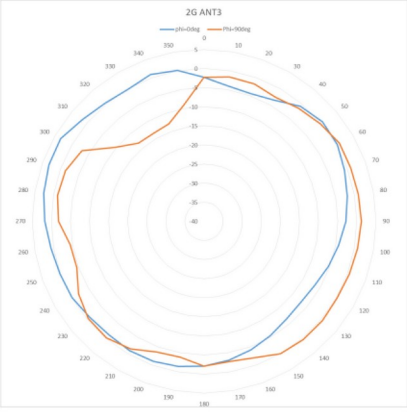
Antenna Pattern Plots

Horizontal Planes (Top View)

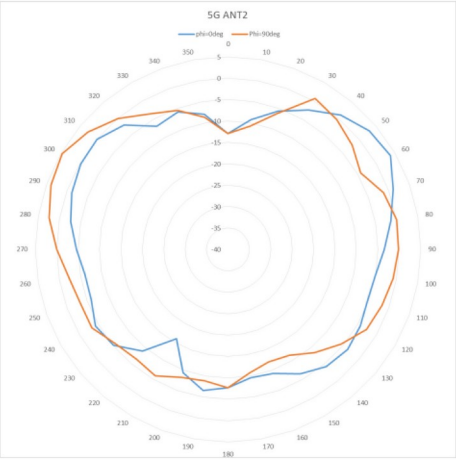
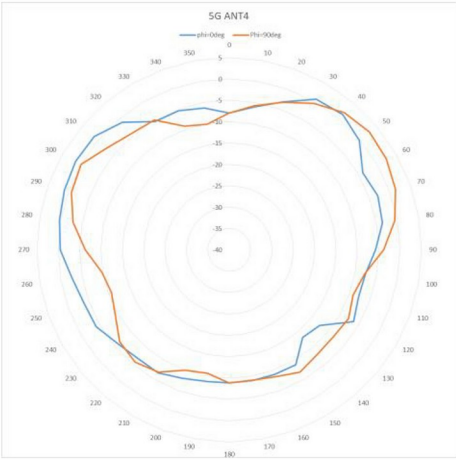
2.4G	
Ant1	Ant3
	

5G	
Ant2	Ant4
	

Vertical Planes (Side View, AP Facing Down)

2.4G	
Ant1	Ant3
	

Vertical Planes (Side View, AP Facing Down)

5G	
Ant2	Ant4
	

Ordering Information

Take the following ordering procedure:

Order an RG-CAP72-O.

The RG-CAP72-O supports two RP-SMA female connectors, which can be used to connect external antennas. Purchase an antenna if you need it.

Main Unit

Model	Description
RG-CAP72-O	Wi-Fi 7 dual-radio outdoor access point. Up to 4 spatial streams and a peak data rate of 3.57 Gbps. One RG-CNC license required. Compliance with IEEE 802.11a/b/g/n/ac/ax/be standards. Fit/Cloud mode switching. IEEE 802.3af/at-compliant PoE/PoE+ and DC power supply. Note: The power sourcing equipment (PSE) needs to be purchased separately. The DC power adapter needs to be purchased separately, and the output voltage/current must be 54 V/0.6 A.

Antennas

Model	Description
RG-ANT30-D2	High-performance dual-band directional outdoor antenna, designed for 2.4 GHz & 5 GHz directional coverage scenarios: 5 GHz: 20° H / V beamwidth, 15 dBi peak gain 2.4 GHz: 40° H / V beamwidth, 12 dBi peak gain
RG-ANT90-T2	Tri-band cross-polarized high-gain directional antenna for 2.4 GHz / 5 GHz / 6 GHz coverage; 2 x RP-SMA female connectors. Band1 (2400–2500 MHz): 65° H / 27° V beamwidth, 9 dBi peak gain Band2 (5150–6425 MHz): 65° H / 15° V beamwidth, 11 dBi peak gain Band3 (6425–7125 MHz): 60° H / 15° V beamwidth, 11 dBi peak gain

Optical Transceivers and Cables

1GE

Model	Description
GE-SFP-LH40-SM1310-BIDI	1000BASE-LH, SFP transceiver, Tx1310/Rx1550, BiDi LC, 40 km over SMF
GE-SFP-LH40-SM1550-BIDI	1000BASE-LH, SFP transceiver, Tx1550/Rx1310, BiDi LC, 40 km over SMF
MINI-GBIC-LH40-SM1310	1000BASE-LH, SFP transceiver, 1310 nm, Duplex LC, 40 km over SMF
MINI-GBIC-LX-SM1310	1000BASE-LX, SFP transceiver, 1310 nm, Duplex LC, 10 km over SMF
MINI-GBIC-SX-MM850	1000BASE-SX, SFP transceiver, 850 nm, Duplex LC, 550 m over MMF
MINI-GBIC-ZX80-SM1550	1000BASE-ZX, SFP transceiver, 1550 nm, Duplex LC, 80 km over SMF
CO-GE-SFP-LX-SM1310	1000BASE-LX, SFP transceiver, 1310 nm, Duplex LC, 10 km over SMF

2.5GE

Model	Description
2.5G-SFP-LX03-SM1310-BIDI-I	2.5GBASE-LX, SFP transceiver, Tx1310/Rx1550, BiDi LC, 3 km over SMF
2.5G-SFP-LX03-SM1550-BIDI-I	2.5GBASE-LX, SFP transceiver, Tx1550/Rx1310, BiDi LC, 3 km over SMF

Warranty

For more information about warranty terms and periods, contact your local sales agency.
Warranty terms: https://www.ruijie.com/en-global/support/servicepolicy
Warranty period: https://www.ruijie.com/en-global/support/servicepolicy/cybrey-product-warranty
Note: The warranty terms are subject to the requirements of different countries and distributors.

More Information

To learn more about the product, please visit our website or contact your local sales representative.

- 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: service_rj@ruijienetworks.com

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