OT-RG-AP680(CD) Series
Wireless Access Point Datasheet

Product Highlights

- **Wi-Fi 6 Certified**

- **Max 2.4Gbps with concurrent dual-band Design**

- **Max 1024 Client** connections

- **Built-in Smart Directional Antenna**

- **Outstanding Environmental Adaptability (IP68, -40-65°C, Surge Protection upto 9kV)**

- **OFDMA, MU-MIMO and BSS Technology** for minimal wireless signal interference

- **Hybrid Management:** support standalone AP to over thousands of APs with deployment options of appliances, private cloud or public cloud service

- **Mobility Management:** Free mobile app available for OT-RG-MACC-Base private cloud or O-Tech Public Cloud customers

Product Overview

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

The OT-RG-AP680(CD) provide concurrent dual-band with up to 2.4Gbps access rate, offers 4 spatial streams and built-in directional antenna. OT-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 the wireless network security, RF control, mobile access, QoS, seamless roaming and other important factors into account. Teaming up with O-Tech OT-RG-WS Wireless Controller Series/Cloud AC, the APs offer Wi-Fi user data forwarding, advanced security and access control with ease.

OT-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 built-in directional antenna, OT-RG-AP680(CD) can achieve the Wi-Fi coverage in 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: O-Tech Cloud** – O-Tech 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 O-Tech Cloud Mobile App (free download), SME customers can provision and manage their networks at fingertips.

• **Hybrid Cloud: OT-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.

Product Features

Wi-Fi 6 (802.11ax) Technology

1024-QAM High-speed Access Rate
OT-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
OT-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
OT-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, OT-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 OT-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
OT-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, OT-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.

Wi-Fi 6 Equipment For All Scenarios: Always One Option Fit For You

Ruijie is one of the leading enterprise networking suppliers worldwide and committed to providing the best Wi-Fi experience to our stakeholders. We are the first supplier to provide full-scenario Wi-Fi 6 access point solution in the market, ranging from indoor, wall plate to outdoor access points, guaranteeing perfect wireless experience in various situations.

OT-RG-AP820-L(v2)	OT-RG-AP880-I	OT-RG-AP840-I
RG-AP820-L(v2) Highest price performance ratio	**RG-AP880-I** Remarkable versatility	**RG-AP840-I** IoT AP for Smart Wi-Fi Project

OT-RG-AP180	OT-RG-AP680(CD)
RG-AP180 Smart IoT Wall AP for Hotel	**RG-AP680(CD)** Ideal for Outdoor (IP68)

For details, please visit www.terzian.com.br

## Easy Installation & Deployment

Easy-to-use Mount-Kit
An adjustable mount-kit is available by default for painless deployment optimization. The APs can be easily adjustable (total in 60°) to adapt to various scenarios.

Adjustable Mount-kit of AP680 Outdoor Access Point

Flexible Gigabit Uplink Options
The OT-RG-AP680(CD) outdoor access point offers a 10/100/1000Base-T Ethernet uplink port that rids the LAN port of being the wireless access bottleneck, and a 1000M SFP port that adapts to wired networking structure under different user scenarios. The SFP Base-X port takes up the data transmission workload for optimal network deployment.

10/100/1000 Base-T Mbps (PoE In) Port

SFP Port
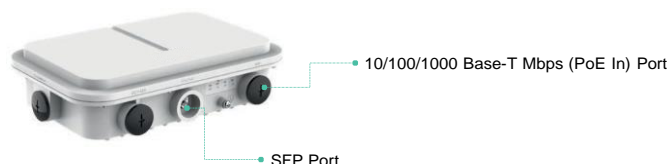
Comprehensive Security Policies

User Data Encryption
OT-RG-AP680(CD) offers comprehensive data security protection with encryption technologies such as WEP, TKIP and AES, guaranteeing the data transmission security of the wireless network.
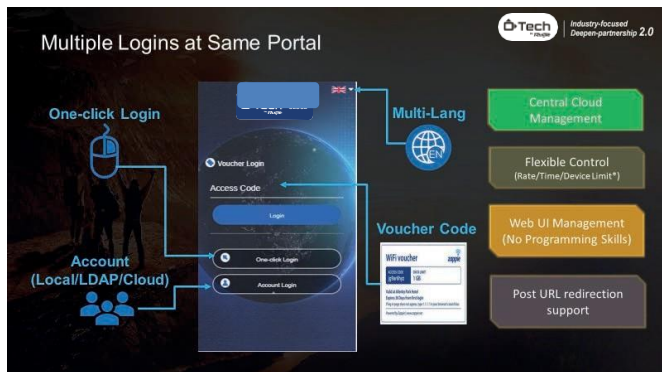
RF Security
In collaboration with Ruijie's RG-SNC Smart Network Commander and RG-WS Wireless Controllers, OT-RG-AP680(CD) enables the RF probe scanning mechanism to detect unauthorized access points or other RF interference sources. Once detected, the AP will alert the network administrator to monitor potential threats and usage status in the wireless environment.

ARP Spoofing Protection
The ARP detection feature effectively suppresses the phenomenon of ARP gateway spoofing and ARP host spoofing in the network, and ensures the normal Internet access of users. Automatic binding can be achieved for both dynamic and static IP allocation, which greatly reduces labor costs and management costs. The ARP rate limit feature allows you to limit the rate of ARP packets to prevent the malicious use of scanning tools to perform ARP flooding which occupies the network bandwidth and causes network congestion attack.

Multiple Easy-to-use Authentication Modes

With O-Tech Cloud Service or RG-MACC Software controller, the OT-RG-AP680(CD) outdoor access point supports a wide range of authentication methods such as Guest Hotspot, 802.1x, voucher/ access code, user account, and social authentication. Complying with the standard network access control, users are set on a combination of user access, authorization, equipment compliance check, network behavior monitoring, network attack prevention, etc. All these control features guarantee high network security for authenticated users.

Multi authentication options for guests and employees

High Availability Design

Authentication Oᴏoad and Acceleration

Powered by O-Tech Cloud and EasyGate (EG) security gateway, captive portal and account & voucher authentication can be managed by Cloud, but all security policy and enforcement will be processed locally at EG security gateway. It not only accelerates the overall authentication processing, and also provide additional service availability protection in case of Cloud or WLAN Controller is unreachable, all authentication service still un-interrupted.

Ruijie EG's Authentication Oᴏoad and Acceleration

Remote Intelligent Perception Technology (RIPT)

In the traditional network architecture where FIT APs are centrally managed by a wireless controller, packets received by the AP must be transmitted to the controller before being forwarded. When the wireless controller becomes faulty, the APs will fail to work properly causing whole network
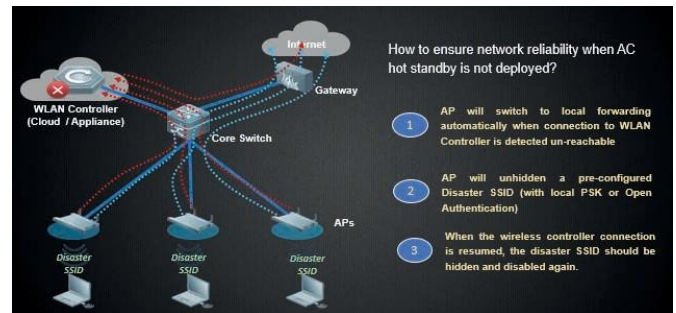
RIPT Disaster Recovery

O-Tech 's latest RIPT provides you a complete disaster recovery solution and enables the Wireless Controller Series to implement intelligent link perception. Once the faulty controller is detected, the APs will quickly switch to the intelligent mode to continue data forwarding, ensuring the high availability of the wireless network and keeping wireless users always online.

Hybrid Management

All O-Tech enterprise APs support hybrid management mode. Either deployed as standalone AP (Fat mode) or managed AP (Fit and MACC 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 below wireless controller options depending on the functionality and capacity:

Below are the summarized feature highlights for various O-Tech management system options which target for specific industry segments:

| Category	Standalone AP	Hardware Controller (RG-WS6000)	Ruijie Public Cloud	Hybrid Cloud* (RG-WS6000 + Ruijie Cloud)	Private Cloud (RG-MACC)
Target Segment	Small Office (<10 employees)	Enterprise, Education, Large Campus	Small and Medium-sized Enterprise (<500 Employees)	ISP/MSP, Gov, or MNC	ISP/MSP, Gov, or MNC
Deployment	On-premises	On-premises	Cloud Service	On-premises + Cloud Service	Software-based
Device C	N/A	Up to 5000	Virtually Unlimited	Up to 5000	Virtually Unlimited
Unified Management	N/A	AP only	AP, Switch and Gateway	AP, Switch and Gateway	AP, Switch and Gateway
Radio Optimization (powered by WIS)	N/A	Y	Y	Y	Y
Employee Authentication	Basic PSK	PSK, PPSK, 802.1x	PSK, PPSK, Access Code, Account, 802.1x	PSK, PPSK, 802.1x	PSK, PPSK, Access Code, Account, 802.1x
Guest Authentication	Basic PSK	Captive Portal	Captive Portal, One-click, Voucher	Captive Portal, One-click, Voucher**	Captive Portal, One-click, Voucher
Marketing Wi-Fi	N/A	N/A	Coming Soon*	Coming Soon*	Support
Reporting	N/A	N/A	Support	Support	Support
Mobile App	N/A	Coming Soon*	Support	Coming Soon*	Support

*new feature to be available in year 2020
**O-Tech EG Gateway required

Bluetooth Serial Port for Easy Maintenance

OT-RG-AP680(CD) supports switching between Bluetooth serial port and iBeacon. If the default configuration is Bluetooth serial port, when equipment failure occurs, the administrator can manage the device via the mobile phone without requiring to climb up the pole to reach the device.

Mobile Monitoring and Optimizing

Ruijie is committed to providing more simple networking experience for customers by launching a free mobile app[1] (namely O-Tech Cloud) for unified device lifecycle managmeent, which is not only for O-Tech access points, but also for switches and security gateways, from provisioning, monitoring, configurations to optimization.

GET IT ON Google Play   Download on the App Store
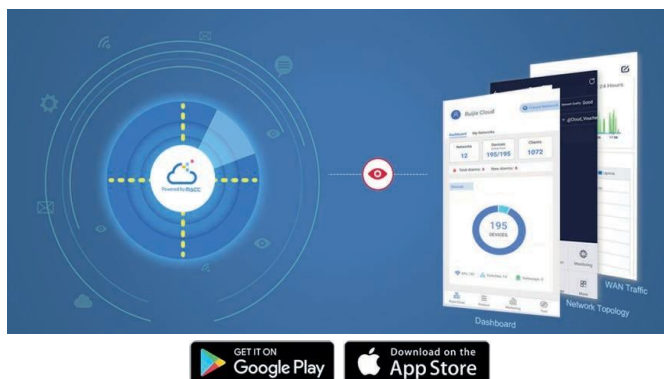
Note:
[1] O-Tech Cloud mobile app is compatible with O-Tech Cloud service, RG-MACC or OT-RG-WS6000 Series wireless controller
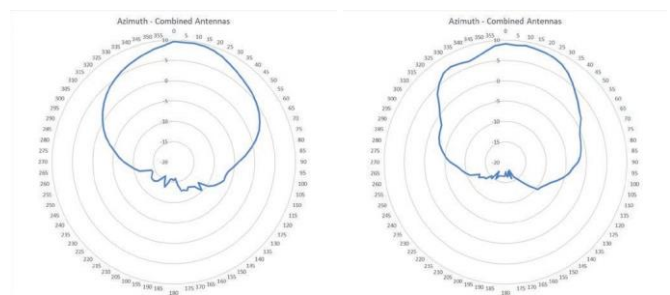
Warranty Information

The O-Tech OT-RG-AP680(CD) Outdoor Access Point come with 3 year warranty. For more details, please visit www.terzian.com.br

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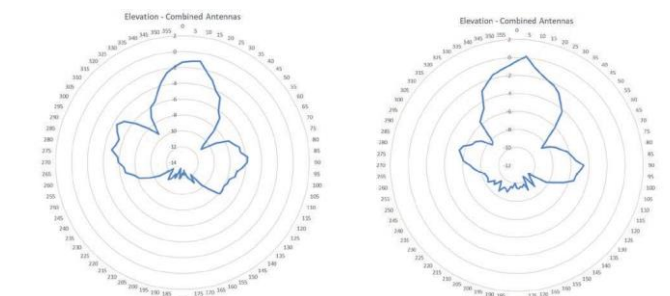
Antenna Patterns

Horizontal planes (top view)
Below are the OT-RG-AP680(CD) 2.4GHz and 5GHz azimuth antenna patterns:

OT-RG-AP680(CD) 2.4GHz (Left) and 5GHz (Right) Azimuth Antenna Patterns

Vertical (elevation) planes (side view, AP facing down)
Below are the OT-RG-AP680(CD) 2.4GHz and 5GHz elevation antenna patterns:

OT-RG-AP680(CD) 2.4GHz (Left) and 5GHz (Right) Elevation Antenna Patterns

ANATEL

Technical Specifications

Model	OT-RG-AP680(CD)
Hardware specifications	
Radio	Dual-radio dual-band
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	251mm × 168mm × 64mm (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

Model	OT-RG-AP680(CD)
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 CERTIFIED™ a, b, g, n, ac · Wi-Fi CERTIFIED 6™ · WPA3™-Enterprise, Personal · Wi-Fi Enhanced Open™ · Wi-Fi Agile Multiband™ · WMM®

Software Features		
WLAN	Maximum clients per AP	1024
	SSID capacity	Up to 32
	SSID hiding	Support
	Configuring the authentication mode, encryption mechanism and VLAN attributes for each SSID	Support
	Remote Intelligent Perception Technology (RIPT)	Support
	Smart device recognition	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

Model		OT-RG-AP680(CD)
Security	PSK and web authentication	Support
	Data encryption	WPA (TKIP), WPA-PSK, WPA2 (AES), WEP (64 / 128-bit)
	WeChat authentication	Support
	QR code authentication	Support
	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
	CPU Protection Policy (CPP)	Support
	Network Foundation Protection Policy (NFPP)	Support
Routing	IPv4 address	Static IP address or DHCP
	IPv6 address	IPv6 terminal access authentication, ICMPv6
Management and Maintenance	Supported wireless LAN controllers	O-Tech WS Series Wireless Controller O-Tech MACC-Base Software Controller O-Tech Cloud (Public Cloud)
	Management protocol	Telnet, SSH, TFTP, Web
	Wireless Intelligent AI Optimization Service (WIS)	Support
	SNMP	SNMPV1,V2c,V3
	Syslog / Debug	Support
	FAT/FIT/MACC mode switching	Factory default firmware supports FAT (standalone) or FIT mode (WS controller) or MACC mode (Ruijie MACC-Base or Ruijie Cloud) management

Application Scenarios

Public Cloud for SMEs

With Ruijie Public Cloud Service adoption, the OT-RG-AP680 Wi-Fi 6 series access point is perfect for various SME scenarios including small offices, boutique hotel, retail store and etc. O-Tech Cloud is the only vendor offering Enterprise Cloud at Lifetime FREE, which significantly streamline the IT operational efficiency, as well as reducing the Wi-Fi deployment complexity with cost effective approach for SMEs. The O-Tech Cloud service provide equipment deployment, monitoring, network optimization and operational lifecycle management; enabling customers with simple plug and play deployment and operation and maintenance. Meeting the needs for automatic cloud RF planning and user experience monitoring, it also supports mobile monitoring and alert, and fast provisioning by QR-Code scanning. At the same time, it provides flexible wireless user access control features, including high security "One person, one machine and one password" PPSK, built-in cloud Portal and Facebook social login.

Ruijie Cloud Solution Highlights

Key Features:

- Unified Device Management
- Fast Provisioning by Mobile APP
- Secure PPSK Authentication for Staff
- Captive Portal & Social Authentication for Guest
- Mobile APP Monitoring & Alert

Private Cloud for ISP/MSP & Government

For enterprises with high demand on security, billing and portal system integration, along with diverse customer sites, the O-Tech OT-RG-MACC private cloud solution is recommended, especially for ISP/MSP and government sector.

The O-Tech OT-RG-MACC (Managed @ Cloud Center) is a revolutionary cloud management platform which supports unified management and configuration of APs, switches and gateway devices, as well as value-added marketing features and survey, etc. The OT-RG-MACC is designed for education, retail chain stores, shopping malls, hotels, transportation, small and medium-sized enterprises, network operators and settings alike. The OT-RG-MACC is consisted of various feature modules, such as management, marketing, AAA (authentication, authorization and accounting) and diagnostic tools, etc. The platform supports multi-tenancy feature, which is an ideal choice for ISP to deliver cost-effective managed service solution for massive SME customers.

OT-RG-MACC Private Cloud typical solution architecture:
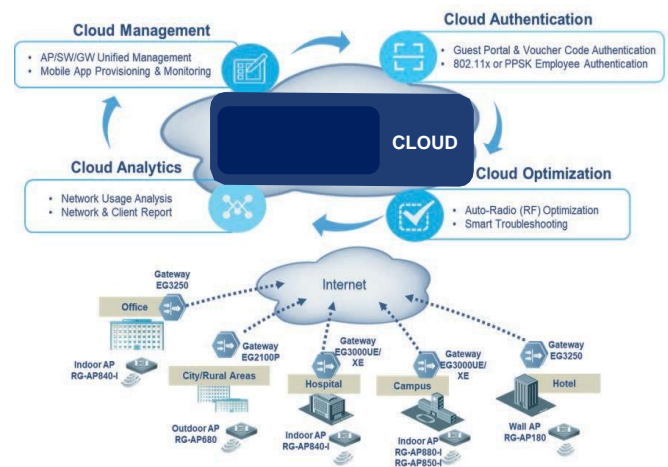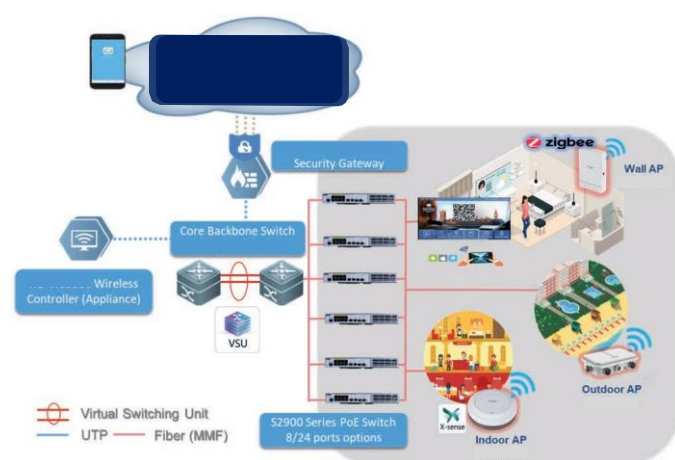

Solution Benefits:

- Support multi-tenant management
- Support cloud computing virtualization deployment
- Support unified networking device management, including access points, switches and gateway devices
- Support mobile app management
- Open API available for 3rd party integration

Hybrid Cloud for Enterprise & Campus

For enterprise office and campus with single or multiple sites and high-density AP deployment, O-Tech OT-RG-WS6000 Series Wireless Controllers (on-premises) plus cloud management (optional) is recommended. The wireless 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.

Solution Benefits:

• Support centralized device management and reporting service by O-Tech Cloud (optional)

• Support ultra-seamless roaming management

• Support one-click AI radio (RF) optimization powered by WIS engine

• High performance and security with all user authentication and traffic forwarding handled locally

• Support flexible authentication options, such as 802.1x, PPSK employee authentication, guest hotspot and voucher access code, etc.

• Support all series of O-Tech wireless access points

Ordering Information

Model	Description
OT-RG-AP680(CD)	O-Tech Wi-Fi 6 (802.11ax) outdoor wireless access point, dual-band dual-radio, up to 575Mbps@2.4G, 1200Mbps@5G and 1775Mbps per AP, 4 spatial streams, built-in directional antenna, support 802.11a/b/g/n/ac and 802.11ax, FAT/FIT mode, 1 SFP port and 1 10/100/1000M port, PoE or local power supply, bundled with Ruijie Cloud Service lifetime license (Installation Mount-Kit included, but PoE adaptor sold separately)

Ruijie Networks Co., Ltd.

For further information, please visit our website https://www.ruijienetworks.com

www.mdftechnology.com.br | comercialmdftechnology.com.br | (11) 4134-1720