H3C WA6600 New Generation Access Point

802.11ax Indoor Series Access Point

Release Date: July 2021

New H3C Technologies Co., Limited

H3C WA6600 New Generation 802.11ax Indoor Series Access Points

Overview

H3C WA6600 series access points are the latest generation wireless access points developed based on 802.11ax standard. They are designed with dual-radio or creative triple-radio 802.11ax technology standard respectively, and provide a transmission speed at least 2 times faster than 802.11ac products. This makes the series suitable for high-density access scenarios, such as hotel, stadium, and enterprise campus, and e-schoolbag applications.

H3C WA6600 series includes three indoor models - WA6622, WA6628 and WA6638. With built-in antennas, both WA6622 and WA6628 support dual radio, and WA6638 support triple radio. All models support multi-rate uplink ports with the max speed of 5Gbps or 10Gbps. They are compact in appearance and support both wall mounting and ceiling mounting.

H3C WA6622 Internal Antennas 6 Streams Dual Radio 802.11ax/ac/n AP

H3C WA6628 Internal Antennas 12 Streams Dual Radio 802.11ax/ac/n AP

H3C WA6638 Internal Antennas 12 Streams Triple Radio 802.11ax/ac/n AP

Features and benefits

New-generation Wi-Fi standard 802.11ax (Wi-Fi 6)

802.11ac, the fifth-generation wireless technology, provides a transmit rate of up to 1733Mbps per radio. 802.11ax, the sixth-generation wireless technology, provides a maximum of eight spatial streams per 5GHz radio and up to 4.8Gbps in transmission speed. For example, the WA6628 dual-radio AP can provide up to 5.95Gbps access rate (4.8Gbps on 5GHz plus 1.15Gbps on 2.4GHz), which is suitable for all high-density access scenarios and provides better access experience.

DL/UL MU-MIMO

H3C WA6600 series AP supports DL/UL MU-MIMO technology, which is the most important feature of 802.11ax. DL/UL MU-MIMO technology allows AP to send data to multiple stations simultaneously. For example, WA6628 can communicate with up to eight stations at the same time, breaking through the traditional wireless serial communication mechanism, increasing the utilization rate of wireless spectrum resources, improving the number of effective access users and access experience under high-density deployment.

Smart cloud access and optimal WLAN TCO

The WA6600 series complies with the 802.11ax standard. It works on dual or triple radio and provides high-speed transmission that is at least 2 times faster than 802.11ac products under the same conditions. The WA6600 series is available for easy maintenance and management from the H3C Cloudnet platform. Through smart RF optimization technologies, the series provides mobile cloud access in coverage scope, access density, and operation stability, and achieves the optimal wireless network Total Cost of Ownership (TCO).

High-efficiency uplink ports with support of multiple rates

The uplink ports on the WA6600 support auto-negotiation of various transmit rates, including 100Mbps, 1000Mbps, 2.5Gbps, and 5Gbps. Both WA6628 and WA6638 support 10Gbps multi-rate uplink. Both Ethernet ports of WA6628 support PoE and they can work simultaneously for high reliability and availability.

Orthogonal frequency division multiple access (OFDMA)

802.11ax uses OFDMA to allow multiple users to transmit data simultaneously. OFDMA splits a channel into sub-channels, known as resource units (RUs), with specific subcarriers, and assigns RUs to different users for simultaneous transmission. OFDMA enables simultaneous multi-user transmission and reduces latency caused by channel contention.

Spatial multiplexing

802.11ax assigns a different color per BSS to help WA6600 identify co-channel interference and stop transmission in time. If a radio detects 802.11ax signals from a BSS that has the same color as the radio's BSS, it determines that co-channel interference exists and stops data transmission. This optimizes frequency reuse and improves network capacity.

Target Wake Time (TWT)

TWT improves power efficiency and reduces contention by increasing client sleep time and allowing negotiation of the times that clients can access the medium.

Built-in Bluetooth

H3C WA6600 series adopts built-in Bluetooth module which can support 10m long-distance Console function, avoid additional workload in the process of equipment installation and maintenance, reduce the difficulty of troubleshooting, and support iBeacon shaking.

Support for IoT services

For the various application in IoT era, WA6622 and WA6638 have been designed IoT port for H3C T300 IoT modules to provide short-distance and low-power consumption IoT services, such as BLE, RFID, ZigBee, and UWB. Those APs can connect up to ten T300 modules by IoT port. Both this IoT port and network port support link aggregation (LACP) which increase availability and capacity.

Green design

WA6600 employs a green design that supports dynamic MIMO power saving (DMPS), enhanced automatic power save delivery (E-APSD), and smart identification of terminal network requirements. It can dynamically adjust the MIMO working mode and efficiently put terminals to sleep.

WA6600 supports green AP mode that enables single radio standby and allows for more precise power control.

WA6600 supports the innovative per-packet power control (PPC) technology, which reduces standby power consumption and improves mobile device standby time.

Local forwarding

WA6600 supports both centralized forwarding and local forwarding. With centralized forwarding, APs tunnel incoming data frames to the AC and the AC forwards the data frames. With local forwarding, APs directly forward data frames. The local forwarding mode significantly saves wired bandwidth.

IPv4 and IPv6 dual stack (Native IPv6)

WA6600 is fully compliant with IPv6, and implements dual IPv4/IPv6 protocol stacks. It can automatically associate with an AC to provide wireless services no matter in an IPv4 or IPv6 network, so that it never runs as an information silo.

End user Admission Defense (EAD)

As one of components of H3C iMC, EAD integrates network access and endpoint security products, and helps ensure that only wireless clients that comply with enterprise security policies can access the network. When working with a security policy server, it can remind users, isolate or log them off when their systems are infected or not patched correctly. Only wireless clients that are complied with security policies are admitted. This enhances overall wireless security.

Remote probing and analysis

WA6600 can act as a remote probing and analysis sensor to monitor a WLAN, collect channel information, and report the information to the local device for further analysis. This can satisfy wireless network monitoring and maintenance requirements.

RF Optimizing Engine (ROE)

ROE, through feature- and protocol-based RF optimization, provides greater speed and QoS in middle- to high-density access and streaming media transmission scenarios. It provides features such as multi-user fairness, mixed access fairness, interference filtering, speed optimization, band navigation, multicast optimization (IPv4/IPv6), per-packet power control, and intelligent bandwidth guarantee.

Real Time Spectrum Guard (RTSG)

Real Time Spectrum Guard (RTSG) is the innovative H3C professional state-monitoring program for the wireless spectrum. H3C 802.11ax series AP supports the internal RF data acquisition module to achieve deeply integrated monitoring and real time spectrum protection.

The RTSG Console is integrated into the iMC (intelligent Management Center), and performs data acquisition

through the CAPWAP tunnel management and Sensor AP. It can achieve 24x7 wireless signal quality monitoring, trend assessment and unauthorized interference alert. Through active probe and 2.4GHz/5GHz RF interference source (WiFi or non-WiFi) in every band, it provides a graphic representation of real-time FFT plot of the spectral density plot, spectrum diagram, the duty cycle map, event spectrum diagram, channel gain and interference gain. It can also automatically identify the source of interference, to determine the location of rogue wireless equipment, to ensure the wireless network is always in great shape. Combined with H3C iMC IAR (Intelligent Analysis Report) module, it can maintain a complete history of RF quality in the coverage area, including its trace and playback, automatically generate customized trend, compliance and audit reports.

To cater for the different supervision demands in user's wireless environment, the RTSG solution can be deployed in either Local mode or Monitor mode. In Local Mode, you can maintain normal user access and data packet forwarding without compromising effective spectrum protection.

H3C Cellular Coexistence Feature (CCF)

H3C uses built-in hardware filtering to minimize the impact of interference from 3G/4G cellular networks.

Anchor AC mode

Anchor AC mode is designed for networks of all sizes, including SMB. In Anchor AC mode, AP will serve as a virtual controller for the entire network.

Could-based Management

H3C cloud-managed APs were developed based on the Cloudnet platform, on which network administrators can manage the cloud-managed APs directly, for example, view cloud-managed AP status in real time and deploy configurations from the cloud to cloud-managed APs. This greatly improves network efficiency and enhances security and stability.

Intelligent load balancing

WA6600 supports session- and traffic-based load balancing. When the load of the AP reaches the upper limit, the AC rejects the association requests of new clients and directs the clients to another AP with smaller load. What sets H3C intelligent load balancing apart from existing load balancing solutions is that it starts load balancing only for clients that are in the overlapping AP coverage. This maximizes wireless network capacity.

Intelligent unified wired and wireless management

The whole series of H3C wireless products can be managed by the Wireless Service Manager (WSM) component of H3C Intelligent Management Center (IMC). WSM provides unified management of wired and wireless networks, adding wireless network management functions into existing wired network management systems.

WSM offers a simple and user friendly management platform for wireless network administrators. It implements panel management, troubleshooting, performance monitoring, software version control, configuration management, and user access management of wireless devices. In addition, it can manage wired devices by cooperating with other components in IMC.

Technical specifications

Hardware specifications

Item	WA6622	WA6628	WA6638
Weight	0.94 kg	1.28 kg	1.28 kg
Dimensions (H × W × D)	43 × 210 × 210 mm (1.69 × 8.27 × 8.27 in)	52 × 239 × 236 mm (2.05 × 9.41 × 9.29 in)	52 × 239 × 236 mm (2.05 × 9.41 × 9.29 in)
Uplink Ethernet ports	Port 1: 100M/1000M/2.5G/5G, RJ-45 Port 2: 100/1000M, RJ-45, IoT	Port 1: 100/1000M/2.5G/5G/10G, RJ-45 Port 2: 100/1000M, RJ-45	Port 1: 100/1000M/2.5G/5G/10G, RJ-45 Port 2: 100/1000M, RJ-45
PoE+	Port 1: 802.3at/af	Port 1: 802.3bt/at Port 2: 802.3at Both ethernet ports support PoE and they can work simultaneously	Port 1: 802.3bt/at
Local power supply	54 VDC	54 VDC	54 VDC
Passive Power over Ethernet (48V)	Supported	Supported	Supported
PoE power	Port 2 (GE)	Not supported	Port 2 (GE)

Item	WA6622	WA6628	WA6638
out			
Console port	One (RJ-45)		
USB port	One		
Built-in antenna	Built-in omni-directional antenna 5dBi antenna gain@2.4GHz 5dBi antenna gain @5GHz	Built-in omni-directional antenna 3dBi antenna gain @2.4GHz 4dBi antenna gain @5GHz	Built-in omni-directional antenna 3dBi antenna gain @2.4GHz 4dBi antenna gain @5GHz 4dBi antenna gain @5GHz
Built-in Bluetooth	Supported (Support to switch RFID through software)		
IoT Extension	BLE, RFID, ZigBee, etc.	Not supported	BLE, RFID, ZigBee, etc.
Working frequencies	802.11ax/ac/n/a: 5.725 to 5.850 GHz; 5.47 to 5.725 GHz; 5.15 to 5.35 GHz 802.11ax/b/g/n: 2.4 to 2.483 GHz		
Modulation technology	OFDM: BPSK@6/9Mbps, QPSK@12/18Mbps, 16-QAM@24Mbps, 64-QAM@48/54Mbps DSSS: DBPSK@1Mbps, DQPSK@2Mbps, CCK@5.5/11Mbps (file://dbpsk@1mbps, dqpsk@2mbps, cck@5.5/11Mbps) MIMO-OFDM (11n): MCS 0-31 MIMO-OFDM (11ac): MCS 0-9 MIMO-OFDM (11ax): MCS 0-11		
Modulation mode	11b: DSS: CCK@5.5/11Mbps, DQPSK@2Mbps, DBPSK@1Mbps 11a/g: OFDM: 64QAM@48/54Mbps, 16QAM@24Mbps, QPSK@12/18Mbps, BPSK@6/9Mbps 11n: MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM 11ac: MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM, 256QAM 11ax: MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM		
Maximum transmit power	2.4G: 25dBm, 5G: 30 dBm (Transmit power is multi-chain combined power, no antenna gain is included. The actual transmit power depends on local laws and regulations)		
Adjustable power granularity	1 dBm		
Reset/restoration to factory default	Supported		

Item	WA6622	WA6628	WA6638
State LED	Alternating flashing mode, orange/green/blue for different working states, breathing mode		
Temperature	Operating temperature: -10°C to +55°C (32°F to 113°F) Storage temperature: –40°C to +70°C (–40°F to +158°F)		
Humidity	Operating: 5% to 95% (non-condensing) Storage: 5% to 95% (non-condensing)		
Protection class	IP42		
Overall power consumption	< 30 W (excluding IoT modules and USB)		
Safety compliance	GB4943, EN60601-1-2 (medical electrical equipment), UL/CSA 60950-1, EN/IEC 60950-1, EN/IEC 60950-22		
EMC	GB9254, EN301 489, EN55022, FCC Part 15, RSS-210		
Radio frequency certification	FCC Part 15, EN 300 328, EN 301 893, and MIIT SRRC		
Health	FCC Bulletin OET-65C, EN 50385, IC Safety Code 6		
MTBF	> 250000 hours		

Software specifications

Item		WA6622	WA6628	WA6638
Compliance	802.11	Indoor, compliant with 802.11a/b/g/n/ac/ax		
802.11ax	Working frequencies and MIMO	5GHz, 4×4:4 MU-MIMO 2.4Gbps 2.4GHz, 2×2:2 MU-MIMO 0.575Gbps	5GHz, 8×8:8 MU-MIMO 4.8Gbps 2.4GHz, 4×4:4 MU-MIMO 1.15Gbps	5GHz (1), 4×4:4 MU-MIMO 2.4Gbps 5GHz (2), 4×4:4 MU-MIMO 2.4Gbps 2.4GHz, 4×4:4 MU-MIMO 1.15Gbps
	20MHz/40MHz/80MHz bandwidth	Supported		

Item		WA6622	WA6628	WA6638
	80MHz+80MHz/160MHz bandwidth	Supported	Supported	Supported
	Maximum transmission speed	2.975 Gbps	5.95 Gbps	5.95 Gbps
	A-MPDU(TX/RX)	Supported		
	A-MSDU(TX/RX)	Supported		
	Maximum likelihood decoding (MLD)	Supported		
	Maximum-ratio combining (MRC)	Supported		
	Space-time block coding (STBC)	Supported		
	Low-density parity-check (LDPC)	Supported		
	Cyclic Delay Diversity (CDD)/Cyclic Shift Diversity (CSD)	Supported		
	DFS(dynamic frequency selection)	Supported		
	Transmit Beamforming	Supported		
WLAN basics	Maximum number of clients per radio	512		
	Virtual APs	32 As a best practice, configure a maximum of five virtual APs for each radio.		
	Open system/shared key authentication	Supported		
	Broadcast probe request acknowledge control	Supported		
	Concurrent login of WPA, WPA2, WPA3 and Pre-RSNA users	Supported		
	RTS/CTS	Supported		
	CTS-to-self	Supported		

Item		WA6622	WA6628	WA6638
	802.11k and 802.11v smart roaming	Supported		
	802.11r fast transition roaming	Supported		
	Hide SSID	Supported		
	Advanced Traffic Management	Supported		
	Hotspot 2.0	Supported		
	Restrict low rate/sticky terminals access	Supported		
	Channel reuse	Supported		
	Receiver sensitivity adjustment	Supported		
	Automatic channel/power/bandwidth adjustment	Supported		
WLAN extension	Station related	Abnormal offline check, station aging, statistics and status query		
	Client number limit	Supported		
	Link integrity check	Supported		
	Repeater mode	Supported		
Security policy	Encryption	WEP-64/128/152bit, dynamic WEP, TKIP, CCMP ,WPA3,AES,EAP		
		Multiple triggering conditions for unicast and broadcast key update		
	802.11i	Supported		
	Authentication	802.1X authentication, MAC authentication, PSK authentication, Portal authentication, PPSK H3C WX series access controllers might be required for authentication.		
	User isolation	Layer 2 user isolation SSID-based user isolation		
	Forwarding security	Packet filtering MAC address filtering		

Item		WA6622	WA6628	WA6638
		Broadcast storm suppression		
	Wireless terminal access	Wireless EAD		
	SSID and VLAN binding	Supported		
	Rogue device detection and countermeasure	Supported		
	Dynamic ARP Inspection (DAI)	Supported		
	IP Source Guard (IPSG)	Supported		
	WIDS/WIPS	Supported		
	Management frame protection (802.11w)	Supported		
AAA	RADIUS client	Supported		
	Multiple-domain authentication server	Supported		
	Backup authentication server	Supported		
Layer 2 and Layer 3 features	IP address configuration	Static IP (available only in fat AP mode) DHCP assigned IP (Option 60)		
	Native IPv6	Supported		
	IPv6 Portal	Supported		
	IPv6 SAVI	Supported		
	ACL	IPv4/IPv6		
	Local forwarding	Local forwarding based on SSID and VLAN		
	Multicast	IGMP Snooping/MLD Snooping		
	DHCP Server/client/relay	Supported		
	NAT	Supported		
	Link Layer Discovery Protocol (LLDP)	Supported		
	SSID-based VLAN assignment	Supported		
	EoGRE Tunnel	Supported		
QoS	802.11e	Wi-Fi Multimedia (WMM)		

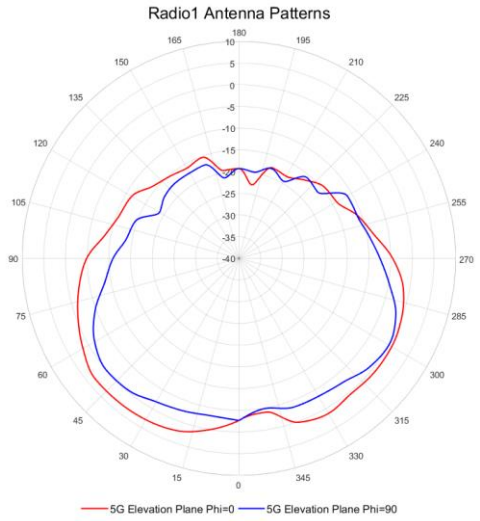
Item		WA6622	WA6628	WA6638
	Priority	802.1p priority and marking on Ethernet ports		
		Priority mapping for wired and wireless packets		
	QoS policy mapping	SSID/VLAN and QoS policy mapping		
	Layer 2 to Layer 4 packet filtering and traffic classification	Supported		
	CAR	Supported		
	Client bandwidth management	Station-based bandwidth allocation SSID-based bandwidth allocation		
	Load balancing	Traffic-based load balancing Session-based load balancing Frequency-based load balancing (supports dual-band)		
	Airtime optimization	Supported		
	Airtime fairness	Supported		
	Band navigation(5G priority)	Supported		
	Multicast optimization (IPv4/IPv6)	Supported		
	Call Admission Control (CAC)	Session-based CAC Channel usage-based CAC		
	Layer 4-7 application identification	Coupled with H3C WLAN ACs, the APs can identify variety of applications and policy control can be implemented including priority adjustment, scheduling, blocking, and rate limiting on users		
	SVP Phone	Supported		
Power saving	PPC	Supported		
	Green AP mode	Supported		
	Dynamic MIMO power saving	Supported		
	E-APSD	Supported		
	WMM Power Save	Supported		
Management	Network management	Trap, HTTP(S), SSH, Telnet, FTP/TFTP, SNMP V1/V2/V3		

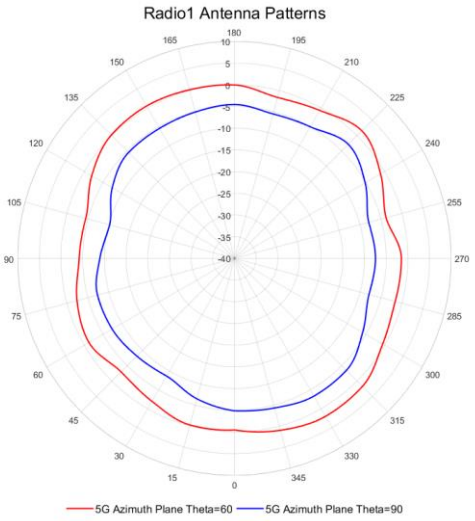
Item		WA6622	WA6628	WA6638
and maintenance		only applicable in Cloud/Fat mode		
	Management SSID	Supported		
	Syslog	Supported		
	Remote probing and analysis	Supported		
	AP Working Mode	Fit/Anchor/Cloud/Fat		
Wi-Fi Certified	IEEE 802.11a/b/g/n/ac/ax, WMM, WPA, WPA2 and WPA3 – Enterprise, Personal (SAE), Enhanced Open (OWE),Wi-Fi Alliance			

Antenna Patterns

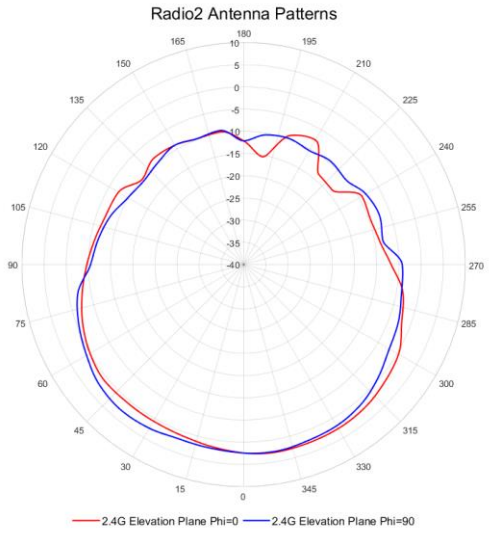
WA6622:

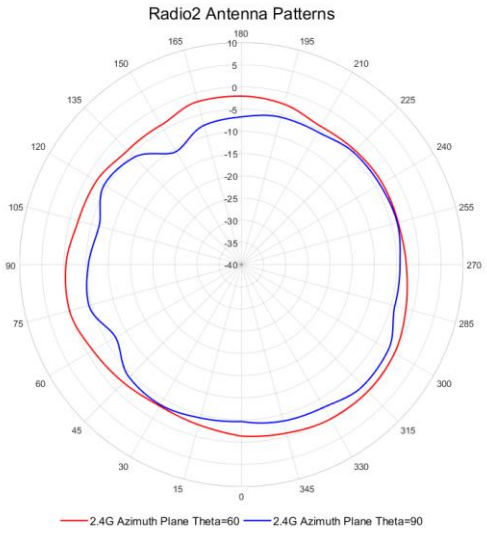
Radio1: 5GHz (AP front facing down)





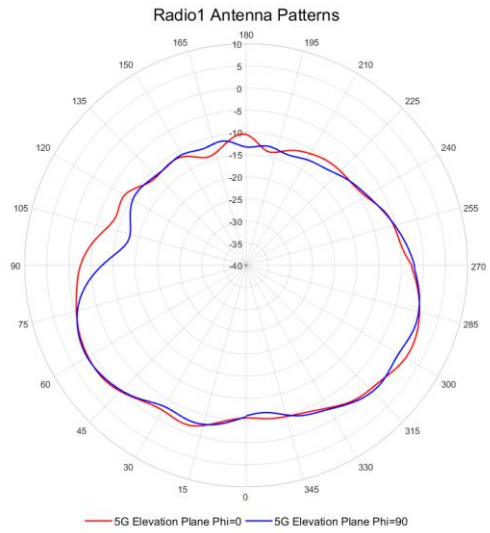
Radio1: 2.4GHz (AP front facing down)

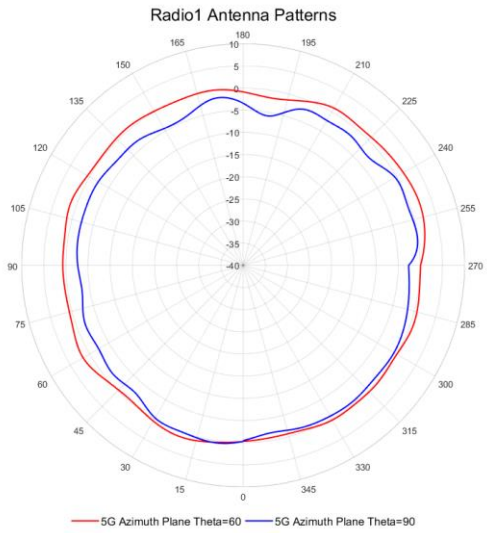




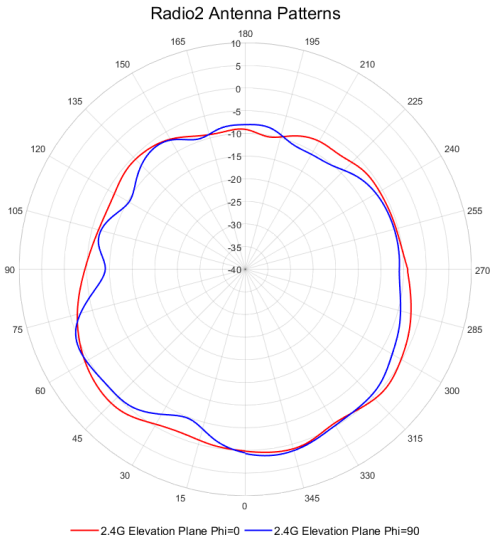
WA6628:

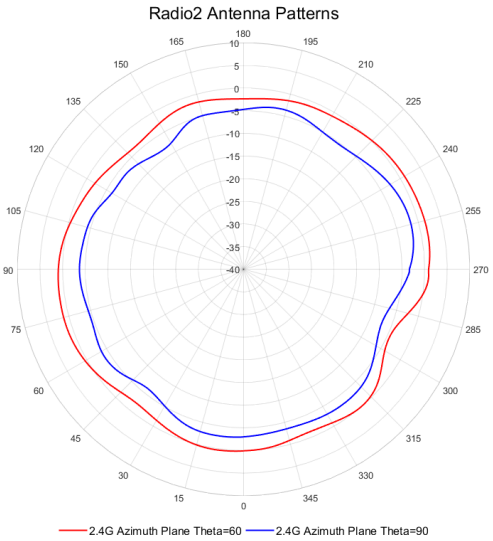
Radio1: 5GHz (AP front facing down)





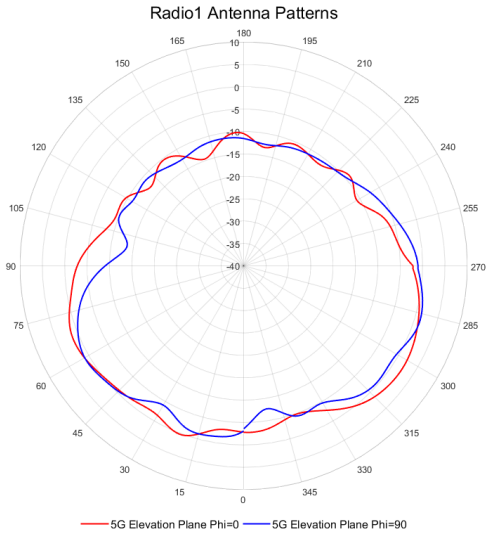
Radio2: 2.4GHz (AP front facing down)

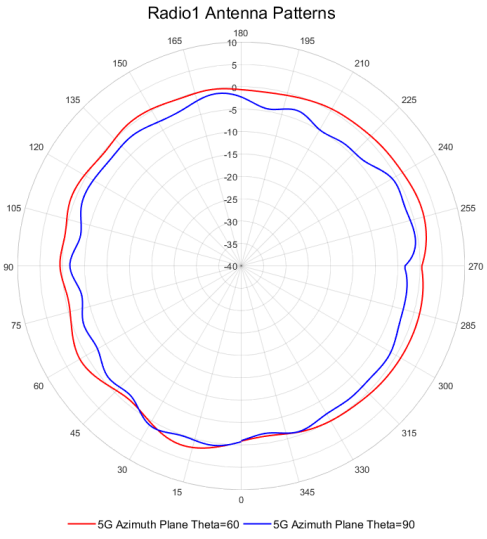




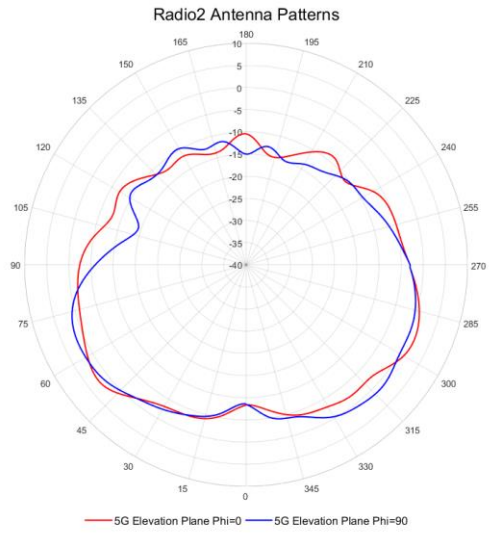
WA6638:

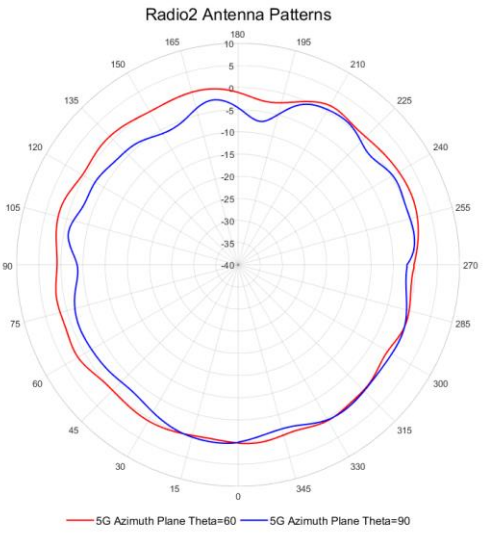
Radio1: 5GHz (AP front facing down)



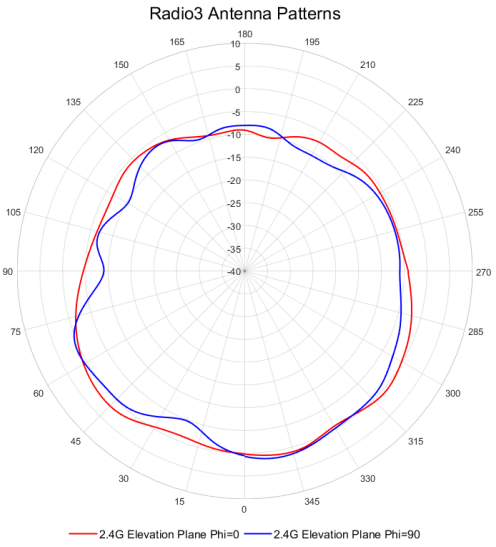


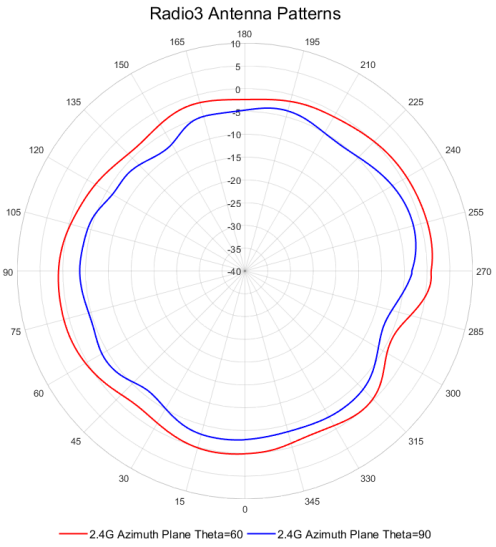
Radio2: 5GHz (AP front facing down)





Radio3: 2.4GHz (AP front facing down)





Ordering information

Product ID	Description
EWP-WA6622-FIT	H3C WA6622 Internal Antennas 6 Streams Dual Radio 802.11ax/ac/n Access Point,FIT
EWP-WA6628-FIT	H3C WA6628 Internal Antennas 12 Streams Dual Radio 802.11ax/ac/n Access Point,FIT
EWP-WA6638-FIT	H3C WA6638 Internal Antennas 12 Streams Triple Radio 802.11ax/ac/n Access Point,FIT
ADP040-54V-GL	H3C 54V 40W High Power Adapter Power Supply (optional)

ADP040-54V-PoE-GL	H3C 54V 40W High Power Adapter Power Supply (including PoE Injector, optional)