H3C WA6520-SI Series Access Point

Dual-Radio Indoor Wi-Fi 6 Access Point

Product overview

H3C WA6520-SI is a Wi-Fi 6 product that complies with the 802.11ax standard. Whether for on-premises, cloud, or hybrid deployment models, they can all seamlessly integrate into the existing network infrastructure.

The access point has dual-radio 4 streams and with built-in antenna, including 2x2 5GHz, and 2x2 2.4GHz, achieving speeds up to 2.975Gbps.

This access point supports both wall-mounted and ceiling-mounted installation and is designed for enterprise offices, retail stores, hotels, and smart enterprise campuses that require a high-quality network experience.

Views

	
WA6520-SI	WA6520-SI

Features and highlights

Wi-Fi 6 AP with Powerful Capabilities

H3C Wi-Fi 6 series APs support three flexible AP modes (CloudAP, FitAP), which can operate independently or work in collaboration with wireless controllers. They can be freely switched according to actual deployment needs, adapting to different network architectures. Meanwhile, they are paired with H3C's Cloudnet cloud-based deployment platform and AD-Campus on-premises deployment platform—both platforms are equipped with capabilities for intelligent automated management, AI-driven insights, and unified infrastructure management and control. Leveraging these two flexible deployment options, users can easily enable full-lifecycle management of Wi-Fi 6 APs, maximizing the efficiency of intelligent O&M (Operations and Maintenance). This thus ultimately meets the diverse application scenario needs of various enterprises.

Flexible networking

H3C Cloudnet Cloud-Based Deployment and Management

H3C Wi-Fi 6 series APs can work in cloud AP mode, and can also collaborate with wireless controllers (ACs). If combined with the H3C Cloudnet cloud platform, enterprises can achieve unified monitoring and management of wired and wireless networks, and obtain an integrated operation and maintenance experience.

The Cloudnet platform is equipped with an intuitive interactive Web interface and advanced, scalable management tools. It adopts a fully distributed architecture, enabling comprehensive management of network, terminal, user, and service activation functions.

H3C AD-Campus On-Premises Deployment and Management

H3C Wi-Fi 6 series APs can work in cloud AP mode, and can also collaborate with wireless controllers (ACs). If combined with the H3C AD-Campus platform, enterprises can achieve unified monitoring and management of wired and wireless networks, and obtain an integrated operation and maintenance experience.

The AD-Campus platform is equipped with an intuitive, user-friendly web interface, supports network control, and provides a unified view of the network topology while enabling policy-based network management.

Diverse Multi-Device Collaboration Modes for APs

H3C Wi-Fi 6 series APs support operation in FitAP mode and work in collaboration with wireless controllers, switches, routers and security products with embedded wireless controllers. This enables them to adapt to scenarios of different scales, simplify O&M (Operations and Maintenance) to reduce costs, enhance network performance and security, support flexible business expansion, and ultimately achieve on-demand deployment while protecting customers' early-stage investments.

Wi-Fi 6 (802.11ax) standards

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.

DL/UL MU-MIMO

DL/UL MU-MIMO technology allows AP to send data to multiple stations simultaneously, breaking through the traditional wireless serial communication mechanism, increasing the utilization rate of wireless spectrum resources, and improving the number of effective access users and access experience under high-density deployment.

BSS coloring

Spatial reuse allows the access points and their clients to differentiate between BSSs, assigns a different color per BSS to help access point identify co-channel interference and stop transmission in time. 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.

Security policy

Wireless security guarantee

The APs support WPA2-Personal, WPA2-Enterprise, WPA3-Personal, WPA3-Enterprise authentication and encryption modes to ensure security of the wireless network.

Rogue device monitoring

APs support WIPS, and can monitor, identify, defend, counter, and perform refined management on the rogue devices, to provide security guarantees for air interface environment and wireless data transmission.

Link protection

The CAPWAP link protection and DTLS encryption provide security assurance, improving data transmission security between the AP and the AC.

Network optimization

Doctor AP

Doctor AP mode, combining H3C AC and H3C intelligent O&M platform, collects wireless network information for scenarios where terminal access is abnormal, and analyzes and locates wireless faults quickly and accurately.

RRM

Radio Resource Management (RRM), the AP monitors air interface channel utilization, channel interference, and signal conflict in real time, and works with H3C intelligent O&M platform to adjust RF parameters such as working channel, bandwidth, and power in a timely manner to maintain the optimal RF resource status.

RROP

Radio Resource Optimization Policy (RROP) refers to the collection of multiple wireless air interface optimization methods, which is committed to reducing or controlling the consumption of air interface media resources by management packets, broadcast packets, and invalid packets. Set aside more resources to provide users with better wireless application services.

SACP

The Station Access Control Policy (SACP) restricts, controls, and guides the access of wireless terminals to better AP or wireless services. In addition, terminal traffic is controlled and scheduled according to network applications to improve the overall performance of the wireless network and improve the experience and effect of wireless access applications.

Roaming protection

Wireless AP fully supports the Fast BSS Transition function defined in the 802.11r standard, which can accelerate the roaming process of wireless users, reduce the probability of connection interruption, and improve the roaming service quality. Through 802.11k protocol mechanism, AP and wireless client interact with each other to perceive the network topology in multiple dimensions. The AC recognizes and calculates the roaming time and roaming access location of the wireless client in full view, and negotiates the switch with the client through 802.11v and 802.11r mechanisms.

Application guarantee

Application identification

Coupled with H3C WLAN ACs, the APs can identify a large number of common applications in various office scenarios. Based on the identification results, policy control can be implemented on user services, including priority adjustment, scheduling, blocking, and rate limiting to ensure efficient bandwidth resource and improve quality of key services.

Secure infrastructure

Trusted systems built on H3C Secure Boot provide a strong security foundation for H3C products.All device software compilations utilize RSA asymmetric encryption to ensure the integrity and authenticity of firmware and boot programs. The basic boot code in tamper-resistant partitions establishes a Root of Trust, and forms a Chain of Trust by verifying subsequent stages to enable secure system boot and validate software trustworthiness, thus effectively defending against man-in-the-middle attacks targeting software and firmware.

Power saving

The access point employs a green design that supports Dynamic and Static SM Power Saving (SMPS), Enhanced

Automatic Power Save Delivery (E-APSD). It can dynamically adjust the MIMO working mode and efficiently put terminals to sleep.The access point supports green AP mode that enables single radio standby and allows for more precise power control.

Technical specifications

Hardware specifications

Item	Specification
Weight	670g
Dimensions (W × D × H)	190mm X 190mm X 40mm (without mounting brackets)
Interface	1 x 100/1000M Ethernet, RJ-45, PoE input
Console port	1 x Management console port (RJ-45)
PoE input	1 x 100/1000M Ethernet, 802.3af
Local power supply	54V DC (Phoenix Connector) power adapter (sold separately)
Antenna type	Built-in omni-directional antenna
Antenna Gain	5GHz peak gain: 4dBi 2.4GHz peak gain: 3dBi
Built-in IoT module	BLE5.1
Frequency bands	2.400 to 2.4835GHz ISM 5.150 to 5.250GHz U-NII-1 5.250 to 5.350GHz U-NII-2A 5.470 to 5.725GHz U-NII-2C 5.725 to 5.850GHz U-NII-3/ISM Note: The available bands and channels are dependent on the configured regulatory domain (country)
Modulation technology	802.11b: Direct-sequence spread spectrum (DSSS) 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM) 802.11ax: Orthogonal frequency-division multiple access (OFDMA)
Modulation mode	11b: BPSK, QPSK, CCK 11a/g/n: BPSK, QPSK, 16QAM, 64QAM 11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM 11ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
Data rates (Mbps)	802.11b: 1, 2, 5.5, 11 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 802.11n: 6.5 to 600 (NSS = 1 to 4, HT20 to HT40) 802.11ac: 6.5 to 6,933 (MCS0 to MCS9, NSS = 1 to 8, VHT20 to VHT160) 802.11ax: 7.3 to 9,608 (MCS0 to MCS11, NSS = 1 to 8, HE20 to HE160)

Item	Specification
Maximum transmit power	5GHz: 23 dBm 2.4GHz: 23 dBm Note: 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	Configurable in increments of 1dBm
Reset button	Restoration to factory default, AP mode control(CloudAP/FitAP)
Kensington	Kensington security slot
Installation	Wall mounting/ceiling mounting, the mounting bracket has been preinstalled on the back of the AP
Indicators (LED)	Yellow/green/blue status LEDs for different working states indicate boot loader status, association status, operating status, and fault states of the system
Temperature	Operating temperature: +0°C to +45°C Storage temperature: –40°C to +70°C
Humidity	Operating humidity: 5% to 95% (non-condensing) Storage humidity: 5% to 95% (non-condensing)
Protection class	IP41
Surge protection	Common Mode：4KV
Overall power consumption	13.5W
Safety standards	IEC/EN 62368-1 GB 4943.1 SRRC
EMC standards	EN 301 489-1 EN 301 489-3 EN 301 489-17 EN 60601-1-2 EN 55032 EN 55035
	CISPR 32 CISPR 35 AS/NZS CISPR32 ICES-003 Issue 7 GB/T 9254.1 GB/T 9254.2 GB 17625.1 GB 17625.2

Item	Specification
	IEC/EN 61000-4-2 IEC/EN 61000-4-3 IEC/EN 61000-4-4 IEC/EN 61000-4-5 IEC/EN 61000-4-6 IEC/EN 61000-4-8 IEC/EN 61000-4-11 IEC/EN 61000-3-2 IEC/EN 61000-3-3
Radio standards	ETSI EN 300 328 ETSI EN 301 893 ETSI EN 300 440 FCC Part 15E
RoHS standards	EN IEC 63000:2018
Health standards	EN 50385:2017 EN IEC 62311:2020
MTBF (25°C)	864581 hours

Software specifications

Item		Specification
Product capabilities	Basic information	Indoor, dual-radio AP, 802.11a/b/g/n/ac/ac Wave 2/ax
	AP Operating Mode	Fit AP Mode, managed by Wireless LAN Controller Cloud AP Mode, managed by H3C intelligent O&M platform Note: AP Operating Modes can be switched via CLI, Wireless LAN Controller, H3C intelligent O&M platform, Reset button
	Supported Wireless LAN Controllers	H3C WX2800X, WX3800X, WX5800X Series Wireless LAN Controllers
	Frequency and MIMO	Dual-radio mode 5GHz, 2×2:2, 2.4Gbps 2.4GHz, 2×2:2, 0.575Gbps
	Compliance and bandwidth	5GHz, 802.11a/n/ac/ax 20MHz/40MHz/80MHz/160MHz 2.4GHz, 802.11b/g/n/ax 20MHz/40MHz
	Maximum transmission speed	2.975Gbps (2x2 160MHz on 5GHz, and 2x2 40MHz on 2.4GHz)

Item		Specification
	Maximum number of clients	256 (128 on 5 GHz, 128 on 2.4 GHz) Note: the actual number of users varies according to the environment
	Maximum number of BSSIDs for each radio	8
802.11ax	MU-MIMO	Uplink / Downlink Multi-user multiple-input multiple-output (MU-MIMO)
	OFDMA	Uplink / Downlink Orthogonal frequency division multiple access (OFDMA)
	TWT	Target Wake Time, allowing clients to sleep for a predetermined period of time and be awakened only when network communication is needed, effectively reducing the power consumption
	BSS coloring/SR	Spatial reuse, dividing different BSSs into different colors to avoid co-frequency interference and improve the user experience of wireless networks
WLAN basics	A-MPDU	Aggregated MAC Protocol Data Unit, Improves the data transmission efficiency of wireless networks by optimizing the composition of TX/RX directional data packets
	A-MSDU	Aggregated MAC Service Data Unit, Improves the data transmission efficiency of wireless networks by optimizing the composition of TX/RX directional data packets
	LDPC	Low-density Parity-Check, Improves the communication efficiency of wireless networks through error correction coding technology
	LACP	Link Aggregation Control Protocol, achieving bandwidth aggregation, redundancy backup, and load balancing, the APs require at least 2 ports
	STBC	Space-Time Block Coding, Improve the Channel capacity of wireless networks through multi-antenna coding technology
	DFS	Dynamic Frequency Selection, automatically identify DFS frequency bands, automatically adjust frequencies of the devices, and avoid interference with other devices
	TxBF	Transmit Beamforming, Improve the signal-to-noise ratio of wireless network signal transmission by adjusting the beam direction of antenna transmitting signals
	CCF	Cellular coexistence feature, use built-in software filtering to minimize the impact of interference from 3G/4G cellular networks
	MRC	Maximum-ratio combining, improve signal reception quality
	CDD/CSD	Cyclic Delay Diversity/Cyclic Shift Diversity, improve signal reception quality
Tunnel management	CAPWAP tunnel	Unicast/broadcast/DNS/DHCP/static IP method for discovering AC
	NAT	NAT between AC and AP
	DTLS	Tunnel between AC and AP support DTLS encryption
	IPv4/IPv6	Tunnel between AC and AP support IPv4 and IPv6
	Time synchronization	Synchronizing clock information from AC
	Dual tunnel	Establishing CAPWAP tunnels with two ACs
	PPPOE	PPPOE Client
	IPsec	Cloud AP mode Support IPsec
WLAN extension	RF adjustment	Automatic channel/power/bandwidth adjustment

Item		Specification
	SSID hiding	Restrict access and improve wireless network security by SSID hiding
	Limit the number of connected users	User access count restriction based on SSID and RF
	Forwarding mode	Centralized forwarding/local forwarding/policy forwarding
	Local forwarding	Local forwarding based on SSID and VLAN
	VLAN binding	Binding VLAN based on interface/SSID/MAC
	User isolation	VLAN-based user isolation SSID-based user isolation
	Load balancing	Traffic-based load balancing User-based load balancing Frequency band-based load balancing, dual-5G devices only
	Band steering	Improve service quality by prioritizing access to 5G frequency bands for wireless clients
	Roaming	802.11k and 802.11v smart roaming 802.11r fast transition roaming
	Multicast enhancement	Convert multicast data into unicast data for transmission, reducing network congestion
	Wireless location	Fit AP mode support BLE location Fit AP mode support RSSI location
	Mesh	Mesh link Mesh link security Multi-hop Mesh
	Wireless probing	Monitor the wireless network environment by monitoring wireless network messages
	Hotspot 2.0	Fit AP mode support Hotspot 2.0
User authentication	802.1X authentication	Local and remote 802.1X authentication
	MAC authentication	Local and remote MAC authentication
	Portal authentication	Local and remote Portal authentication Guest/Captive portal Portal mac-trigger
	PSK	PSK and Private-PSK
	PPSK	Fit AP mode support Private Pre-Shared Key, obtain passwords to access wireless networks through H3C intelligent O&M platform
	Social Media APPs Authentication	Cloud AP mode support Google/Facebook/Twitter through H3C intelligent O&M platform
	Extensible Authentication Protocol (EAP)	EAP-Transport Layer Security (TLS) EAP-Tunneled TLS (TTLS) Microsoft Challenge Handshake Authentication Protocol (MSCHAP) v2 Protected EAP (PEAP) v0 or EAP-MSCHAP v2 EAP-Flexible Authentication via Secure Tunneling (EAP-FAST)

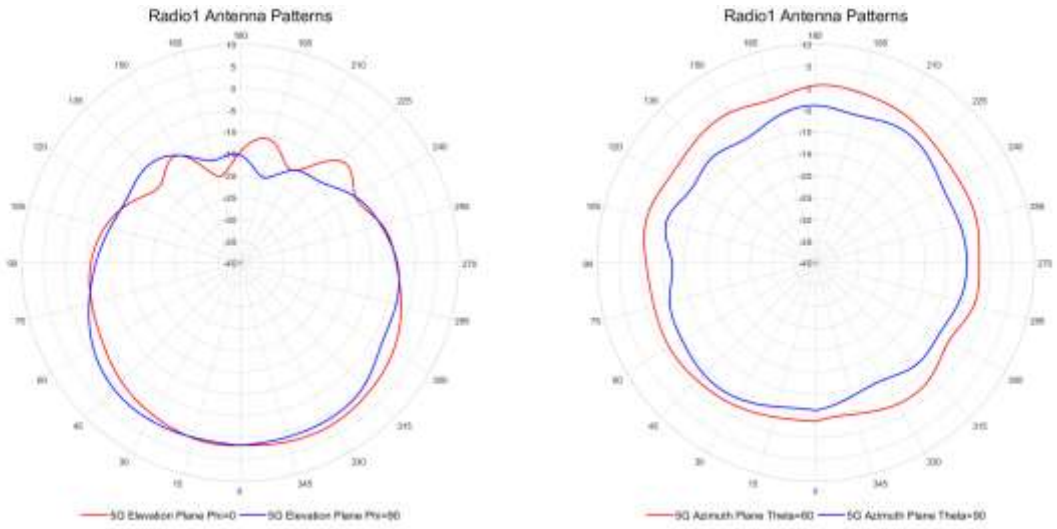
Item		Specification
		PEAP v1 or EAP-Generic Token Card (GTC) EAP-Subscriber Identity Module (SIM)
Wireless security	Encryption	TKIP, CCMP WPA2-Personal (802.11i) WPA2-Enterprise with 802.1X WPA3-Personal, WPA3-Enterprise WPA3-Enhanced Open (OWE) Advanced Encryption Standard (AES)
	Forwarding security	Packet filtering MAC address filtering Broadcast storm suppression
	Wireless EAD	Coupled with EAD (End user Admission Domination) solution, implement security policies for terminals accessing the network to improve wireless network security
	Management frame protection	Provide management frame protection for wireless clients to enhance wireless network security
	WIPS	Wireless Intrusion Prevention System, protect the network from unauthorized access, such as Rogue AP, Rogue client, Rogue Wireless Bridge, Ad-hoc
	IPSG	IP source guard (IPSG) prevents spoofing attacks by using an IPSG binding table to filter out illegitimate packets
Layer 2 and Layer 3	IP address configuration	Static IP/DHCP assigned IP
	DHCP	Server/client/relay
	NAT	NAT/NAT66/ NAT LOG
	LLDP	Link Layer Discovery Protocol, discovering and identifying other LLDP enabled devices and neighboring devices in the network
	IPv4	ICMP/ACL/DHCP/TFTP/FTP/DNS
	IPv6	ICMP/ACL/DHCP/TFTP/FTP/DNS
Service assurance	Remote AP	After the tunnel between AC and AP is disconnected, AP continues to provide services to clients
	Doctor AP	Fit AP mode support Doctor AP, simulates wireless client access process, diagnoses network issues, and improves network experience
	Spectrum Analysis	Displaying the non-Wi-Fi interference sources through H3C intelligent O&M platform
	Only 802.11ax accessing	Only wireless clients that support 802.11ax can access the network, improving the network experience
	Intelligent bandwidth guarantee	Ensure that different wireless services can obtain the lowest guaranteed bandwidth during network congestion
	Port Aggregation	Multiple uplink ports for port aggregation to increase uplink bandwidth (only applicable to multiple uplink port APs)
	Broadcast suppression	Discard ARP request and response packets from wireless clients during the suppression cycle

Item		Specification
	Prohibit weak signal client access	AP prohibits wireless clients with signals below the threshold from accessing, to avoid low-signal clients occupying more channel resources
	Terminal roaming navigation	Adjust the AP transmission power to create more roaming conditions and improve the roaming experience
	Actively triggering client relinking	AP actively sends messages to allow wireless clients to reconnect or roam actively
	Adjust channel reuse between APs	RF chip adjusts the environmental noise perceived by the device to improve AP transmission efficiency
	Fast forwarding function for client data services	Intelligent optimization of RF chip business processing can improve performance
	Shorten client sleep time	RF chips shorten client sleep time and improve transmission efficiency through beacons
	Software version anomaly repairing	After the software version is damaged due to abnormal circumstances, AP can automatically download the available software version through AC or cloud platform
Service quality	WMM	Wi-Fi Multimedia, Improve the service quality of audio and video transmission in wireless networks through EDCA scheduling algorithm
	QoS	Priority Class, By marking TOS/DSCP fields to distinguish data streams with different priorities, high priority data streams can be quickly distributed, thereby improving service quality
		Priority Class, supports mapping from wireless priority to wired priority
		QoS policy mapping, support QoS policy mapping based on SSID and VLAN
		Layer 2 to Layer 4 packet filtering and traffic classification
		CAR (Committed Access Rate), by limiting data transmission rate, avoid network congestion caused by traffic congestion
	User bandwidth management	Allocate available bandwidth per STA
		Allocate total bandwidth for all STA shares based on SSID
		Dynamically adjust the available bandwidth of STA based on business
	ATF	Air Time Fairness, by allocating an equal amount of RF usage time, reducing wireless channel congestion and improving the efficiency and fairness of wireless networks
	CAC	Call Admission Control, improve the quality of service for wireless clients that have already received high priority by limiting the number of wireless clients that have received high priority
		Supports number of users/Channel utilization based
Power saving	Green AP mode	Dynamically adjust MIMO configuration based on wireless client access status to reduce device power consumption
	U-APSD	Unscheduled Automatic Power Save Delivery, reduce device power consumption by scheduling VoIP data streams separately from non-VoIP data streams
	SM Power Save	Spatial Multiplexing Power Save, reduce device power consumption through low-power standby mode
Management and maintenance	GUI	Cloud AP mode support WEB management via HTTP/HTTPS
	SNMP	In Fit AP Mode, the Wireless LAN Controller can support SNMP V1/V2c/V3
	MIB	RFC 1213 MIB-II Stands for Management Information Base

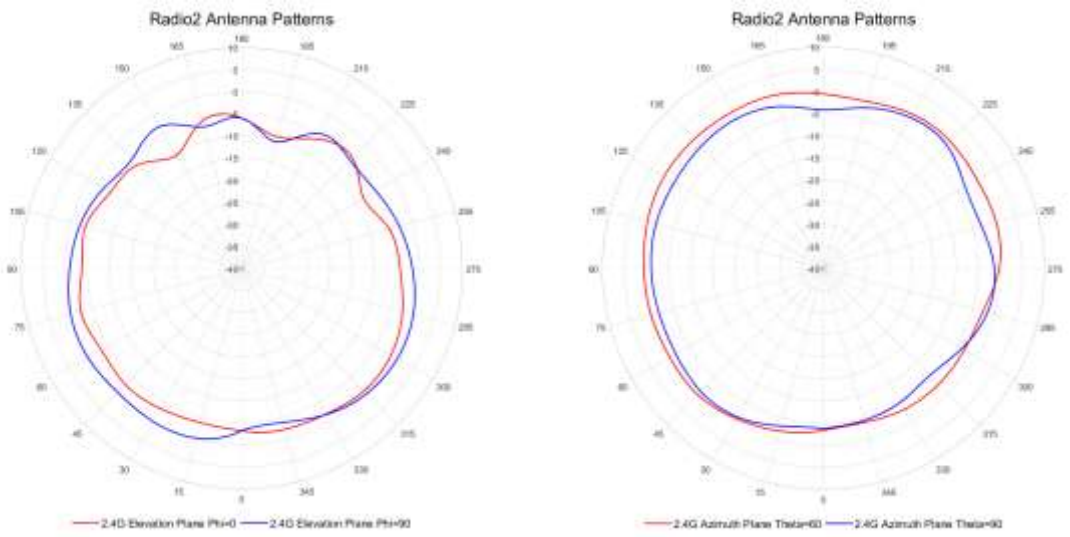
Item		Specification
		RFC 3418 Management Information Base (MIB) for the Simple Network Management Protocol (SNMP)
	Remote debugging	SSH V2.0/Telnet/FTP/TFTP
	Local debugging	Support CLI
	Information maintenance	Cloud AP mode support Syslog
	Secure boot	Supporting firmware protection, ensuring the integrity of the subsequent running program codes through the trusted Boot-Loader, forming a trusted device boot chain
	Netconf	Cloud AP mode Support Netconf provides programmable and scalable methods to manage network devices
IEEE standards	802.11	IEEE 802.11a/b/g/n/ac/ac Wave 2/ax
		IEEE 802.11d/e/h/i/w/u
		IEEE 802.11k/v/r
	802.3	802.3af
	802.15	802.15.1
Wi-Fi certified	Wi-Fi Alliance: Wi-Fi 6, WMM, WPA, WPA2 and WPA3 – Enterprise, Personal (SAE), Enhanced Open (OWE)	

- The options may be different depending on the specific requirement. Restrictions and limitations may apply. To confirm availability, refer to related user guide or visit H3C website https://www.h3c.com/en/home/htb/.

Antenna patterns



Radio1: 5GHz (AP front facing down)



Radio2: 2.4GHz (AP front facing down)

Ordering information

Product code	Description
9801A7MW	H3C WA6520-SI Internal Antennas 4 Streams Dual Radio 802.11ax/ac/n Indoor Access Point(1*GE),FIT
9802A02Y	RDW06305401170-C55-51 H3C 54V 63W High Power Adapter Power Supply

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