H3C WA6520-EG New Generation Access Point

802.11ax Indoor Series Access Point

New H3C Technologies Co., Limited

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Overview

H3C WA6520-EG is a new generation Wi-Fi 6 product that complies with the 802.11ax standard.

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.

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Features and Benefits

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.

Innovative AI-Native Capabilities

The access point can realize AI-based radio frequency (RF) management, the connection of the terminal to the network, service assurance, and healing of the network through the convergence of cloud, networking and edge and H3C’ s iRadio, iStation, iHeal, and iEdge technologies.

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.

Analysis on Non-Wi-Fi Interference Sources

APs can analyze the spectrum of non-Wi-Fi interference sources and identify them, including Bluetooth devices, wireless audio transmitters, and microwave ovens. Coupled with H3C AD-Campus, the locations of the interference sources can be detected, and the spectrum of them displayed, enabling the administrator to remove the interference in a timely manner.

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.

Real Time Spectrum Guard (RTSG)

Real-Time Spectrum Guard (RTSG) is the innovative H3C professional state-monitoring solution for the wireless spectrum. APs support the internal RF data acquisition module to achieve deeply integrated monitoring and real time spectrum protection.

Network optimization

Doctor AP

Doctor AP mode, combining H3C AC and H3C Cloudnet 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 Cloudnet 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.

Cellular Coexistence Feature (CCF)

The access point uses built-in software filtering to minimize the impact of interference from 3G/4G cellular networks.

Application Guarantee

Application identification

APs support smart application control technology and can implement visualized control on Layer 4 to Layer 7 applications. 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.

Flexible Networking

AC-based Management

The access point supports Fit AP mode and can be managed by the Wireless Service Manager (WSM) component of the H3C Intelligent Management Center (IMC). 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.

Cloud-based Management

This access point supports cloud AP mode, which can be managed through the cloud without deploying wireless controllers and authentication servers. It supports multiple authentication methods such as PPSK, Portal, 802.1X, SMS, and social media. At the same time, the cloud management platform can monitor the device status and terminal connection status, comprehensively evaluate and optimize the business operation status of the entire wireless network, and achieves the optimal wireless network Total Cost of Ownership (TCO).

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.

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

Technical specifications

Hardware specifications

Name	WA6520-EG
Weight	0.5Kg
Dimensions (W × D × H)	180mm X 180mm X 32mm
Interface	1 x 100/1000M Multigigabit Ethernet, RJ-45, PoE input 1 x 1G/2.5G Multigigabit optical port
Console port	1 × Management console port (RJ-45)
PoE input	1 x 100/1000M Multigigabit Ethernet, 802.3af
Local power supply	54V DC
Antenna Type	Built-in omni-directional antenna
Antenna Gain	5GHz peak gain: 5dBi 2.4GHz peak gain: 4dBi *Note: The equivalent antenna gain is 4dBi in 5GHz and 3dBi in 2.4GHz*
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
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
Modulation mode	11b: DSSS: 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	5GHz: 23dBm

power	2.4GHz: 20dBm		
Adjustable power granularity	1 dBm		
Reset/restoration to factory default	support		
Kensington Lock	support		
Installation	wall mounting/ceiling mounting		
LED	Alternating flashing mode, orange/green/blue for different working states		
Temperature	Operating temperature: 0°C to +50°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		
Overall power consumption	12.95W		
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	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	DIRECTIVE 2011/65/EU (EU) 2015/863
Health Standards	EN 50385:2017 EN IEC 62311:2020
MTBF	> 864581 hours

Software specifications

Name		WA6520-EG
Product positioning	Basic information	Indoor, dual radio AP, 802.11a/b/g/n/ac/ac Wave 2/ax
	Frequency and MIMO:	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)
	Maximum number of clients	256 (128 on 5GHz, and 128 on 2.4GHz) *Note: the actual number of users varies according to the environment*
	Maximum number of SSIDs for each radio	8
802.11ax	MU-MIMO	Support DL MU-MIMO/ UL MU-MIMO
	OFDMA	Support DL OFDMA/ UL 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
	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
	MRC	Maximum-ratio combining, improve signal reception quality
	CDD/CSD	Cyclic Delay Diversity/Cyclic Shift Diversity, improve signal reception quality
Tunnel management	CAPWAP tunnel	Support unicast/broadcast/DNS/DHCP/static IP method for discovering AC
	NAT	Support NAT between AC and AP
	DTLS	Tunnel between AC and AP supports DTLS encryption
	IPv4/IPv6	Tunnel between AC and AP supports IPv4 and IPv6
	Time synchronization	Support synchronizing clock information from AC
	Dual tunnel	Support establishing CAPWAP tunnels with two ACs
	PPPOE	Support PPPOE Client
	EoGRE	EoGRE (Ethernet over GRE), generic Routing Encapsulation, used to encapsulate and unpack Ethernet data packets

	IPsec	Cloud AP mode Supports IPsec
WLAN extension	RF adjustment	Support Automatic channel/power/bandwidth adjustment
	SSID hiding	Restrict access and improve wireless network security by SSID hiding
	Limit the number of connected users	Supports SSID/RF based
	Forwarding mode	Centralized forwarding/local forwarding/policy forwarding *Note: The AP supports centralized forwarding/policy forwarding only on the AC in Fit AP mode*
	Local forwarding	Local forwarding based on SSID and VLAN
	VLAN binding	Supports interface/SSID/MAC binding VLAN based
	User isolation	VLAN-based user isolation SSID-based user isolation
	Load balancing	Supports traffic-based load balancing
		Supports user-based load balancing
		Supports 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	Support 802.11k and 802.11v smart roaming
		Support 802.11r fast transition roaming
	Multicast enhancement	Supports IPv4/IPv6 MLD Snooping/IGMP Snooping
		Convert multicast data into unicast data for transmission, reducing network congestion
	Wireless locating	The AP supports BLE locating only on the AC in Fit AP mode
		The AP supports RSSI locating only on the AC in Fit AP mode
	IOT	Support Built-in BLE

	Wireless probing	Monitor the wireless network environment by monitoring wireless network messages
	Hotspot 2.0	The AP supports Hotspot 2.0 only on the AC in Fit AP mode
	Bonjour gateway	Forwarding mDNS packets across VLANs
User Authentication	802.1X authentication	Support local 802.1X authentication
		Support remote 802.1X authentication
	MAC authentication	Support local MAC authentication
		Support remote MAC authentication
	Portal authentication	Support local Portal authentication
		Support remote Portal authentication
		Support Guest/Captive portal
		Support portal mac-trigger
		Support portal escape
	PSK	Support PSK and Private-PSK
	PPSK	Private Pre-Shared Key, obtain passwords to access wireless networks through the Cloudnet platform
	Social Media APPs Authentication	Cloud AP mode Support Google/Facebook/Twitter
	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)
		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	With the EAD (End user Admission Domination) solution, it implements security policies on user terminals accessing the network to improve wireless network security 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
	802.1X Client	Provide Ethernet port access protection for AP 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/NPAT/NAT ALG/NAT LOG
	LLDP	Link Layer Discovery Protocol, discovering and identifying other LLDP enabled devices and neighboring devices in the network
	STP	Spanning Tree Protocol, preventing loops in the

		network
	IPv4	Supports ICMP/ACL/DHCP/TFTP/FTP/DNS policy
	IPv6	Supports ICMP/ACL/DHCP/TFTP/FTP/DNS policy
Service Assurance	Remote AP	After the tunnel between AC and AP is disconnected, AP continues to provide services to clients
	Doctor AP	The AP supports Doctor AP only on the AC in Fit AP mode, simulates wireless client access process, diagnoses network issues, and improves network experience
	Spectrum Analysis	WSA (Wireless Spectrum Analysis), detects interference promptly through real-time analysis of the network spectrum environment
	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
	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

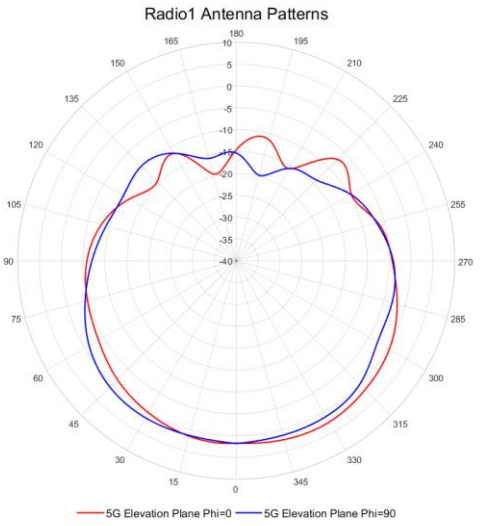
	Fast forwarding function for client data services	Intelligent optimization of RF chip business processing can improve performance
	Shorten client sleep time	RF chips shorten client sleep time and improve transmission efficiency through beacons
	Software version anomaly repairing	After the software version 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
		Call Admission Control, improve the quality of service

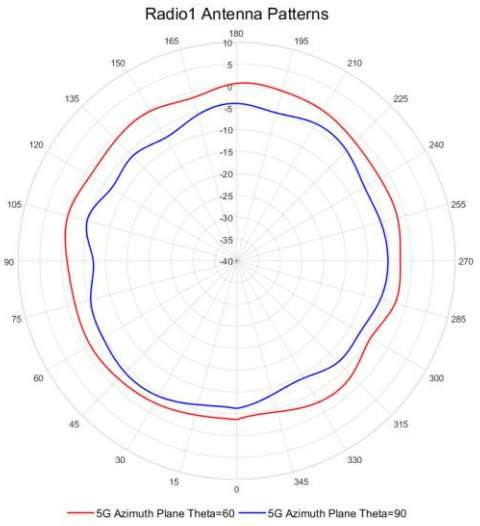
	CAC	for wireless clients that have already received high priority by limiting the number of wireless clients that have received high priority
		Supports number of users/Channel utilization based
	Application Identification	Supports layer L2-L7 application identification
Power saving	PPC	Per-Packet Control, reduce device power consumption by adjusting the sending interval of data packets
	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	Centralized management	Fit AP mode, managed by AC Cloud AP mode, managed by the Cloudnet platform
	GUI	Cloud AP mode Support WEB management via HTTP/HTTPS
	SNMP	The AP supports SNMP V1/V2c/V3 only on the AC in Fit AP mode
	Remote debugging	Support SSH V2.0/Telnet/FTP/TFTP
	Local debugging	Support CLI
	Information maintenance	Cloud AP mode Support Syslog
	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/at/bt
	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)	

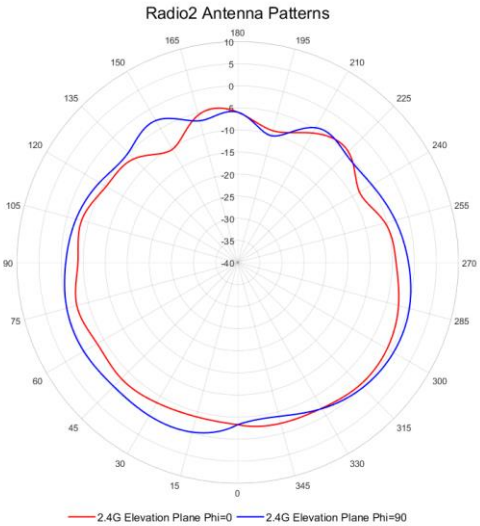
Antenna Patterns

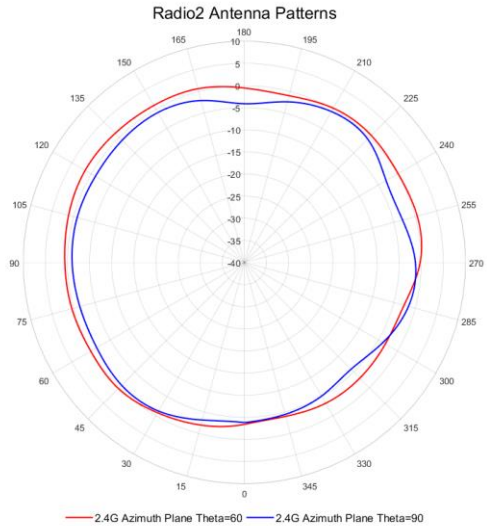
Radio1: 5GHz (AP front facing down)





Radio2: 2.4GHz (AP front facing down)





Ordering information

Product ID	Description
EWP-WA6520-EG-FIT	H3C WA6520-EG Internal Antennas 4 Streams Dual Radio 802.11ax/ac wave2/ac/n Access Point, FIT （mounting brackets included）
ADP040-54B	H3C 54V 40W Power Adapter with Phoenix Connector (selected on demand)
ADP040-54V-PoE-GL	H3C 54V 40W High Power Adapter Power Supply (including PoE Injector, selected on demand)

The Leader in Digital Solutions

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