H3C WA6520 Series Indoor Wi-Fi 6 (802.11ax) Wireless Access Devices

Product Overview

The H3C WA6520 series wireless products are Wi-Fi 6 (802.11ax) AP products independently developed by H3C Technologies Co., Ltd. (H3C), and can be widely used in scenarios such as enterprises, schools, and medical care.

ÿ The whole machine adopts dual-band four-stream design, with a maximum access rate of 2.975Gbps. 5GHz radio 2 spatial streams, maximum negotiation rate 2.4Gbps, 2.4GHz radio 2 spatial streams, maximum negotiation rate 0.575Gbps. WA6520 H20 product supports PSFP interface, which can realize optical-electrical integration. With optical-electrical hybrid cable and dedicated optical module, it can be connected through optical port.

Receive power and provide power to the AP.

ÿ Flexible installation methods, supporting multiple installation methods such as panel, wall and ceiling.

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Features

Working Mode

The AP's built-in all-in-one version allows for flexible switching of operating mode versions based on demand, saving implementation costs and enabling out-of-the-box use.

Fit AP

This product supports Fit AP mode and can be managed by a wireless controller equipped with the Comware system. This networking mode enables localized management of batch APs.

Cloud AP

This product supports the cloud-simple solution, which allows wireless networking without hardware AC and authentication server, and implements rich authentication functions such as PPSK, PSK, Portal, SMS, WeChat, etc.

At the same time, customized development is carried out for multi-branch scenarios such as chain hotels and supermarkets, realizing simplified branch office start-up, hierarchical and decentralized management, intelligent large screen at headquarters, and customized configuration modules.

Through Yunjian intelligent operation and maintenance, you can fully grasp the status of wireless devices, networks, and terminals, and provide extremely simple management and operation and maintenance, reducing customer capital investment and liberating operation and maintenance

Manage human resources input to reduce costs and increase efficiency.

Intelligent Operation and Maintenance

H3C's wireless intelligent operation and maintenance system features data visualization, measurability, and automatic optimization capabilities, reducing the difficulty of wireless operation and maintenance and saving labor costs.

Data visualization

H3C's wireless intelligent operation and maintenance system collects and displays rich operation and maintenance data through telemetry technology. For example, in terms of terminals, it records terminal roaming logs, authentication logs, signal strength, important message interaction logs, packet loss, latency, etc. It can identify 150+ reasons for terminal online failure, 140+ reasons for terminal offline, and 100+ reasons for authentication failure. For example, in terms of AP, Collect AP association failure reasons, reasons for leaving AC, traffic composition of each wired port, error packet information, radio traffic composition, radio channel utilization, radio The interference intensity, WIPS wireless attack and other data.

Measurable

H3C's wireless intelligent operation and maintenance system has established a comprehensive terminal experience, equipment health, and network health evaluation system to measure the terminal experience, equipment, and network operation status. It is convenient for managers to view and maintain the network.

Automatic Optimization

The wireless network is a changing network. The air interface environment is changing, the services are changing, and the user scale is changing. This requires the network to have the ability to automatically solve problems and optimize the network. Huawei's wireless intelligent operation and maintenance problem recovery and gradual optimization system has the ability to proactively discover and analyze problems, and issue strategies to automatically solve problems and optimize the network. The network is always in a state of high performance, low interference and optimal user experience, and the entire process requires no human intervention.

Wired and wireless security protection

Terminal access and admission security

Cooperating with H3C's independently developed wireless controller, wireless switch and authentication system, it can support 802.1x authentication, PSK authentication, MAC, PPPOE, Portal, WeChat, SMS, etc. Authentication and encryption methods such as letters are used to protect the security of wireless networks.

Supports Wireless Intrusion Prevention System (WIPS)

Supports WIPS. When used with wireless controllers/wireless switches, it can simultaneously support WIPS features such as rogue detection, intrusion detection, and blacklist and whitelist features. It can intelligently identify device terminals, including device type and model information.

Wired Security

Support AP wired access control, AP wired port can be used as 1X Client authentication to access the wired network, thereby ensuring the legitimacy of access AP; at the same time, it can be authenticated through CAPWAP Encryption methods such as tunnel encryption and DTLS provide security for wireless tunnels.

Cooperating with H3C's security situation awareness, security linkage can be achieved. When the wired side detects a security problem with the wireless terminal, the linkage mechanism will be triggered to notify the wireless controller to block the terminal from accessing the wireless terminal. Line access to ensure network security.

Air interface optimization and terminal access strategy

Supports Radio Resource Optimization Policy (RROP). RROP is a collection of multiple wireless air interface optimization methods designed to reduce or control the consumption of air interface media resources by management messages, broadcast messages, and invalid messages, leaving more resources for providing better wireless application services to users.

RROP mainly includes wireless service layer 2 isolation function, disabling low rate, adjusting Beacon sending interval, disabling broadcast probe detection function and other air interface optimization strategies.

Supports terminal access control policy (SACP). The terminal access control policy restricts, controls, and guides wireless terminal access to better APs or wireless services. It also controls and schedules terminal traffic based on network applications, improving the overall performance of the entire wireless network and the wireless access application experience.

SACP mainly includes prohibiting weak signal client access, spectrum navigation, roaming navigation, load sharing, ignoring weak signal strength messages, fair scheduling of air interface transmission, Terminal control strategies such as traffic shaping and intelligent bandwidth guarantee based on client link status.

Radio Frequency Resource Management

Radio Resource Management (RRM) monitors air interface channel utilization, channel interference, signal conflicts and other environmental issues in real time through systematic intelligent radio management, and adjusts radio parameters such as working channel, bandwidth, power, etc. in time to maintain the optimal radio resource status. It can realize automatic network deployment and network self-

Dynamic repair.

Application Assurance

H3C's unique Wi-Fi 6 eXtreme Plus technology can intelligently identify user applications on the AP and save snapshots of the identified applications.

The messages will be compared with the snapshots, and the application messages that have been identified can be processed at high speed by combining with intelligent sorting technology, overcoming the low performance of traditional DPI and the inaccurate DFI identification application.

When the AP detects that the user is using key services, the AP will optimize the roaming and radio frequency switching behaviors to ensure that the user always maintains the key services.

When it is found that the air interface occupancy rate is too high and affects the experience of audio and video services, APs prioritize the flow of key services through joint mobilization, providing key services with smooth experience.

Air interface resources are reserved to achieve bidirectional acceleration of applications.

Support roaming optimization

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 roaming efficiency.

Quality of service.

Through the 802.11k protocol mechanism, AP and wireless clients conduct interactive detection and perceive the network topology from multiple dimensions; AC fully identifies and comprehensively calculates the roaming status of wireless clients.

The AC negotiates handover with the client through 802.11v and 802.11r mechanisms, and maintains traffic flow for downlink services during the handover.

It can solve the problem of network interruption, thus achieving seamless switching and improving the user experience.

Only 11ax access

Wi-Fi 6 (802.11ax) supports 11ax-only access. Because Wi-Fi 6 (802.11ax) is backward compatible with 802.11a/b/g/n/ac protocols, 802.11a/b/g/n/ac users can generally access Wi-Fi 6 (802.11ax) wireless access devices. However, this compatibility may result in a certain degree of performance degradation for users with higher access capabilities such as Wi-Fi 6 (802.11ax). H3C devices support setting a radio on a wireless access device to 11ax-only access mode, allowing only Wi-Fi 6 (802.11ax) users to access the device, ensuring bandwidth and performance.

Support probe scanning

The product can be used as a sensor device for remote probe analysis. It has an independent scanning radio frequency and does not affect the normal access and use of the AP. It can detect all-band Wi-Fi packets in the coverage area.

Listen, capture and mirror to local analysis equipment in real time for network administrators to conduct troubleshooting and optimization analysis.

Wireless message mirroring can also poll and sample all channels, flexibly meeting the requirements of wireless network monitoring and operation and maintenance.

The product can simulate wireless terminals and cooperate with the intelligent operation and maintenance platform to analyze and troubleshoot wireless air interface faults, namely Doctor AP mode. In this mode, the AP will simulate terminal behavior and collect wireless

Network information is synchronized to the intelligent operation and maintenance platform for accurate diagnosis. Combined with the Cloudnet app and Yunjian, it enables comprehensive cloud-network-end analysis to accurately locate wireless network issues.

Support OFDMA technology

Supporting OFDMA (Orthogonal Frequency Division Multiple Access) technology, the AP can subdivide the wireless bandwidth and use different subcarriers to transmit data to multiple terminals at the same time, reducing the delay caused by multi-user air interface resource conflicts and backoff in traditional protocols, and improving the low latency of voice, video, etc. in multi-user scenarios.

The user experience of the application.

Support spatial multiplexing technology

Supports SR (Spatial Reuse) technology and BSS Coloring mechanism. By identifying message colors at the link layer and controlling terminals to adjust transmit power, this improves channel multiplexing capabilities in high-density deployments, alleviates co-channel interference problems during multi-user use, and significantly improves spectrum resource utilization.

Support TWT technology

Supports TWT (Target Wake Times) technology, allowing the AP to uniformly schedule the wake-up and sleep of terminals, which not only reduces conflicts between terminals but also reduces the number of unnecessary wake-up times of terminals, thereby achieving energy saving.

Flexible forwarding strategy

When connecting via WAN, the wireless access device is deployed in the branch office, and the wireless controller is deployed in the headquarters. The traditional forwarding mode is that the data message is forwarded by the wireless access device.

The product can convert data packets directly into wired format packets on wireless access devices, making data packets

The datagram does not pass through the wireless controller, but is forwarded locally, which greatly saves wired bandwidth. It also supports flexible policy forwarding. The terminals in the same wireless service can forward datagrams according to the forwarding policy.

The strategy realizes traffic concentration and local forwarding selection, thereby releasing the pressure on egress bandwidth and reducing network bandwidth costs.

Supports IPv4/IPv6 dual stack (Native IPv6)

Fully supports IPv6 features, the device implements IPv4/IPv6 dual protocol stack. Whether the original wired network is IPv4 or IPv6, it can be transmitted through broadcast, multicast, DHCP option43,

DNS and other methods automatically register on the wireless controller and provide WLAN services, so it will not become an information island in the network.

Provide EAD wireless access

The EAD (End user Admission Domination) solution integrates network access control from the perspective of controlling user terminals' secure access to the network.

Together with terminal security products, it can enforce enterprise security policies on user terminals connected to the network. By linking with the security policy server, it can prevent virus infection or system vulnerabilities.

Unqualified wireless clients will be processed offline, isolated, reminded or monitored in various ways. Only when the wireless client meets the corresponding security policy will it be allowed to access normally.

network, thereby improving the overall security of the wireless network.

Support Chinese SSID

It supports the use of Chinese SSIDs. You can specify an SSID with a maximum length of 16 Chinese characters. You can also use a mixed SSID of Chinese and English, providing greater convenience for domestic users.

Product Specifications

Hardware specifications

property	WA6520	WA6520 H20
Dimensions (excluding antenna connector and appendix)	180mm×180mm×32mm	
Fixed interface	2 ports (1 2.5G optical port, 1 10/100/1000M electrical port) mouth)	2 (1 2.5G PSFP, 1 10/100/1000M electrical mouth)
PoE	GE: 802.3af power supply	GE1: 802.3af power supply 2.5G optical port: 802.3af optical-electrical composite power supply
Local power supply	Support 54V DC local power supply	
Console	1	
Built-in antenna	Built-in smart antenna system	
Built-in IoT	BLE5.1 enables expanded IoT capabilities	
Operating frequency band	802.11ax/ac/n/a: 5.725GHz-5.850GHz (China); 5.47GHzÿ5.725GHz; 5.15GHz~5.35GHz (China country) 802.11ax/b/g/n: 2.4GHz-2.483GHz (China)	
Modulation technology	OFDMÿBPSK@6/9MbpsÿQPSK@12/18MbpsÿQAM@24MbpsÿQAM@48/54Mbps DSSSÿ DBPSK@1MbpsÿDQPSK@2MbpsÿCCK@5.5/11Mbps MIMO-OFDM(11n)ÿMCS 0-15 MIMO-OFDM(11ac)ÿ MCS 0-9 MIMO-OFDM(11ax)ÿ MCS 0-11	
Modulation method	11bÿDSS:CCK@5.5/11Mbps,DQPSK@2Mbps,DBPSK@1Mbps 11a/gÿOFDM:64QAM@48/54Mbps,16QAM@24Mbps,QPSK@12/18Mbps,BPSK@6/9Mbps 11nÿMIMO-OFDM:BPSK,QPSK,16QAM,64QAM 11ac/ac wave2ÿMIMO-OFDM:BPSK,QPSK,16QAM,64QAM,256QAM 11axÿMIMO-OFDM: BPSK,QPSK,16QAM,64QAM,256QAM,1024QAM	
Transmit power (combined)	23dBm (Actual transmit power may vary depending on the regulatory requirements of each country)	
Adjustable power granularity	1dBm	
Reset/restore factory settings	support	
Status indicator	Yellow, green and blue flashing modes in different working states	
Working temperature/storage temperature	0ºCÿ45ºC/-40ºCÿ70ºC	
Working humidity/storage humidity	5%~95% (non-condensing)	
Power consumption	ÿ13W	
Safety regulations	GB4943, EN/IEC/UL 60950-1, EN/IEC/UL 62368-1	
EMC	EN 55024, EN 55032, EN 61000-3-2, EN 61000-3-3, EN 61000-4-2, EN 61000-4-3, EN	

property	WA6520	WA6520 H20
	61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11, EN60601-1-2, EN301 489-1ÿEN301 489-17	
environment	GB/T 2423, GB/T 13543, GB 4208	
Radio Frequency Certification	FCC Part 15, EN 300 328, EN 301 893, MIIT radio transmitter model approval	
MTBF	>850000H	

Software Specifications

property		**WA6520** Series
Product Positioning		Indoor installation (5GHz 2*2 MIMO + 2.4GHz 2*2 MIMO)
Working Mode	Fit	Control and management via AC
	CloudÿFatÿ	Can be managed by Yunjian Network or work independently
	Mode Switching	The mode can be switched through command line, AC, Yunjian Network, Reset button, etc.
11ax support	Wi-Fi 6 (802.11ax) for the entire device High speed	2.4Gbps+0.575Gbps
	TWT	support
	BSS Color	support
	MU-MIMO	support
	OFDMA	support
	Only 11ax	support
WLAN Basics	Operating frequency band	5GHz+2.4GHz
	A-MPDU	support
	A-MSDU	support
	Virtual AP (recommended in actual application A maximum of 5 radio frequencies can be set)	16
	Maximum Likelihood Demodulation (MLD) Support	
	Maximum Ratio Combining (MRC) support	
	Space-time block code (STBC)	support
	Low-density parity check code (LDPC) support	
Wi-Fi Extender	STA Management	Supports STA abnormal offline detection, STA aging, STA-based statistics and status query, etc.
	Limit on the number of access users	support
	Link integrity detection	support
	Broadcast Probe request response control support	
	Prohibit weak signal client access support	
	Hiding SSID	support
	wlan rrm	support

	Wireless Bridging	support
	Repeater Mode	support
	Client Mode	Cloud mode support
	Doctor AP	Fit mode support
	Remote AP	Fit mode support
	11k	support
	11v	Fit mode support
	11r	Fit mode support
Security Policy	encryption	Supports 64/128-bit WEP, TKIP, CCMP, WPA3, and WAPI encryption
		Supports multiple key update trigger conditions to dynamically update unicast/broadcast keys
	802.11i	support
	Certification	Support 802.1x authentication, MAC address authentication, PSK authentication, Portal authentication, etc. open system/shared key authentication; Enhanced Open System Authentication Mixed access of WPA, WPA2, WPA3, and Pre-RSNA users
	User isolation	Supports Layer 2 isolation of wireless users Support SSID-based wireless user isolation
	Forwarding Security	Supports message filtering, MAC address filtering, broadcast storm suppression, etc.
	Wireless endpoint access	Support wireless EAD
	SSID and VLAN binding	support
	Intelligent Wireless Application Awareness (wIAA) support	
	wIDS/wIPS	support
	Management frame protection (802.11w) Supported	
	802.1X Client	support
AAA	Radius Client	support
	Authentication server multi-domain configuration	support
	Backup authentication server	support
Layer 2 and 3 functions	IP address settings	Support: static IP address or DHCP IP address (option 60)
	Native IPv6	support
	IPv6 Portal	support
	IPv6 SAVI	support
	ACL	Support (IPv4/IPv6)
	NAT	support
	PPPoE Client	support
	Local forwarding	Fit mode supports: local forwarding based on SSID+VLAN
Quality of Service	802.11e	Support WMM
	Priority	Support Ethernet port 802.1p identification and marking

		Support mapping of wireless priority to wired priority
	QoS Policy Mapping	Support different SSID/VLAN mapping different QoS policies
	Support L2~L4 packet filtering and flow classification Function	support
	CAR	support
	User bandwidth management	Allocate available bandwidth per STA Allocate total bandwidth to all STAs based on SSID Adjust STA available bandwidth according to business dynamics
	Load Balancing	Support traffic-based load balancing Support user-based load balancing Dual 5G devices support load balancing based on frequency band
	Spectrum Navigation	support
	Multicast Enhancement	Support: Multicast to unicast (IPv4/IPv6)
	CACýCall Admission Controlý	Support: Based on the number of users and based on channel utilization
	Application Identification	Fit mode supports audio and video optimization (eMDI/SQA/UCC)
	Temporal Fairness (ATF)	support
Green and energy-saving	Green AP Mode	support
	Dynamic MIMO Power Saving	support
	U-APSD	support
	SM Power Save	support
Management and maintenance	AC Centralized Management	Fit mode: Support Cloud mode: supports version upgrades and mode switching
	Cloud Simple Management	Cloud mode support
	local web	Cloud mode support
	telnet	Fit/Cloud mode support
	ssh	Fit/Cloud mode support
	Debug serial port	Fit/Cloud mode support
	Intelligent Operation and Maintenance	Fit/Cloud mode support

*Note: The options listed as "supported" in the software specification table indicate that all AP modes are supported.

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