

H3C WA6320 Indoor Wi-Fi 6 (802.11ax) Wireless Access Device

Product Overview

The H3C WA6320 wireless product is a Wi-Fi 6 (802.11ax) AP product independently developed by H3C Technologies Co., Ltd. (H3C). It can be widely used in high-density user access and telephone

Equipped with H3C's new generation Comware network operating system platform to achieve cloud-network-edge collaboration and innovative 4i technology to achieve intelligent radio frequency management, intelligent terminal management,

Intelligent service assurance and intelligent network healing comprehensively guarantee users' wireless smart and fast experience, while allowing network managers to achieve worry-free operation and maintenance.

- The whole device adopts a dual-band four-stream design, and the access rate of the whole device can reach up to 1.775Gbps. The 5GHz radio supports 2 spatial streams with a maximum negotiation rate of 1.2Gbps, and the 2.4GHz radio supports 2 spatial streams with a maximum negotiation rate of 0.575Gbps.
- Flexible installation methods, supporting panel, ceiling, wall and other installation methods.



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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.

Cloud-based intelligent O&M provides comprehensive visibility into the status of wireless devices, networks, and terminals, while simplifying management and O&M. This reduces customer capital investment, frees up O&M and management manpower, and ultimately reduces costs and increases efficiency.

Anchor Networking

This product supports Anchor networking mode, which can complete the establishment and management of wireless networks without the need for wireless controller devices.

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, blacklists, and whitelists. It can detect, identify, and counter illegal wireless devices and effectively block them.

Wired Security

Support AP wired access control, AP wired port can be used as 1X Client authentication to access the wired network, thus ensuring the legitimacy of access AP; at the same time,

CAPWAP tunnel encryption and DTLS encryption methods 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.

Wireless access to ensure network security.

Air interface optimization and terminal access strategy

Supports Radio Resource Optimization Policy (RROP), which is a collection of multiple wireless air interface optimization methods. It is dedicated to reducing or controlling the consumption of air interface media resources by management messages, broadcast messages, and invalid messages, leaving more resources to provide users with better wireless application services.

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

slightly.

Supports terminal access control policy (SACP, Station Access Control Policy), which controls terminal access to better APs or wireless services by limiting, controlling, and guiding wireless terminal access; and controls and schedules terminal traffic according to network applications, thereby improving the overall performance of the entire wireless network and improving the wireless access application experience.

SACP mainly includes prohibiting weak signal client access, spectrum navigation, roaming navigation, load sharing, ignoring weak signal strength messages, and fair adjustment of air interface transmission.

Terminal control strategies such as speed, traffic shaping based on client link status, and intelligent bandwidth guarantee.

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 frequency management, and adjusts radio frequency parameters such as working channel, bandwidth, power, etc. in a timely manner to maintain the optimal radio frequency resource status. It can realize automatic network deployment and network automatic 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.

This product can simulate wireless terminals and work with the intelligent operations and maintenance platform to analyze and troubleshoot wireless air interface problems. This is known as Doctor AP mode. In this mode, the AP simulates terminal behavior, collects wireless network information, and synchronizes it to the intelligent operations and maintenance platform for precise diagnosis. In conjunction with the Cloudnet app and Cloud Simple, this enables comprehensive cloud-network-endpoint analysis to precisely locate wireless network issues.

Support OFDMA technology

Supporting OFDMA (Orthogonal Frequency Division Multiple Access) technology, 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 voice, video, etc. in multi-user scenarios.

User experience of low-latency applications.

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

	WA6320
Dimensions (excluding antenna interface and accessories, length * width * height)	185mm×185mm×33mm
Fixed interface	1 100/1000M electrical port
PoE	Support 802.3af compatible power supply
Local power supply	Support 54V DC local power supply

property	WA6320
Console	1
Built-in antenna	Built-in smart antenna system Radio 1: 5G Omnidirectional Antenna Radio 2: 2.4GHz omnidirectional antenna
Built-in IoT	Bluetooth 5.0/RFID
Operating frequency band	802.11ax/ac/n/a: 5.725GHz-5.850GHz (China); 5.47GHz~5.725GHz; 5.15GHz~5.35GHz (China country) 802.11ax/b/g/n: 2.4GHz-2.483GHz (China)
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 MIMO-OFDM(11n)~MCS 0-15 MIMO-OFDM(11ac)~MCS 0-9 MIMO-OFDM(11ax)~MCS 0-11
Modulation method	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/ac wave2~MIMO-OFDM:BPSK,QPSK,16QAM,64QAM,256QAM 11ax~MIMO-OFDM: BPSK,QPSK,16QAM,64QAM,256QAM,1024QAM
Transmit power (single channel)	20dBm
Adjustable power granularity	1dBm
Reset/restore factory settings	support
Status indicator	Blink Alternate flashing mode, orange, green and blue different working status flashing mode, terminal access breathing flashing mode
Working temperature/storage temperature	-10°C~55°C/-40°C~70°C
Working humidity/storage humidity	5%~95% (non-condensing)
Power consumption	~12.42W
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 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11, EN60601-1-2~EN301 489-1~EN301 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	WA6320
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Product Positioning		Indoor installation (5GHz 2*2 MIMO + 2.4GHz 2*2 MIMO)
Working Mode	Fit	Control and management via AC
	CloudyFatıy	Can be managed by Yunjian Network or work independently
	Anchor AC	Can be used as AC mode to manage fit AP
	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	1.2Gbps+0.575Gbps
	TWT	support
	BSS Color	support
	MU-MIMO	support
	OFDMA	support
	Only 11ax	support
WLAN Basics	Operating frequency band	5GHz+2.4GHz
	Maximum number of users connected per radio: 512 (maximum number of users connected to the entire device: 1024)	
	Virtual AP (recommended in actual application) <small>A maximum of 5 radio frequencies can be set)</small>	16 (maximum number of services per device: 32)
	A-MPDU	support
	A-MSDU	support
	Maximum Likelihood Demodulation (MLD) Support	
	Maximum Ratio Combining (MRC) support	
	Space-time block code (STBC)	support
	Low-density parity-check coding ıLDPCı	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 WEP, TKIP, CCMP, and WPA3
		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)
	CACyCall Admission Control	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/Anchor AC mode support
	telnet	Cloud/Anchor AC mode support
	ssh	Cloud/Anchor AC mode support
	snmp	Cloud/Anchor AC mode support
	Debug serial port	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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