

# H3C New Generation 802.11ac Wave2 Series AP

## Overview



H3C 802.11ac Wave2 series Access Point (AP) is based on the new generation of self-developed Gigabit 802.11ac MIMO and 802.11ac Wave2 MU-MIMO technology. Compared with existing 802.11ac technology, Wave2 can support simultaneous data transmission to multiple users, and with increased overall throughput.

H3C provides industry broadest portfolio of Wave 2 series AP, which include WA560, WA538, WA536, WA530 and WA510H, in which WA538 and WA536 are the leading Wave2 triple band AP, WA510H is some of the first wall plate Wave2 APs. Combined with their compact appearance, H3C 802.11ac Wave2 series AP provides flexible installation such as for wall, ceiling, or other environments.

## Features

### Smart cloud access and optimal WLAN TCO

- H3C 802.11ac Wave2 series AP complies with 802.11ac Wave2 standard and features maximum four streams 1733Mbps wireless transfer rate for 5GHz (WA560 series and WA538) and total 3Gbps speed of combining 2.4GHz and 5GHz (WA538). With the smart adaptive antenna array technology, it can increase the scope of coverage, improve access density and operation stability, and provide a better mobile cloud access and wireless network total cost of ownership (TCO).

### Dual uplinks (Except WA510H)

- H3C 802.11ac Wave2 series AP supports Dual uplink ports, which remove any bottleneck that limits the upstream speed in wireless products with Fast Ethernet ports, and provide a smooth upgrade path that allows for faster transmission and diversified RF deployment strategies.
- Dual GE ports also provide uplink transmission backup that will remove a single point of failure on the wired transmission.

### Triple band access (WA538 & WA536)

- H3C innovative triple band technology offers customers 2.4GHz+5GHz+5GHz unparalleled high density and extremely high performance access. The total combined 2.4GHz and 5GHz speed can reach 3Gbps on WA538.

- The triple band access solution is extremely useful in high density scene such as meeting room or classroom.

## Install an AP in 3 to 5 minutes, 5 steps only (WA510H)

- Wall plate series AP uses the international standard wall plate design. Installing an AP is just as simple as installing other switching panels. All it takes is 5 steps in less than 5 minutes which effectively accelerates the wireless network deployment process.

## Multiple users' simultaneous communication, breaking wireless competition

- H3C 802.11ac Wave2 series AP supports Multi-user MIMO (MU-MIMO) technology, MU-MIMO has become the quintessential feature for wave2 AP. MU-MIMO technology which allows the AP to transmit data to multiple terminal devices simultaneously. According to terminal stream quantity, H3C 802.11ac Wave2 series AP can concurrently transmit data to multiple terminals with single stream. This improves data transmission efficiency, raises the number of users accessing the AP and provides better user experience.

## Green design

- H3C 802.11ac Wave2 series AP employs a green design which supports dynamic MIMO power saving (DMPS), enhanced automatic power save delivery (E-APSD), and smart identification of real terminal network requirements. It can dynamically adjust the MIMO working mode and efficiently put terminals to sleep from time to time.
- Green-AP mode supports single radio standby and allows for more precise control in power saving.
- H3C 802.11ac Wave2 series AP supports the innovative per-packet power control technology, which reduces standby power consumption and improves the battery lives of mobile devices without losing packets.

## Dual IPv4/IPv6 protocol stacks (Native IPv6)

- H3C 802.11ac Wave2 series AP is fully compliant with IPv6 and implements a dual IPv4/IPv6 protocol stacks. Existing IPv4 and IPv6 wired networks can work in parallel and seamlessly to register WLAN with WX series ACs, so that it never runs as an information silo.

## Real Time Spectrum Guard (RTSG)

- Real Time Spectrum Guard (RTSG) is the innovative H3C professional state-monitoring program for the wireless spectrum. H3C 802.11ac Wave2 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.

## End user Admission Domination (EAD)

- End user Admission Domination (EAD) integrates network access and endpoint security products, which ensure only complied wireless clients with mandated enterprise security policies to access network, reducing threat levels from infected wireless clients and raising the bar and improving the overall security of the wireless network. When working with a security policy server, it can remind users, isolate and boot them off the network when their systems are infected or not patched properly.

## Remote probing and analysis

- H3C 802.11ac Wave2 series AP can work as a remote probing and analysis sensor device. It can intercept WiFi packets nearby and save to a local device in real-time for troubleshooting and optimization analysis. Remote probing can conduct a non-convergent image for working channels, or a polling of all channels to satisfy wireless network monitoring and maintenance requirements.

## RF Optimizing Engine (ROE)

- H3C 802.11ac Wave2 series AP supports RF Optimizing Engine (ROE), which effectively increases the number of concurrent sessions in middle to high-density access, accomplishes streaming media application acceleration and QoS through character and protocol based RF optimization. Features include multi-user fairness, mixed access fairness, interference filtering, speed optimization, spectrum guide, IPv4/IPv6 multicast signal boost, per-packet power control and intelligent bandwidth guarantee.

## Intelligent AP load balancing

- H3C 802.11ac Wave2 series AP comes with intelligent load balancing, which spreads the workload according to the number of concurrent users and traffic. If a new incoming user breaks the preset loading limit, AP will check the location of the wireless client in real-time, determine if nearby APs with smaller workload can provide access, and deny the user access only when such AP exists. What sets H3C intelligent load balancing apart from existing load balancing schemes is that it kicks in only if the user is located in an area with overlapping AP coverage, and prevents loss of access when the workload limit is reached but no backup AP exists. This maximizes wireless network capacity while preventing any erratic behavior in load balancing.

## Unified management of wired and wireless networks

- Wireless Service Manager (WSM) of iMC provides unified management of wired and wireless networks, adding network management functions into existing wired network management systems. All WSM based wireless products can be managed through the open management protocol.
- WSM is SOA complied, modular based, fully expandable and evolving with the growing needs of network management. It offers a web-based management system and a simple and user-friendly management platform for wireless network administrators. When working in iMC and coupled with other modules, it also implements panel management wireless

management, troubleshooting, performance monitoring, software version control, deployment configuration management and user access management.

## Specifications

### Hardware Specifications

Features	WA560	WA538	WA536	WA530	WA510H
Weight	0.925kg	0.7Kg	0.728kg	0.34kg	0.25kg
Dimensions (excluding mounting accessories)	225x225x 55mm	183 x 183 x 40mm	215 x 215 x 47.5mm	170 x 170 X35.5mm	150 × 86 × 36.8mm
Speed	1733Mbps (5G) 800Mbps (2.4G)	1733Mbps (5G) 867Mbps (5G) 400Mbps (2.4G)	867Mbps (5G) 867Mbps (5G) 400Mbps (2.4G)	867Mbps (5G) 400Mbps (2.4G)	867Mbps (5G) 300Mbps (2.4G)
Fixed port	Two 10/100/1000Mbps Ethernet ports (one supports POE+) One console port One USB port	Two 10/100/1000Mbps Ethernet ports (one supports POE+) One console port One USB port	Two 10/100/1000Mbps Ethernet ports (one supports POE+) One console port	Two 10/100/1000Mbps Ethernet ports (one supports POE+) One console port One USB port	Front panel: Four 10/100/1000Mbps Ethernet ports One RJ45 pass-through port One USB port One Console port Back panel: One uplink port (10/100/1000Mbps Ethernet) One RJ45 pass-through port
Local power supply	NULL	54VDC	54VDC	54VDC	54VDC
Built-in antenna	Built-in low-E omni-directional antenna system (operating frequency: 2.4GHz and 5GHz, gain 4dBi)	Built-in low-E omni-directional antenna system (operating frequency: 2.4GHz and 5GHz, gain 3dBi)	Built-in antenna system (operating frequencies: 2.4GHz and 5GHz, gain 7dBi)	Built-in low-E omni-directional antenna system (operating frequency: 2.4GHz and 5GHz, gain 3dBi)	Built-in low-E omni-directional antenna system (operating frequency: 2.4GHz and 5GHz, gain 3dBi)
Maximum radio power(limited by local regulatory	20dBm	20dBm	20dBm	20dBm	20dBm

Features	WA560	WA538	WA536	WA530	WA510H
requirements)					
Adjustable power	1dBm	1dBm	1dBm	1dBm	1dBm
Power consumption	<25W	<25W	<15W	<12.95W(without USB)	<12.95W
Operating temperature/storage temperature	0°C~45°C/-40°C~70°C				0°C~40°C/-40°C~70°C
Operating humidity/storage humidity	5% to 95% (non-condensing)				
PoE	802.3af/802.3at compatible power supply				
Operating frequencies	802.11ac/n/a : 5.725GHz-5.850GHz ; 5.47~5.725GHz; 5.15~5.35GHz 802.11b/g/n : 2.4GHz-2.483GHz				
Modulation	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 (0-31 for WA560) MIMO-OFDM (11ac): MCS 0-9				
Safety compliance	IEC 60950-1, EN 60950-1				
EMC	EN 301489-1, EN 301489-17, EN 55032, EN 55024, EN 60601-1-2				
Radio frequency certification	EN 300 328, EN 301 893				
Health	EN 50385				

## Software Specifications

Features	WA560	WA538	WA536	WA530	WA510H	
Positioning	Indoor 802.11ac Wave2 AP					
11ac Supported	Streams	4	2/4	2/2	2	
	Operating frequency	5GHz				
	80MHz mode	✓				
	MU-MIMO	✓				
	1733Mbps(PHY)	✓(WA560 & WA538 Radio1 only)				
	A-MPDU	✓				
	A-MSDU	✓				
	Maximum likelihood demodulation (MLD)	✓				
	Maximal ratio combining (MRC)	✓				
	Spatial-Time block coding (STBC)	✓				
Low-density parity check	✓					

Features		WA560	WA538	WA536	WA530	WA510H
11n	(LDPC)					
	Streams	4/4	2/2/4	2/2/2	2/2	2/2
	Operating frequencies	5GHz/2.4GHz				
	40MHz	✓(Not recommended in 2.4GHz environments)				
	800Mbps(PHY)	✓(WA560 only)				
	A-MPDU	✓				
	Maximum likelihood demodulation (MLD)	✓				
	Transmit Beamforming (TxBF)	✓				
	Maximal ratio combining (MRC)	✓				
	Spatial-Time block coding (STBC)	✓				
Low-density parity check (LDPC)	✓					
WLAN basics	Virtual APs(5 recommended for each antenna in real-world applications)	16/radio				
	open system/shared key authentication	✓				
	Broadcast Probe acknowledge control	✓				
	Mixed connection for WPA, WPA2 and Pre-RSNA users	✓				
	RTS/CTS	✓				
	CTS-to-self	✓				
	Concealed SSID	✓				
WLAN extended	STA related	STA offline anomaly check, STA aging, statistics and status query				
	Limit user number	✓				
	Link integrity check	✓				
Security	Encryption	WEP-64/128/152bit, dynamic WEP, TKIP, CCMP(11n recommended )				
		Multiple encryption key triggered dynamic unicast/multicast key update				
	802.11i	✓				
	Authentication	802.1X, MAC address authentication, PSK authentication, Portal (May need to work with H3C Access Controller depending on application)				
	User Isolation	Supported: Layer 2 forwarding restriction Virtual AP (multiple SSIDs) isolation				
	Forwarding security	Packet filtering, MAC address isolation				
	SSID and VLAN binding	✓				

Features		WA560	WA538	WA536	WA530	WA510H
	Wireless Intelligent Application Aware (wIAA)	✓				
	wIDS/wIPS	✓				
	802.11w	✓				
AAA	Radius Client	✓				
	Multiple-domain authentication server	✓				
	Backup authentication server	✓				
Layer 2 and layer 3 features	IP address configuration	DHCP assigned IP(option 60)				
	Native IPv6	✓				
	IPv6 Portal	✓				
	IPv6 SAVI	✓				
	ACL	IPv4/IPv6				
	Local forwarding	Local forwarding based on SSID+VLAN				
	Multicast enhancement	IGMP Snooping/MLD Snooping				
QoS	802.11e	Wi-Fi Multimedia (WMM)				
	Priority	Ethernet port based 802.1p identification and marking priority				
		Priority mapping for wired and wireless connection				
	Strategic QoS mapping	Distinctive QoS strategies based on individual SSID/VLAN				
	Layer 2 to Layer 4 packet filtering and traffic classification	✓				
	CAR	✓				
	User bandwidth management	Bandwidth allocation per STA, or all STAs sharing bandwidth with a common SSID				
	Load balancing	User/traffic/radio (dual frequencies) based				
	Spectrum Guide	✓				
	Multicast enhancement	Multicast to Unicast (IPv4, IPv6)				
	CAC(Call Admission Control)	User number/bandwidth based				
SVP Phone	Bandwidth allocation per STA, or all STAs sharing bandwidth with a common SSID					
Green features	Per-packet power control (PPC)	✓				
	Green AP mode	✓				
	Dynamic MIMO power saving	✓				
	Enhanced automatic power save delivery (E-APSD)	✓				
	WMM Power Save	✓				

Features		WA560	WA538	WA536	WA530	WA510H
Management and maintenance	Network Management	✓				
	Managed SSID	✓				
	Log function	SYSLOG				
	Remote probe analysis	✓				
Wi-Fi Certified		IEEE 802.11a/b/g/n/ac, WMM				

## Ordering Information:

Product ID	Product Description
EWP-WA560-WW-FIT	H3C WA560 Internal Antennas 8 Streams Dual Radio 802.11ac/n Wave 2 Access Point,FIT,WW
EWP-WA538-WW-FIT	H3C WA538 Internal Antennas 8 Streams Triple Radio 802.11ac/n Wave 2 Access Point,FIT,WW
EWP-WA536-WW-FIT	H3C WA536 Internal Antennas 6 Streams Triple Radio 802.11ac/n Wave 2 Access Point,FIT,WW
EWP-WA530-WW-FIT	H3C WA530 Internal Antennas 4 Streams Dual Radio 802.11ac/n Wave 2 Access Point,FIT,WW
EWP-WA510H-WW-FIT	H3C WA510H Internal Antennas 4 Streams Dual Radio 802.11ac/n Wave 2 Walljack Access Point,FIT,WW
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 for WA560)

**New H3C Technologies Co., Limited**

Beijing base  
8 GuangShun South Street, Chaoyang District, Beijing  
Zip: 100102

Hangzhou base  
466 Changhe Road, Binjiang District, Hangzhou, Zhejiang  
Province 310052 P.R.China  
Zip: 310052  
Tel: +86-571-86760000  
Fax: +86-571-86760001

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