



# H3C WA500 Series

# Access Point

802.11ac Wave2 Access Point

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New H3C Technologies Co., Limited

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## 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 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 AP with triple-band (two 5GHz plus 2.4GHz), WA510H is one 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 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). The WA500 series is available for easy maintenance and management from the H3C Oasis cloud platform.

### 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 5GHz+5GHz+2.4GHz unparalleled high density and extremely high performance access. The total speed combined 2.4GHz and 5GHz can reach 3Gbps on WA538.

The triple band access solution is extremely useful in high density scene such as meeting room or big 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 Defense (EAD)

H3C iMC End-user Admission Defense (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.

### Anchor AC mode

Anchor AC mode is designed for networks of all sizes, including SMB. In Anchor AC mode, AP will serve as a virtual controller for the entire network. (Not included WA530,WA510H,WA560)

### H3C Cellular Coexistence Feature (CCF)

H3C uses built-in hardware filtering to minimize the impact of interference from 3G/4G cellular networks.

### 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.

## Hardware specifications

| Features   | WA560-WW   | WA538-WW   | WA536-WW   | WA530-WW   | WA510H-WW   |
|--|--|--|--|--|---|
| <b>Weight</b>  | 0.925kg  | 0.7Kg  | 0.728kg  | 0.34kg   | 0.25kg  |
| <b>Dimensions (excluding mounting accessories)</b>                                   | 225x225x 55mm  | 183 x 183 x 40mm   | 215 x 215 x 47.5mm   | 170 x 170 X35.5mm  | 150 × 86 × 36.8mm   |
| <b>Speed</b>   | 1733Mbps (5G)<br>800Mbps (2.4G)  | 1733Mbps (5G)<br>867Mbps (5G)<br>400Mbps (2.4G)  | 867Mbps (5G)<br>867Mbps (5G)<br>400Mbps (2.4G)   | 867Mbps (5G)<br>400Mbps (2.4G)   | 867Mbps (5G)<br>300Mbps (2.4G)  |
| <b>Fixed port</b>  | Two 10/100/1000Mbps Ethernet ports (both support PoE+) Network ports support link aggregation(LACP) for redundancy and increased capacity One console port One USB port      | Two 10/100/1000Mbps Ethernet ports (one of two works on PoE+) Network ports support link aggregation(LACP) for redundancy and increased capacity One console port One USB port | Two 10/100/1000Mbps Ethernet ports (only GE#1 supports PoE+) Network ports support link aggregation(LACP) for redundancy and increased capacity One console port             | Two 10/100/1000Mbps Ethernet ports (one of two works on PoE+) Network ports support link aggregation(LACP) for redundancy and increased capacity One console port One USB port | <b>Front panel:</b><br>4x10/100/1000Mbps Ethernet ports<br>1x RJ45 pass-through port<br>1x USB port<br>1x Console port<br><b>Back panel:</b><br>1x uplink GE port (10/100/1000Mbps)<br>1 x RJ45 pass-through port |
| <b>Local power supply</b>  | NULL   | 54VDC  | 54VDC  | 54VDC  | 54VDC   |
| <b>Built-in antenna</b>  | Dual-band low-E omni-directional antenna   | Dual-band low-E omni-directional antenna   | Dual-band low-E omni-directional antenna   | Dual-band low-E omni-directional antenna   | Dual-band low-E omni-directional antenna  |
| <b>Antenna gain</b>  | 2.4GHz: 5dBi<br>5GHz: 4.7dBi   | 2.4GHz: 5.3dBi<br>5GHz: 7dBi   | 2.4GHz: 6dBi<br>5GHz: 6dBi   | 2.4GHz: 3.8dBi<br>5GHz: 3.1dBi   | 2.4GHz: 3.4dBi<br>5GHz: 3.4dBi  |
| <b>Maximum transmit power(Combined power, limited by local laws and regulations)</b> | 2.4GHz: 15dBm<br>5GHz: 22dBm<br>(Transmit power is multi-chain combined power, no antenna gain is included. The actual transmit power depends on local laws and regulations) | 2.4GHz: 18dBm<br>5GHz: 21dBm<br>(Transmit power is multi-chain combined power, no antenna gain is included. The actual transmit power depends on local laws and regulations)   | 2.4GHz: 18dBm<br>5GHz: 24dBm<br>(Transmit power is multi-chain combined power, no antenna gain is included. The actual transmit power depends on local laws and regulations) | 2.4GHz: 18dBm<br>5GHz: 23dBm<br>(Transmit power is multi-chain combined power, no antenna gain is included. The actual transmit power depends on local laws and regulations)   | 2.4GHz: 18dBm<br>5GHz: 20dBm<br>(Transmit power is multi-chain combined power, no antenna gain is included. The actual transmit power depends on local laws and regulations)                                      |
| <b>Adjustable power</b>  | 1dBm   | 1dBm   | 1dBm   | 1dBm   | 1dBm  |
| <b>Power consumption</b>   | <25W   | <25W   | <15W   | <12.95W (without USB)  | <12.95W   |

|   |   |     |     |     |                             |
|---|---|-----|-----|-----|-----------------------------|
| <b>Radio Specifications:<br/>Max. number of STA<br/>per radio</b>   | 256   | 256 | 256 | 256 | 124                         |
| <b>Radio Specifications:<br/>Max. number of<br/>SSIDs per radio</b> | 16  | 16  | 16  | 16  | 16                          |
| <b>Operating<br/>temperature/storage<br/>temperature</b>            | Operating Tem: -10 °C ~ 55 °C ; 0°C~45°C(Recommended)<br>Storage Tem: -40° C~70° C  |     |     |     | 0°C ~ 40°C/-40°<br>C ~ 70°C |
| <b>Operating<br/>humidity/storage<br/>humidity</b>                  | 5% to 95% (non-condensing)  |     |     |     |                             |
| <b>PoE</b>  | 802.3af/802.3at compatible power supply   |     |     |     |                             |
| <b>Operating frequencies</b>  | 802.11ac/n/a : 5.725GHz-5.850GHz ; 5.47~5.725GHz; 5.15~5.35GHz<br>802.11b/g/n : 2.4GHz-2.483GHz   |     |     |     |                             |
| <b>Modulation</b>   | OFDM: BPSK@6/9Mbps, QPSK@12/18Mbps, 16-QAM@24Mbps, 64-QAM@48/54Mbps<br>DSSS: DBPSK@1Mbps, DQPSK@2Mbps, CCK@5.5/11Mbps<br>MIMO-OFDM (11n): MCS 0-15 (0-31 for WA560)<br>MIMO-OFDM (11ac): MCS 0-9                                |     |     |     |                             |
| <b>Modulation mode</b>  | 11b: DSS: CCK@5.5/11Mbps, DQPSK@2Mbps, DBPSK@1Mbps<br>11a/g: OFDM: 64QAM@48/54Mbps, 16QAM@24Mbps, QPSK@12/18Mbps, BPSK@6/9Mbps<br>11n: MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM<br>11ac: MIMO-OFDM: BPSK, QPSK, 16QAM, 64QAM, 256QAM |     |     |     |                             |
| <b>Safety compliance</b>  | IEC 60950-1, EN 60950-1   |     |     |     |                             |
| <b>EMC</b>  | EN 301489-1, EN 301489-17, EN 55032, EN 55024, EN 60601-1-2   |     |     |     |                             |
| <b>Radio frequency<br/>certification</b>                            | EN 300 328, EN 301 893  |     |     |     |                             |
| <b>Health</b>   | EN 50385  |     |     |     |                             |

## Software specifications

| Features              |                  | WA560-WW                           | WA538-WW                           | WA536-WW                           | WA530-WW             | WA510H-<br>WW        |
|-----------------------|------------------|------------------------------------|------------------------------------|------------------------------------|----------------------|----------------------|
| <b>Positioning</b>    |                  | Indoor 802.11ac Wave2 AP           |                                    |                                    |                      |                      |
| <b>11ac Supported</b> | Streams          | 5G: 4x4<br>2.4G: 2x2               | 5G(1):4x4<br>5G(2):2x2<br>2.4G:2x2 | 5G(1):2x2<br>5G(2):2x2<br>2.4G:2x2 | 5G: 2x2<br>2.4G: 2x2 | 5G: 2x2<br>2.4G: 2x2 |
|                       | 20/40/80MHz mode | ✓                                  |                                    |                                    |                      |                      |
|                       | MU-MIMO          | ✓                                  |                                    |                                    |                      |                      |
|                       | 1733Mbps(PHY)    | ✓(WA560-WW & WA538-WW Radio1 only) |                                    |                                    |                      |                      |
|                       | A-MPDU           | ✓                                  |                                    |                                    |                      |                      |

|                      |  |   |
|----------------------|--|---|
|                      | A-MSDU   | ✓   |
|                      | Maximum likelihood demodulation (MLD)                  | ✓   |
|                      | Maximal ratio combining (MRC)                          | ✓   |
|                      | Spatial-Time block coding (STBC)                       | ✓   |
|                      | Low-density parity check (LDPC)                        | ✓   |
|                      | CDD/CSD  | ✓   |
|                      | DFS  | ✓   |
| <b>WLAN basics</b>   | Virtual APs  | 16/radio  |
|                      | open system/shared key authentication                  | ✓   |
|                      | Broadcast Probe acknowledge control                    | ✓   |
|                      | Mixed connection for WPA, WPA2,WPA3 and Pre-RSNA users | ✓   |
|                      | RTS/CTS  | ✓   |
|                      | CTS-to-self  | ✓   |
|                      | Concealed SSID   | ✓   |
|                      | Hotspot 2.0  | ✓   |
| <b>WLAN extended</b> | STA related  | STA offline anomaly check, STA aging, statistics and status query   |
|                      | Limit user number                                      | ✓   |
|                      | Link integrity check                                   | ✓   |
| <b>Security</b>      | Encryption   | WEP-64/128/152bit, dynamic WEP, TKIP, CCMP,WPA3   |
|                      |  | Multiple encryption key triggered dynamic unicast/multicast key update  |
|                      | 802.11i  | ✓   |
|                      | Authentication   | 802.1X, MAC address authentication, PSK authentication, Portal, PPSK (May need to work with H3C Access Controller depending on application) |
|                      | User Isolation   | Supported:<br>1. Layer 2 forwarding restriction<br>2. Virtual AP (multiple SSIDs) isolation   |
|                      | Forwarding security                                    | Packet filtering, MAC address isolation   |
|                      | SSID and VLAN binding                                  | ✓   |
|                      | Wireless Intelligent Application Aware (wIAA)          | ✓   |
|                      | WIDS/WIPS  | ✓   |
| 802.11w              | ✓  |   |
| <b>AAA</b>           | Radius Client  | ✓   |





|                                     |  |   |
|-------------------------------------|--|---|
|                                     | Multiple-domain authentication server  | ✓   |
|                                     | Backup authentication server   | ✓   |
| <b>Layer 2 and layer 3 features</b> | IP address configuration   | Static IP (available only in fat AP mode)<br>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  |
| <b>QoS</b>                          | 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 |   |
| <b>Green features</b>               | Per-packet power control (PPC)   | ✓   |
|                                     | Green AP mode  | ✓   |
|                                     | Dynamic MIMO power saving  | ✓   |
|                                     | Enhanced automatic power save delivery (E-APSD)                                | ✓   |
|                                     | WMM Power Save   | ✓   |
| <b>Management and maintenance</b>   | Network Management   | Trap, HTTP(S), SSH, Telnet, FTP/TFTP, SNMP V1/V2/V3 only applicable in Fat mode |
|                                     | Managed SSID   | ✓   |
|                                     | Log function   | SYSLOG  |



|                        |  |   |
|------------------------|--|---|
|                        | Remote probe analysis  | ✓   |
|                        | AP Working Mode  | Fit/Fat & Anchor(not included WA510H,WA530,WA560) |
| <b>Wi-Fi Certified</b> | IEEE 802.11a/b/g/n/ac, WMM, WPA, WPA2 and WPA3 – Enterprise, Personal (SAE), Enhanced Open (OWE) |   |

## 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)                   |



The Leader in Digital Solutions

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