

#### **DATA SHEET**

# ARUBA 500H SERIES HOSPITALITY ACCESS POINTS

High performance and cost-effective Wi-Fi 6 (802.11ax) for hospitality, branch, and teleworker deployments

These economical Wi-Fi 6 access points provide high-performance connectivity for any organization experiencing growing mobile, cloud and IoT requirements. With a wireless aggregate data rate of up to 1.5 Gbps and gigabit local wired ports, they deliver the range of connectivity options needed for venues such as hotels, residence halls, and remote offices alike.



The 500H Series APs are designed to optimize user experience by maximizing Wi-Fi efficiency and dramatically reducing airtime contention between clients.

Features include Orthogonal frequency-division multiple access (OFDMA), multi-user MIMO and cellular optimization. With up to 2 spatial streams (2SS) and 80MHz channel bandwidth, the 500H Series provides groundbreaking wireless capabilities for budget-conscious deployments.

Read the Multi-User 802.11ax white paper for further information.

#### Advantages of OFDMA

This capability allows Aruba's APs to handle multiple Wi-Fi 6 capable clients on each channel simultaneously, regardless of device or traffic type. Channel utilization is optimized

by handling each transaction via smaller sub-carriers or resource units (RUs), which means that clients are sharing a channel and not competing for airtime and bandwidth.



#### **KEY FEATURES**

- Combine wireless and wired access in a single compact form factor
- Ideal for organizations with work from home or teleworker initiatives
- Up to 1.5 Gbps of maximum wireless throughput
- 4 wired network ports and 1 Smart Rate uplink port
- WPA3 and Enhanced Open security
- Built-in technology that resolves sticky client issues for Wi-Fi 6 and Wi-Fi 5 devices
- OFDMA and MU-MIMO for enhanced multi-user efficiency
- IoT-ready Bluetooth 5 and Zigbee support

## Wi-Fi 6 and MU-MIMO aware client optimization

Aruba's patented Al-powered ClientMatch technology eliminates sticky client issues by placing Wi-Fi 6 capable devices on the best available AP. Session metrics are used to steer mobile devices to the best AP based on available bandwidth, types of applications being used and traffic type – even as users roam.

#### Advanced Cellular Coexistence (ACC)

This feature uses built-in filtering to automatically minimize the impact of interference from cellular networks, distributed antenna systems (DAS), and commercial small cell or femtocell equipment.

#### Intelligent Power Monitoring (IPM)

Aruba APs continuously monitor and report hardware energy consumption. They can also be configured to enable or disable capabilities based on available PoE power – ideal when wired switches have exhausted their power budget (AP-505H).

#### **IOT PLATFORM CAPABILITIES**

Like all Aruba Wi-Fi 6 APs, the 500H Series includes an integrated Bluetooth 5 and 802.15.4 radio (for Zigbee support) to simplify deploying and managing IoT-based location services, asset tracking services, security solutions and IoT sensors. This allows organizations to leverage the 500H Series as an IoT platform, which eliminates the need for an overlay infrastructure and additional IT resources.

#### Target Wake Time (TWT)

Ideal for IoTs that communicate infrequently, TWT establishes a schedule for when clients need to communicate with an AP. This helps improve client power savings and reduces airtime contention with other clients.

#### Advanced IoT Coexistence (AIC)

This feature uses built-in filtering to allow Wi-Fi and BLE/ Zigbee radios to operate at maximum performance, range and capacity without the impact of mutual interference

#### ARUBA SECURE INFRASTRUCTURE

The Aruba 500H Series includes security components to help protect user authentication and wireless traffic. Select capabilities include:

#### WPA3 and Enhanced Open

Support for stronger encryption and authentication is provided via the latest version of WPA for enterprise protected networks. Enhanced Open offers seamless new protection

for users connecting to open networks where each session is automatically encrypted to protect user passwords and data on guest networks.

#### WPA2-MPSK

MPSK enables simpler passkey management for WPA2 devices – should the Wi-Fi password on one device or device type change, no additional changes are needed for other devices. This requires ClearPass Policy Manager.

#### **VPN Tunnels**

In Remote AP (RAP) and IAP-VPN deployments, the Aruba 500H Series can be used to establish a secure SSL/IPSec VPN tunnel to a Gateway or Mobility Controller that is acting as a VPN concentrator.

#### Trusted Platform Module (TPM)

For enhanced device assurance, all Aruba APs have an installed TPM for secure storage of credentials, keys and boot code.

#### SIMPLE AND SECURE ACCESS

To simplify policy enforcement, the Aruba 500H Series uses Aruba's Policy Enforcement Firewall (PEF) to encapsulate all traffic from the AP to the Mobility Controller (or gateway) for end-to-end encryption and inspection. Policies are applied based on user role, device type, applications, and location. This reduces the manual configuration of SSIDs, VLANs and ACLs. PEF also serves as the underlying technology for Aruba Dynamic Segmentation.

#### **HIGH-DENSITY CONNECTIVITY**

Each 500H Series AP provides connectivity for a maximum of 256 associated clients per radio (512 in total). In real-world scenarios, the maximum recommended client density is dependent on environmental conditions.

#### **VERSATILE INSTALLATION OPTIONS**

The APs can be deployed as a wall-mount or for remote teleworker environments, they can be converted to a desk-mount by using an optional accessory stand.

# **FLEXIBLE OPERATION AND MANAGEMENT**

A unique feature of Aruba APs is the ability to operate in either controller-less (Instant) or controller-based mode.

#### Controller-less (Instant) mode

In controller-less mode, one AP serves as a virtual controller for the entire network. Learn more about Instant mode in this technology brief.

#### Remote AP or IAP-VPN mode

For both cloud and on-premises deployments, each AP can establish secure overlay VPN tunnels to a VPN Concentrator (VPNC). Aruba Central-managed SD-WAN Gateways and on-premises Mobility Controllers both support VPNC functionality.

## Mobility Controller mode

For optimized network performance, roaming and security, APs tunnel all traffic to a mobility controller for centrally managed traffic forwarding and segmentation, data encryption, and policy enforcement. Learn more in the ArubaOS datasheet.

# Management options

Available management solutions include Aruba Central (cloud-managed) or Aruba AirWave – a multi-vendor on-premises management solution.

For large installations across multiple sites, APs can be factory-shipped and can be activated with Zero Touch Provisioning through Aruba Central or AirWave. This reduces deployment time, centralizes configuration, and helps manage inventory.



Access point with optional stand shown

AP-505H: High-end dual radio Wi-Fi 6 Hospitality AP with 1+4 Ethernet ports, PSE, USB Wi-Fi radio and platform specifications  Two spatial stream (SU/MU) MIMO for up to 1.2Gbps wireless data rate (HE80) 2.4GHz radio  Two spatial stream (SU/MU) MIMO for up to 287Mbps wireless data rate (HE80) Note: HE40 operation is supported in 2.4GHz, but uncommon and not recommended for enterprise deployments  Maximum number of Supported client devices  Maximum number of Supported frequency bands Country-specific restrictions Supported radio Country-specific restrictions Country-specific re	Hardware variants		
Two spatial stream (SU/MU) MIMO for up to 1.2Gbps wireless data rate (HE80)  74.6Hz radio  Two spatial stream (SU/MU) MIMO for up to 1.2Gbps wireless data rate (HE80)  Two spatial stream (SU/MU) MIMO for up to 287Mbps wireless data rate (HE80)  Note: HE40 operation is supported in 2.4GHz, but uncommon and not recommended for enterprise deployments  Waximum number of associated client devices per radio  Up to 256 associated client devices per radio  2.400 to 2.500GHz (U-NIII-2) channels 36, 40, 44, 48  5.250 to 5.350GHz (U-NIII-2) channels 52, 56, 60, 64  5.470 to 5.725GHz (U-NIII-2) channels 194, 153, 157, 161, 165  Dynamic frequency selection (DFS) optimizes the use of available RF spectrum  Supported radio echnologies  8.802.11b. Direct-sequence spread spectrum (DSSS)  8.802.11b. Direct-sequence spread spectrum (DSSS)  8.802.11a (Driect-sequence spread spectrum (DSSS)  8.802.11a (Driect-seq	AP type		
Two spatial stream (SU/MU) MIMO for up to 287Mbps wireless data rate (HE20) Note: HE40 operation is supported in 2.4GHz, but uncommon and not recommended for enterprise deployments deployments deployments deployments Up to 256 associated client devices per radio  16 BSSIDs per radio  17 Ly	Wi-Fi radio and platform spe	cifications	
Note: IHE40 operation is supported in 2.4GHz, but uncommon and not recommended for enterprise deployments  Waximum number of associated client devices Maximum number of BSSIDS Maximum number of BSSIDS Supported frequency bands Country-Specific restrictions Supported frequency bands Country-Specific restrictions SpD()  1.5 (1.50 to 5.2500GHz (U-Nil-2) channels 30, 40, 44, 48  1.5 (2.50 to 5.350GHz (U-Nil-3) channels 52, 56, 60, 64  1.5 (2.70 to 5.7556Hz (U-Nil-3) channels 51, 54, 60, 44, 18, 112, 116, 120, 124, 128, 132, 136, 140, 144  1.5 (2.50 to 5.350GHz (U-Nil-3) channels 1149, 153, 157, 161, 165  Dynamic frequency selection (DFS) optimizes the use of available RF spectrum  1.5 (2.50 to 5.350GHz (U-Nil-3) channels 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144  1.5 (2.50 to 5.350GHz (U-Nil-3) channels 104, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144  1.5 (2.50 to 5.350GHz (U-Nil-3) channels 104, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144  1.5 (2.50 to 5.350GHz (U-Nil-3) channels 104, 149, 153, 157, 161, 165  Dynamic frequency selection (DFS) optimizes the use of available RF spectrum  1.5 (2.50 to 5.350GHz (U-Nil-3) channels 104, 149, 149, 149, 149, 149, 149, 149, 14	5GHz radio	Two spatial stream (SU/MU) MIMO for up to 1.2Gbps wireless data rate (HE80)	
2.400 to 2.500GHz (ISM) channels 1-13	2.4GHz radio	Note: HE40 operation is supported in 2.4GHz, but uncommon and not recommended for enterprise	
. 2.400 to 2.500GHz (ISM) channels 1-13 . 5.150 to 5.250GHz (U-NII-2) channels 3.40, 44, 48 . 5.250 to 5.350GHz (U-NII-2) channels 52, 56, 60, 64 . 5.470 to 5.725GHz (U-NII-2) channels 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144 . 5.725 to 5.850GHz (U-NII-2) channels 149, 153, 157, 161, 165  Dynamic frequency selection (DFS) optimizes the use of available RF spectrum  Supported radio ecchnologies  - 802.11b: Direct-sequence spread-spectrum (DSS) - 802.11b: Cortogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units	Maximum number of associated client devices	Up to 256 associated client devices per radio	
. 5.150 to 5.250GHz (U-NII-1) channels 36, 40, 44, 48 5.250 to 5.350GHz (U-NII-2) channels 52, 56, 60, 64 5.470 to 5.725GHz (U-NII-2) channels 152, 56, 60, 64 5.470 to 5.725GHz (U-NII-2) channels 150, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144 5.725 to 5.850GHz (U-NII-3) channels 149, 153, 157, 161, 165  Dynamic frequency selection (DFS) optimizes the use of available RF spectrum  802,11b: Direct-sequence spread-spectrum (DSSS) 802,11a: Orthogonal frequency-division multiplexing (OFDM) 802,11a: Orthogonal frequency-division multiplexing (OFDM) 802,11a: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units  802,11b: BPSK, QPSK, CCK 802,11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM (proprietary extension) 802,11a: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM (proprietary extension) 802,11ac very high throughput (WHT) support:  802,11ac very high throughput (WHT) support:  802,11ac very high throughput (WHT) support:  802,11ac set of the s	Maximum number of BSSIDs	16 BSSIDs per radio	
- 802.11b: Direct-sequence spread-spectrum (DSSS) - 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM) - 802.11ax: Orthogonal frequency-division multiplexing (OFDM) - 802.11ax: Orthogonal frequency-division multiplexing (OFDM) - 802.11ax: DPSK, QPSK, CCK - 802.11ax: BPSK, QPSK, CCK - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM (proprietary extension) - 802.11ac BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QA	Supported frequency bands (country-specific restrictions apply)	<ul> <li>5.150 to 5.250GHz (U-NII-1) channels 36, 40, 44, 48</li> <li>5.250 to 5.350GHz (U-NII-2A) channels 52, 56, 60, 64</li> <li>5.470 to 5.725GHz (U-NII-2C) channels 100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144</li> </ul>	
- 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM) - 802.11ax: Orthogonal frequency-division multiplexing (OFDM) - 802.11ax: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units - 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM (proprietary extension) - 802.11ar: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM (proprietary extension) - 802.11ar: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ar: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ar: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ar: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ac very high - throughput (WHT) support: - 802.11ac very high - throughput (WHT) support: - 802.11ar: G. 5 to 300 (MCS0 to MCS1) - 802.11ar: G. 5 to 300 (MCS0 to MCS15, HT20 to HT40), 400 with 256-QAM - 802.11ar: 6.5 to 867 (MCS0 to MCS9, NS5 = 1 to 2, WHT20 to VHT80), 1,083 with 1024-QAM - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ar: 6.5 to 867 (MCS0 to MCS11, NSS =	Dynamic frequency selection (	DFS) optimizes the use of available RF spectrum	
Supported modulation types:  - 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM (proprietary extension) - 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM  HT20/40  HT20/40  HT20/40  HT20/40/80  HE20/40/80  HE20/40/80  - 802.11ax high efficiency (HE) support:  - 802.11ax high efficiency (HE) - 802.11ax high efficiency (HE) - 802.11ax high efficiency (HE) - 802.11ax (-5.5 to 300 (MCS0 to MCS15, HT20 to HT40), 400 with 256-QAM - 802.11ax (-5.5 to 300 (MCS0 to MCS15, HT20 to HT40), 400 with 256-QAM - 802.11ax (-5.5 to 300 (MCS0 to MCS11, NSS = 1 to 2, VHT20 to VHT80), 1,083 with 1024-QAM - 802.11ax (-5.5 to 867 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40) - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)  - 802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE2	Supported radio technologies	<ul> <li>802.11b: Direct-sequence spread-spectrum (DSSS)</li> <li>802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM)</li> </ul>	
HT20/40  B02.11ac very high chroughput (VHT) support:  B02.11ax high efficiency (HE) support:	Supported modulation types:	<ul> <li>802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM (proprietary extension)</li> <li>802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension)</li> </ul>	
throughput (VHT) support:  ### WHT Support:  ###	802 11n high-throughout		
Support:	802.11ac very high throughput (VHT) support:	VHT20/40/80	
<ul> <li>802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54</li> <li>802.11n: 6.5 to 300 (MCS0 to MCS15, HT20 to HT40), 400 with 256-QAM</li> <li>802.11ac: 6.5 to 867 (MCS0 to MCS9, NSS = 1 to 2, VHT20 to VHT80), 1,083 with 1024-QAM</li> <li>802.11ax (2.4GHz): 3.6 to 574 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40)</li> <li>802.11ax (5GHz): 3.6 to 1,201 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE80)</li> </ul> 302.11n/ac/ax packet aggregation: <ul> <li>Transmit power</li> <li>Configurable in increments of 0.5 dBm</li> <li>2.4 GHz band: +20 dBm (17 dBm per chain)</li> <li>5 GHz band: +21 dBm (18 dBm per chain)</li> <li>Note: conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain</li> </ul> OdBm (conducted, per chain) VPN IPsec throughput 100 Mbps (AP-503H) and 500 Mbps or better (AP-505H)	802.11ax high efficiency (HE) support:	HE20/40/80	
A-MPDU, A-MSDU  Configurable in increments of 0.5 dBm  Maximum (aggregate, conducted total) transmit power (limited by local regulatory requirements):  Minimum configurable transmit power level  WPN IPsec throughput  A-MPDU, A-MSDU  Configurable in increments of 0.5 dBm  • 2.4 GHz band: +20 dBm (17 dBm per chain)  • 5 GHz band: +21 dBm (18 dBm per chain)  • Note: conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain  OdBm (conducted, per chain)	Supported data rates (Mbps):	<ul> <li>802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54</li> <li>802.11n: 6.5 to 300 (MCS0 to MCS15, HT20 to HT40), 400 with 256-QAM</li> <li>802.11ac: 6.5 to 867 (MCS0 to MCS9, NSS = 1 to 2, VHT20 to VHT80), 1,083 with 1024-QAM</li> <li>802.11ax (2.4GHz): 3.6 to 574 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE40)</li> </ul>	
<ul> <li>Maximum (aggregate, conducted total) transmit power (limited by local regulatory requirements):</li> <li>Mote: conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain</li> <li>ModBm (conducted, per chain)</li> <li>OdBm (conducted, per chain)</li> <li>OdBm (conducted, per chain)</li> </ul>	802.11n/ac/ax packet aggregation:	A-MPDU, A-MSDU	
<ul> <li>5 GHz band: +21 dBm (18 dBm per chain)</li> <li>Note: conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain</li> <li>Minimum configurable transmit power level</li> <li>OdBm (conducted, per chain)</li> <li>OdBm (conducted, per chain)</li> </ul>	Transmit power	Configurable in increments of 0.5 dBm	
Minimum configurable cransmit power level  VPN IPsec throughput  100 Mbps (AP-503H) and 500 Mbps or better (AP-505H)	conducted total) transmit power (limited by local regulatory requirements):  • 5 GHz band: +21 dBm (18 dBm per chain)  • Note: conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power levels exclude antenna gain.		
	Minimum configurable transmit power level		
	VPN IPsec throughput performance	100 Mbps (AP-503H) and 500 Mbps or better (AP-505H)	

- Advanced Cellular Coexistence (ACC) minimizes the impact of interference from cellular networks
- Advanced IOT Coexistence (AIC) allows concurrent operation of multiple radios in the 2.4GHz band without performance degradation (AP-505H)
- Maximum ratio combining (MRC) for improved receiver performance
- Cyclic delay/shift diversity (CDD/CSD) for improved downlink RF performance

- Space-time block coding (STBC) for increased range and improved reception
- Low-density parity check (LDPC) for high-efficiency error correction and increased throughput
- Transmit beam-forming (TxBF) for increased signal reliability and range
- 802.11ax Target Wait Time (TWT) to support low-power client devices

# **WI-FI ANTENNAS**

#### AP-503H

- Two integrated semi-directional antennas for 2x2 MIMO with peak single antenna gain of 2.5dBi in 2.4GHz and 5.6dBi in 5GHz. Built-in antennas are optimized for vertical wall or desk mounted orientation of the AP.
  - Combining the patterns of each of the antennas of the MIMO radios, the peak gain of the combined, average pattern is 1.7dBi in 2.4GHz and 5.0dBi in 5GHz.

#### AP-505H

- Two integrated semi-directional antennas for 2x2 MIMO with peak single antenna gain of 5.2dBi in 2.4GHz and 5.4dBi in 5GHz. Built-in antennas are optimized for vertical wall or desk mounted orientation of the AP.
  - Combining the patterns of each of the antennas of the MIMO radios, the peak gain of the combined, average pattern is 3.3dBi in 2.4GHz and 2.9dBi in 5GHz.

OTHER INTERFACES	
Uplink (E0)	AP-503H: Ethernet wired network port (RJ45)  · Auto-sensing link speed (10/100/1000BASE-T) and MDI/MDX  · 802.3az Energy Efficient Ethernet (EEE)  · POE-PD: 802.3af POE (class 3)
	<ul> <li>AP-505H: Smart Rate Ethernet wired network port (RJ45)</li> <li>Auto-sensing link speed (100/1000/2500BASE-T) and MDI/MDX</li> <li>2.5Gbps speed complies with NBase-T and 802.3bz specifications</li> <li>802.3az Energy Efficient Ethernet (EEE)</li> <li>POE-PD: 48Vdc (nominal) 802.3af/at/bt POE (class 3, 4 or 6)</li> </ul>
Local	AP-503H (E1-E2): Two Ethernet wired network ports (RJ45)  · Auto-sensing link speed (10/100/1000BASE-T) and MDI/MDX  · 802.3az Energy Efficient Ethernet (EEE)
	AP-505H (E1-E4): Four Ethernet wired network ports (RJ45)  • Auto-sensing link speed (10/100/1000BASE-T) and MDI/MDX  • 802.3az Energy Efficient Ethernet (EEE)  • E1 & E2: POE-PSE: 802.3af/at POE output; dual 802.3af (both ports) or single 802.3at (E1 only)

OTHER INTERFACES	
DC power interface	AP-503H:  • 12Vdc (nominal, +/- 5%), accepts 2.1mm/5.5mm center-positive circular plug with 9.5mm length  AP-505H  • 48Vdc (nominal, +/- 5%), accepts 1.35mm/3.5mm center-positive circular plug with 9.5mm length
USB 2.0 host interface (Type A connector)	AP-505H  • Cellular modems  • IOT or other plug-in accessories  • Device battery charging port  • Capable of sourcing up to 1A / 5W to an attached device
Bluetooth Low Energy (BLE5.0) and Zigbee (802.15.4) radio	<ul> <li>BLE: up to 7dBm transmit power (class 1) and -100dBm receive sensitivity (125kbps)</li> <li>Zigbee: up to 7dBm transmit power and -97dBm receive sensitivity (250kbps)</li> <li>Integrated semi-directional antenna with peak gain of 2.5dBi (AP-503H) or 1.2dBi (AP-505H)</li> </ul>
Visual indictors (two multi-color LEDs):	<ul> <li>Power/System status</li> <li>Radio status</li> <li>Local network port status (2x on AP-503H, 4x on AP-505H)</li> <li>POE-PSE status (2x) (applies to AP-505H only)</li> </ul>
Reset button:	Factory reset, LED mode control (normal/off)
Serial console interface	Proprietary, micro-B USB physical jack
Crypto performance	<ul> <li>AP-503H: VPN IPsec throughput performance: 100Mbps or better</li> <li>AP-505H: VPN IPsec throughput performance: 500Mbps or better</li> </ul>

#### POWER SOURCES AND POWER CONSUMPTION Power Sources: The AP • The AP supports direct DC power and Power over Ethernet supports direct DC power · When both DC and POE power sources are available, DC power takes priority over POE and Power over Ethernet • Power sources are sold separately; see the 500H Series Ordering Guide for details AP-505H • When powered by DC or 802.3bt (class 6) POE, the AP will operate without restrictions • When powered by 802.3at (class 4) POE and with the IPM feature disabled, the AP will disable the USB port (only) if POE-PSE is enabled, and support (802.3af) POE-PSE power on E1 only (no PSE on E2) • When powered by 802.3af (class 3) POE with the IPM feature disabled, the AP will disable the USB port and POE-PSE capability · With IPM enabled, the AP will start up without restrictions, but may dynamically apply additional restrictions depending on the POE budget and actual power consumption. The feature specific restrictions and order in which they are applied can be configured Maximum (worst-case) power AP-503H consumption (without USB • DC powered: 10.0W or PSE / max): • POE powered (802.3af): 11.4W AP-505H · DC powered: 14W / 50W • POE powered (802.3bt): 14W / 51W • POE powered (802.3at): 14W / 25.5W • POE powered (802.3af): 13.5W / 13.5W AP-503H: 4.5W (POE) Maximum (worst-case) power AP-505H: 6.2W (POE) consumption in idle mode (without USB or PSE) Maximum (worst-case) power AP-503H: 2.7W (POE) AP-505H: 3.5W (POE) consumption in deep-sleep mode (without USB or PSE)

MECHANICAL SPECIFIC	CHANICAL SPECIFICATIONS	
Dimensions/weight (unit, excluding mount bracket):	AP-503H:  • 86mm (W) x 40mm (D) x 150mm (H)  • 290g	
	AP-505H:  • 86mm (W) x 47mm (D) x 150mm (H)  • 360g	
Dimensions/weight (shipping):	AP-503H:  • 111mm (W) x 54mm (D) x 167mm (H)  • 380g  AP-505H:  • 111mm (W) x 54mm (D) x 167mm (H)  • 450g	
Mounting details	Using one of the (separate orderable) mount kits, the AP can be attached to a single or dual gang wall-box, directly to a wall, or desk mounted. See the 500H Series Ordering Guide for details.	

ENVIRONMENTAL SPECIFICATIONS	
Operating conditions	<ul> <li>Temperature: 0C to +40C / +32F to +104F</li> <li>Humidity: 5% to 93% non-condensing</li> <li>ETS 300 019 class 3.2 environments</li> </ul>
Storage and transportation conditions	<ul> <li>Temperature: -40C to +70C / -40F to +158F</li> <li>Humidity: 5% to 93% non-condensing</li> <li>ETS 300 019 classes 1.2 and 2.3 environments</li> </ul>

RELIABILITY	
Mean Time Between Failure	AP-503H: 1,360 khrs (155 yrs) at +25C operating temperature
(MTBF):	AP-505H: 780khrs (88yrs) at +25C operating temperature.

REGULATORY AND SA	REGULATORY AND SAFETY COMPLIANCE	
Regulatory model numbers	AP-503H (all variants): APINH503     AP-505H (all variants): APINH505	
Minimum Software Release	ArubaOS and Aruba InstantOS 8.7.1.0 (AP-503H) and 8.7.0.0 (AP-505H)	
Regulatory compliance (For more country-specific regulatory information and approvals, please see your Aruba representative.)	<ul> <li>FCC/ISED</li> <li>CE Marked</li> <li>RED Directive 2014/53/EU</li> <li>EMC Directive 2014/30/EU</li> <li>Low Voltage Directive 2014/35/EU</li> <li>IEC/EN 60950</li> <li>EN 60601-1-1, EN60601-1-2</li> <li>IEC/EN 62368-1</li> </ul>	
Certifications	<ul> <li>Wi-Fi Alliance:</li> <li>Wi-Fi CERTIFIED a, b, g, n, ac</li> <li>Wi-Fi CERTIFIED 6 (ax)</li> <li>WPA, WPA2 and WPA3 – Enterprise with CNSA option, Personal (SAE), Enhanced Open (OWE)</li> <li>WMM, WMM-PS, Wi-Fi Vantage, Wi-Fi Agile Multiband</li> <li>Passpoint (release 2)</li> <li>Bluetooth SIG (AP-505H only)</li> <li>Ethernet Alliance (POE)</li> </ul>	

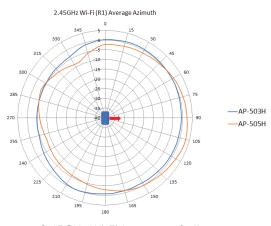
For more and country-specific regulatory information and approvals, please see your Aruba representative. Aruba's hardware limited lifetime warranty.

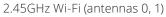
	Maximum transmit power (dBm)	Receiver sensitivity (dBm)	
2 4CUz 902 11b	per transmit chain	per receive chain	
2.4GHz, 802.11b	17	-94	
1Mbps			
11Mbps	17	-86	
2.4GHz, 802.11g	47	00	
6Mbps	17	-89	
54Mbps	16	-73	
2.4GHz, 802.11n HT20			
MCS0	17	-89	
MCS7	15	-69	
2.4GHz, 802.11ax HE20			
MCS0	17	-89	
MCS11	11	-60	
5GHz, 802.11a			
6Mbps	18	-92	
54Mbps	17	-74	
5GHz, 802.11n HT20			
MCS0	18	-91	
MCS7	16	-71	
5GHz, 802.11n HT40			
MCS0	18	-88	
MCS7	16	-78	
5GHz, 802.11ac VHT20			
MCS0	18	-91	
MCS9	14	-67	
5GHz, 802.11ac VHT40			
MCS0	18	-90	
MCS9	14	-64	
5GHz, 802.11ac VHT80			
MCS0	18	-86	
MCS9	14	-63	
5GHz, 802.11ax HE20			
MCS0	18		
MCS11	12	-62	
5GHz, 802.11ax HE40		<u></u>	
MCS0 /	18	-90	
MCS11	12	-59	
5GHz, 802.11ax HE80	12		
MCS0	18	-87	
VICJU	IU	-56	

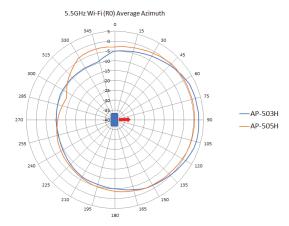
# **ANTENNA PATTERNS**

# Horizontal or azimuth plane (looking at the top of the AP, front facing to the right)

(averaged patterns for all applicable antennas)



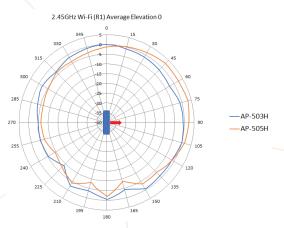




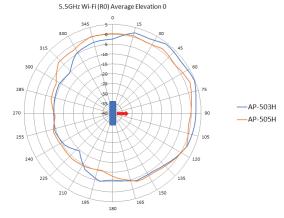
5.5GHz Wi-Fi (antennas 0, 1)

# Vertical (elevation) plane 0 (looking at the side of the AP, front facing to the right)

(averaged patterns for all applicable antennas)



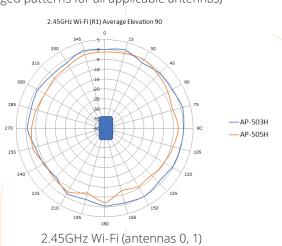
2.45GHz Wi-Fi (antennas 0, 1)

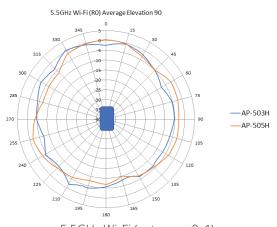


5.5GHz Wi-Fi (antennas 0, 1)

# Vertical (elevation) plane 90 (looking at the front of the AP)

(averaged patterns for all applicable antennas)





5.5GHz Wi-Fi (antennas 0, 1)

Part Number	Description	
Aruba 500H Series Hosp	itality Access Points	
AP-503H access points		
R3V44A	Aruba AP-503H (EG) Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+2 Ethernet	
R3V42A	Aruba AP-503H (IL) Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+2 Ethernet	
R3V40A	Aruba AP-503H (JP) Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+2 Ethernet	
R3V36A	Aruba AP-503H (RW) Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+2 Ethernet	
R3V38A	Aruba AP-503H (US) Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+2 Ethernet	
AP-505H access points		
R3V54A	Aruba AP-505H (EG) Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+4 Ethernet, PSE, USB	
R3V52A	Aruba AP-505H (IL) Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+4 Ethernet, PSE, USB	
R3V50A	Aruba AP-505H (JP) Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+4 Ethernet, PSE, USB	
R3V46A	Aruba AP-505H (RW) Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+4 Ethernet, PSE, USB	
R3V48A	Aruba AP-505H (US) Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+4 Ethernet, PSE, USB	
AP-503H access points –	TAA models	
R3V45A	Aruba AP-503H (EG) TAA Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+2 Ethernet	
R3V43A	Aruba AP-503H (IL) TAA Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+2 Ethernet	
R3V41A	Aruba AP-503H (JP) TAA Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+2 Ethernet	
R3V37A	Aruba AP-503H (RW) TAA Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+2 Ethernet	
R3V39A	Aruba AP-503H (US) TAA Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+2 Ethernet	
AP-505H access points –	TAA models	
R3V55A	Aruba AP-505H (EG) TAA Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+4 Ethernet, PSE, USB	
R3V53A	Aruba AP-505H (IL) TAA Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+4 Ethernet, PSE, USB	
R3V51A	Aruba AP-505H (JP) TAA Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+4 Ethernet, PSE, USB	
R3V47A	Aruba AP-505H (RW) TAA Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+4 Ethernet, PSE, USB	
R3V49A	Aruba AP-505H (US) TAA Dual-radio 802.11ax 2x2 Unified Hospitality AP with 1+4 Ethernet, PSE, USE	

For compatible accessories and spares, see the 500H Series Ordering Guide.



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