Aruba 500H Series Hospitality Access Points

HARDWARE VARIANTS

AP-503H

- Mid-range dual radio Wi-Fi 6 Hospitality AP with 1+2 Ethernet ports

AP-505H

- High-end dual radio Wi-Fi 6 Hospitality AP with 1+4 Ethernet ports, PSE, USB

WI-FI RADIO SPECIFICATIONS

AP type:

- Indoor, dual radio, 5GHz and 2.4GHz 802.11ax 2x2 MIMO

5GHz radio:

- 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 (HE20)
- Note: HE40 operation is supported in 2.4GHz, but uncommon and not recommended for enterprise deployments

Maximum number of associated client devices:

- Up to 256 associated client devices per radio

Maximum number of BSSIDs:

- 16 BSSIDs per radio

Supported frequency bands (country-specific restrictions apply):

- 2.400 to 2.500GHz (ISM) channels 1-13
- 5.150 to 5.250GHz (U-NII-1) channels 36, 40, 44, 48
- 5.250 to 5.350GHz (U-NII-2A) channels 52, 56, 60, 64
- 5.470 to 5.725GHz (U-NII-2C) channels 100, 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

Supported radio technologies:

- 802.11b: Direct-sequence spread-spectrum (DSSS)
- 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM)

- 802.11ax: Orthogonal frequency-division multiple access (OFDMA) with up to 8 resource units

Supported modulation types:

- 802.11b: BPSK, QPSK, CCK
- 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

802.11n high-throughput (HT) support:

- HT20/40

802.11ac very high throughput (VHT) support:

- VHT20/40/80

Supported data rates (Mbps):

- 802.11b: 1, 2, 5.5, 11
- 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
- 802.11n: 6.5 to 300 (MCS0 to MCS15, HT20 to HT40), 400 with 256-QAM
- 802.11ac: 6.5 to 867 (MCS0 to MCS9, NSS = 1 to 2, VHT20 to VHT80), 1,083 with 1024-QAM
- 802.11ax (2.4GHz): 3.6 to 574 (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)

802.11n/ac/ax packet aggregation:

- A-MPDU, A-MSDU

Transmit power:

- Configurable in increments of 0.5 dBm

Maximum (aggregate, conducted total) transmit power (limited by local regulatory requirements):

- 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

Minimum configurable transmit power level:

- 0 dBm (conducted, per chain)

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, range or capacity degradation

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

VPN IPsec throughput performance:

- 500Mbps or better

WI-FI ANTENNAS

AP-503H

- 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 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

AP-503H

- Uplink (E0): 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)
- Local (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)
- DC power interface
    - 12Vdc (nominal, +/- 5%), accepts 2.1mm/5.5mm center-positive circular plug with 9.5mm length

AP-505H

- Uplink (E0): Smart Rate Ethernet wired network port (RJ45)
  - Auto-sensing link speed (100/1000/2500BASE-T) and MDI/MDX
  - 2.5Gbps speed complies with NBase-T and 802.3bz specifications
  - 802.3az Energy Efficient Ethernet (EEE)
  - PoE-PD: 48Vdc (nominal) 802.3af/at/bt POE (class 3, 4 or 6)
- Local (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)
- DC power interface
  - 48Vdc (nominal, +/- 5%), accepts 1.35mm/3.5mm center-positive circular plug with 9.5mm length
- USB 2.0 host interface (Type A connector)
  - Cellular modems
  - IOT or other plug-in accessories
  - Device battery charging port
  - Capable of sourcing up to 1A / 5W to an attached device

Common

- Bluetooth Low Energy (BLE5.0) and Zigbee (802.15.4) radio
  - BLE: up to 7dBm transmit power (class 1) and -100dBm receive sensitivity (125kbps)
  - Zigbee: up to 7dBm transmit power and -97dBm receive sensitivity (250kbps)
  - Integrated semi-directional antenna with peak gain of 2.5dBi (AP-503H) or 1.3dBi (AP-505H)
- Visual indicators (multi-color LEDs):
  - Power/System status
  - Radio status
  - Local network port status (2x on AP-503H, 4x on AP-505H)
  - PoE-PSE status (2x)
- Reset button:
  - Factory reset, LED mode control (normal/off)
- Serial console interface:
  - Proprietary, micro-B USB physical jack

POWER SOURCES AND POWER CONSUMPTION

Power Sources:

- The AP supports direct DC power and Power over Ethernet

- When both DC and PoE power sources are available, DC power takes priority over PoE
- Power sources are sold separately; see the 500H Series Ordering Guide for details

AP-503H

- Maximum (worst-case) power consumption:
  - DC powered: 14W
  - POE powered (802.3af): 10.0W
- Maximum (worst-case) power consumption in idle mode:
  - 4.5W
- Maximum (worst-case) power consumption in deep-sleep mode:
  - 2.7W

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 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 restrictions depending on the PoE budget and actual power consumption. The specific restrictions and order in which they are applied can be configured.
- Maximum (worst-case) power consumption (without USB or PSE / max):
  - 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
- Maximum (worst-case) power consumption in idle mode (without USB or PSE):
  - 6.2W
- Maximum (worst-case) power consumption in deep-sleep mode (without USB or PSE):
  - 3.5W

MECHANICAL

AP-503H

- Dimensions/weight (unit, excluding mount bracket):
  - 86mm (W) x 40mm (D) x 150mm (H)
  - Weight: 290g
- Dimensions/weight (unit in shipping box):

- 111mm (W) x 54mm (D) x 167mm (H)
- Weight: 380g

AP-505H

- Dimensions/weight (unit, excluding mount bracket):
  - 86mm (W) x 47mm (D) x 150mm (H)
  - Weight: 360g
- Dimensions/weight (unit in shipping box):
  - 111mm (W) x 54mm (D) x 167mm (H)
  - Weight: 450g

ENVIRONMENTAL

Operating:

- Temperature: 0°C to +40°C / 32°F to +104°F
- Humidity: 5% to 93% non-condensing
- ETS 300 019 class 3.2 environments

Storage and transportation:

- Temperature: -40°C to +70°C / -40°F to +158°F
- Humidity: 5% to 93% non-condensing
- ETS 300 019 classes 1.2 and 2.3 environments

RELIABILITY

AP-503H

- Mean Time Between Failure (MTBF): 1,360 khrs (155 yrs) at +25C operating temperature

AP-505H

- Mean Time Between Failure (MTBF): 780 khrs (88 yrs) at +25C operating temperature

REGULATORY COMPLIANCE

Regulatory model numbers:

- AP-503H (all variants):
  - APINH503
- AP-505H (all variants):
  - APINH505

Regulatory compliance:

- FCC/ISED
- CE Marked

- RED Directive 2014/53/EU
- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- IEC/EN 60950
- EN 60601-1-1, EN60601-1-2
- IEC/EN 62368-1

For more and country-specific regulatory information and approvals, please see your Aruba representative.

CERTIFICATIONS

Certifications:

- Wi-Fi Alliance:
  - Wi-Fi CERTIFIED a, b, g, n, ac
  - Wi-Fi CERTIFIED 6 (ax)
  - WPA, WPA2 and WPA3 – Enterprise with CNSA option, Personal (SAE), Enhanced Open (OWE)
  - WMM, WMM-PS, Wi-Fi Vantage, Wi-Fi Agile Multiband
  - Passpoint (release 2)
- Bluetooth SIG (AP-505H only)
- Ethernet Alliance (PoE)

MINIMUM OPERATING SYSTEM SOFTWARE VERSIONS

ArubaOS and Aruba InstantOS 8.7.1.0 (AP-503H) and 8.7.0.0 (AP-505H)

WARRANTY

Limited lifetime warranty