QuickSpecs

Overview

HPE Aruba Networking 500 Series Campus Access Points

Cost-Effective Wi-Fi 6 (802.11ax) For Medium-Density Indoor Environments

These affordable Wi-Fi 6 access points provide high-performance connectivity for any organization experiencing growing numbers of mobile, IoT and mobility requirements. With a maximum aggregate data rate of 1.77 Gbps (1.774 Gbps), they deliver the speed and reliability needed for venues and workplaces such as schools, midsize offices and retailers.

HPE Aruba Networking 500 Series Campus Access Points

Key Features

- 1.77 Gbps of maximum throughput
- 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

Hewlett Packard Enterprise

Standard Features

Incredible Efficiency
The HPE Aruba Networking 500 Series APs are also 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), bi-directional multi-user MIMO and cellular optimization. With up to 2 spatial streams (2SS) and 80MHz channel bandwidth (HE80), the HPE Aruba Networking 500 Series provides groundbreaking wireless capabilities for budget-conscious deployments.

Advantages of OFDMA
This capability allows HPE Aruba Networking'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.

HPE Aruba Networking Air Slice™ For Extended Application Assurance
Initially, APs in controller-less mode (Instant) can provide SLA-grade performance by allocating radio resources, such as time, frequency, and spatial streams, to specific traffic types. By combining HPE Aruba Networking's Policy Enforcement Firewall (PEF) and Layer 7 deep packet inspection (DPI) to identify user roles and applications, the APs will dynamically allocate the bandwidth needed. Non-Wi-Fi 6 clients can also benefit.

Air Slice™ for APs uses HPE Aruba Networking Central for management. Controller-based APs will be supported in a future software release.

Multi-User MIMO (MU-MIMO)
The HPE Aruba Networking 500 Series AP supports downlink MU-MIMO just like Wi- Fi 5 (802.11ac Wave 2) APs. The added benefit is the ability to multiply the number of clients that can now send traffic, thus optimizing client-to-AP spatial stream diversity.

Wi-Fi 6 And MU-MIMO Aware Client Optimization
HPE Aruba Networking's patented AI-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.

HPE Aruba Networking 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)
HPE Aruba Networking 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.

Green AP Energy Efficiency
HPE Aruba Networking Wi-Fi 6 APs utilize analytics from NetInsight to automatically transition in and out of a sleep mode based on client density.

IoT Platform Capabilities
Like all HPE Aruba Networking Wi-Fi 6 APs, the HPE Aruba Networking 500 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 HPE Aruba Networking 500 Series as an IoT platform, which eliminates the need for an overlay infrastructure and additional IT resources.

Standard Features

HPE 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..

HPE Aruba Networking Secure Infrastructure

The HPE Aruba Networking 500 Series includes components of HPE Aruba Networking's 360 Secure Fabric to help protect user authentication and wireless traffic. Select capabilities include the following.

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. Requires ClearPass Policy Manager.

VPN Tunnels

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

Trusted Platform Module (TPM)

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

Simple and Secure Access

To simplify policy enforcement, the HPE Aruba Networking 500 Series uses HPE Aruba Networking's policy enforcement firewall (PEF) feature 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 dynamic segmentation.

High-Density Connectivity

Each 500 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.

Flexible Operation and Management

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

Controller-Less (Instant) Mode

In controllerless mode, one AP serves as a virtual controller for the entire network.

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.

Management Options

Available management solutions include HPE Aruba Networking Central (cloud-managed) or HPE Aruba Networking Management Software (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 HPE Aruba Networking Central or AirWave. This reduces deployment time, centralizes configuration, and helps manage inventory.ity, APs tunnel all traffic to a mobility controller for centrally managed traffic forwarding and segmentation, data encryption, and policy enforcement.

Standard Features

Additional Wi-Fi Features

Each AP also includes the following standards-based technologies:

- Transmit beamforming (TxBF) increases signal reliability and range
- Passpoint Wi-Fi (Release 2) (Hotspot 2.0) offers seamless cellular-to-Wi-Fi carryover for guests
- Dynamic Frequency Selection (DFS) optimizes use of available RF spectrum
- Maximum Ratio Combining (MRC) improves receiver performance
- Cyclic Delay/Shift Diversity (CDD/CSD) provides greater downlink RF performance
- Space-Time Block Coding increases range and improved reception
- Low-Density Parity Check (LDPC) provides a high-efficiency error correction for increased throughput

Mechanical Specifications

- Dimensions/weight (AP-505; unit, excluding mount bracket):
    - 160mm (W) x 161mm (D) x 37mm (H) 500g
- Dimensions/weight (AP-505; shipping):
    - 193mm (W) x 183mm (D) x 63mm (H) 645g
- Mounting details: A mounting bracket has been pre-installed on the back of the AP. This bracket is used to secure the AP to any of the mount kits (sold separately); see the HPE Aruba Networking 500 Series Ordering Guide for details.

Configuration Information

BTO Models

Remarks	Description	SKU
	505 Internal Antenna Access Points	
Notes:	Add Mount Kit	
	HPE Aruba Networking AP-505 (EG) Dual Radio 2x2 802.11ax Internal Antennas Unified Campus AP	R2H25A
	HPE Aruba Networking AP-505 (IL) Dual Radio 2x2 802.11ax Internal Antennas Unified Campus AP	R2H26A
	HPE Aruba Networking AP-505 (JP) Dual Radio 2x2 802.11ax Internal Antennas Unified Campus AP	R2H27A
8	HPE Aruba Networking AP-505 (RW) Dual Radio 2x2 802.11ax Internal Antennas Unified Campus AP	R2H28A
9	HPE Aruba Networking AP-505 (US) Dual Radio 2x2 802.11ax Internal Antennas Unified Campus AP	R2H29A
	505 Internal Antenna Access Points - 10-Pack Eco-Friendly Bundle	
Notes:	Add 10 mount kits; eco-pack includes one JY728A console adapter cable	
	HPE Aruba Networking AP-505 (RW) Dual Radio 2x2 Wi-Fi 6 10-pack Campus Access Point	S3J27A
	HPE Aruba Networking AP-505 (US) Dual Radio 2x2 Wi-Fi 6 10-pack Campus Access Point	S3J28A
	504 External Antenna Access Points	
Notes:	Add Mount Kit, Antenas	
	HPE Aruba Networking AP-504 (EG) Dual Radio 2x2 802.11ax External Antennas Unified Campus AP	R2H19A
	HPE Aruba Networking AP-504 (IL) Dual Radio 2x2 802.11ax External Antennas Unified Campus AP	R2H20A
	HPE Aruba Networking AP-504 (JP) Dual Radio 2x2 802.11ax External Antennas Unified Campus AP	R2H21A
	HPE Aruba Networking AP-504 (RW) Dual Radio 2x2 802.11ax External Antennas Unified Campus AP	R2H22A
	HPE Aruba Networking AP-504 (US) Dual Radio 2x2 802.11ax External Antennas Unified Campus AP	R2H23A
	505 Internal Antenna Access Points - TAA Models	
Notes:	Add Mount Kit	
	HPE Aruba Networking AP-505 (EG) TAA Dual Radio 2x2 802.11ax Internal Antennas Unified Campus AP	R2H35A
	HPE Aruba Networking AP-505 (IL) TAA Dual Radio 2x2 802.11ax Internal Antennas Unified Campus AP	R2H36A
	HPE Aruba Networking AP-505 (JP) TAA Dual Radio 2x2 802.11ax Internal Antennas Unified Campus AP	R2H37A
	HPE Aruba Networking AP-505 (RW) TAA Dual Radio 2x2 802.11ax Internal Antennas Unified Campus AP	R2H38A
	HPE Aruba Networking AP-505 (US) TAA Dual Radio 2x2 802.11ax Internal Antennas Unified Campus AP	R2H39A
	504 External Antenna Access Points - TAA Models	
Notes:	Add Mount Kit, Antenas	
	HPE Aruba Networking AP-504 (EG) TAA Dual Radio 2x2 802.11ax External Antennas Unified Campus AP	R2H30A
	HPE Aruba Networking AP-504 (IL) TAA Dual Radio 2x2 802.11ax External Antennas Unified Campus AP	R2H31A
	HPE Aruba Networking AP-504 (JP) TAA Dual Radio 2x2 802.11ax External Antennas Unified Campus AP	R2H32A
	HPE Aruba Networking AP-504 (RW) TAA Dual Radio 2x2 802.11ax External Antennas Unified Campus AP	R2H33A
	HPE Aruba Networking AP-504 (US) TAA Dual Radio 2x2 802.11ax External Antennas Unified Campus AP	R2H34A

Configuration Information

Configuration Rules

Rule#	Description	SKU
8	If the ordered qty of this AP is greater than or equal to 10, then the default will be the following Eco-Friendly 10-Pack(s) with the remainder as individual packs. Allow user to change the full quantity easily back to individual packs;	
	HPE Aruba Networking AP-505 (RW) Dual Radio 2x2 Wi-Fi 6 10-pack Campus Access Point	S3J27A
	Display Note: If ordering greater than or equal to qty10 of this AP, consider ordering the Eco-Friendly 10-Packs(S3J27A). Please revert back to single pack if individual sale is desired.	
9	If the ordered qty of this AP is greater than or equal to 10, then the default will be the following Eco-Friendly 10-Pack(s) with the remainder as individual packs. Allow user to change the full quantity easily back to individual packs;	
	HPE Aruba Networking AP-505 (US) Dual Radio 2x2 Wi-Fi 6 10-pack Campus Access Point	S3J28A
	Display Note: If ordering greater than or equal to qty10 of this AP, consider ordering the Eco-Friendly 10-Packs(S3J28A). Please revert back to single pack if individual sale is desired.	
Notes:	OCA Only Model Selection Form - HPE Aruba Networking > Wireless > Access Points > Campus: HPE Aruba Networking 500 Series Campus Access Points	

Mount Accesories

Notes: For 504, 505 Series Std (Min 0 // max 99) User Selection (min 0 // max 99)

Remarks	Description	SKU
	AP Mount Kits	
	HPE Aruba Networking AP-MNT-A Campus AP Type A Suspended Ceiling Rail Flat 9/16 Mount Bracket Kit	R3J15A
*	HPE Aruba Networking AP-MNT-MP10-A Campus AP 10-Pack 9/16 Flat Ceiling Rail Mount Bracket Kit	JZ370A
	HPE Aruba Networking AP-MNT-B Campus AP Type B Suspended Ceiling Rail Flat 15/16 Mount Bracket Kit	R3J16A
*	HPE Aruba Networking AP-MNT-MP10-B Campus AP 10-Pack 15/16 Flat Ceiling Rail Mount Bracket Kit	Q9G69A
	HPE Aruba Networking AP-MNT-C Campus AP Type C Suspended Ceiling Rail 9/16 Profile Mnt Bracket Kit	R3J17A
*	HPE Aruba Networking AP-MNT-MP10-C Campus AP 10-Pack Profile 9/16 Ceiling Rail Mount Bracket Kit	Q9G70A
	HPE Aruba Networking AP-MNT-D Campus AP Type D Solid Surface Mount Bracket Kit	R3J18A
*	HPE Aruba Networking AP-MNT-MP10-D Campus AP 10-Pack Solid Surface Mount Bracket Kit	Q9G71A
	HPE Aruba Networking AP-MNT-E Campus AP Type E Wall-Box Mount Bracket Kit	R3J19A
*	HPE Aruba Networking AP-MNT-MP10-E Campus AP 10-Pack Wall-box Mount Bracket Kit	R1C72A
	HPE Aruba Networking AP-MNT-U Campus Access Point Type U Universal Mount Bracket Kit	S4K79A
*	HPE Aruba Networking AP-MNT-MP10-U Campus AP Universal 10-pack Mount Bracket Kit	S0J40A
*	HPE Aruba Networking AP-MNT-MP10-X Campus AP 10-Pack Mount Adapter Kit	R3T20A
Notes:	– *Kit contains mounts for 10 access points	
	– Access Points do not include a Mount. Qty 1 Mount kits should be selected	

Antennas

For 504 Std (Min 0 // max 1) User Selection (min 0 // max 1)

	Description	SKU
*	HPE Aruba Networking AP-ANT-311 Direct-Mount RP-SMA Tri-Band 1x1 Omni Dipole Antenna	S1F79A
*	HPE Aruba Networking AP-ANT-312 Direct-Mount RP-SMA Tri-Band 1x1 Low-Profile Omni Dipole Antenna	S1F80A
*	HPE Aruba Networking AP-ANT-313 Cabled RP-SMA Tri-Band 1x1 Omni Dipole Antenna	S1F81A
	HPE Aruba Networking AP-ANT-320 Cabled RP-SMA Tri-Band 2x2 Downtilt Omni Ceiling Antenna	S1F85A

Configuration Information

	HPE Aruba Networking AP-ANT-325 Cabled RP-SMA Tri-Band 2x2 Medium Gain Directional Panel Antenna	S1F86A
	HPE Aruba Networking AP-ANT-328 Cabled RP-SMA Tri-Band 2x2 High Gain Directional Panel Antenna	S1F87A

Notes:
- *Must select Qty 0 or Qty 2
- AP-ANT-1W, and AP-ANT-20W are usually direct connect to the chassis
- AP-ANT-25A,AP-ANT-28 ship with hardware for flush mount to a flat surface
- AP-504 has 2x RPSMA female, concurrent dual-band connections

Antenna Mount Kits

For 504 Series Std (Min 0 // max 1) User Selection (min 0 // max 1)

2	HPE Aruba Networking AP-ANT-MNT-4 AZ/EL Adjustable Antennas Pole/Wall Mount Kit	JW021A
3	HPE Aruba Networking AP-ANT-MNT-U Universal AZ/EL Adjustable Antenna Pole Wall Mount Kit	S1J09A

Configuration Rules

Rule#	Description	SKU
1	Compatible with JW012A	
2	Compatible with S0A66A	
3	Compatible with S1F86A and S1F87A	

Notes:
- AP-ANT-MNT-3 compatible with AP-ANT-25A and AP-ANT-28
- AP-ANT-MNT-4 compatible with AP-ANT-28a
- AP-ANT-MNT-U compatible with AP-ANT-325 and AP-ANT-328

Power Options

For 504, 505 Series Std (Min 0 // max 1) User Selection (min 0 // max 1)

	HPE Aruba Networking AP-AC2-12B 12V/48W AC/DC Desktop Style Power Adapter with 2.1/5.5mm Connector	R3K00A
	HPE Aruba Networking AP-POE-AFGE 1-Port GbE 802.3af 15.4W Midspan Injector	R6P68A
	HPE Aruba Networking AP-POE-ATSR 1-Port Smart Rate 802.3at 30W Midspan Injector	R6P67A

Notes:
- If this Power Supply is selected, bring in (Min 1 // Max 1) Localized power cord based on the HPE Aruba Networking Localization Menu
- Most devices are PoE powered from switch so these are optional

Accessories

Snap-on Covers

For 505 Series Std (Min 0 // max 99) User Selection (min 0 // max 99)

	HPE Aruba Networking AP-MNT-MP10-B1 Campus AP 10-Pack 15/16 Adj Flat Ceiling Rail Mount Bracket Kit	R6T34A
	HPE Aruba Networking AP-505-CVR-20 20pk for AP-505 White Non-glossy Snap-On Covers	R2H24A

Notes: Kit contains 20 optional snap-on covers

Other Accessories

For 504, 505 Series Std (Min 0 // max 99) User Selection (min 0 // max 99)

	HPE Aruba Networking AP-MOD-SERU Micro-USB TTL3.3V to RJ45 RS232 AP Console Adapter Module	R6Q99A
	HPE Aruba Networking AP-CBL-SERU Micro-USB TTL3.3V to USB2.0 AP Console Adapter Cable	JY728A

Configuration Information

Software

Central

Cloud Services / Access Point Foundation Subscriptions

2, 8	HPE Aruba Networking Central AP Foundation 1-year Subscription E-STU	Q9Y58AAE
2, 8	HPE Aruba Networking Central AP Foundation 3 year Subscription E-STU	Q9Y59AAE
2, 8	HPE Aruba Networking Central AP Foundation 5 year Subscription E-STU	Q9Y60AAE
2, 8	HPE Aruba Networking Central AP Foundation 7 year Subscription E-STU	Q9Y61AAE
2, 8	HPE Aruba Networking Central AP Foundation 10 year Subscription E-STU	Q9Y62AAE

Cloud Services / Access Point Advanced Subscriptions

2, 8	HPE Aruba Networking Central AP Advanced 1 year Subscription E-STU	Q9Y63AAE
2, 8	HPE Aruba Networking Central AP Advanced 3 year Subscription E-STU	Q9Y64AAE
2, 8	HPE Aruba Networking Central AP Advanced 5 year Subscription E-STU	Q9Y65AAE
2, 8	HPE Aruba Networking Central AP Advanced 7 year Subscription E-STU	Q9Y66AAE
2, 8	HPE Aruba Networking Central AP Advanced 10 year Subscription E-STU	Q9Y67AAE

On-Prem Services / Access Point Foundation Subscriptions

3, 8	HPE Aruba Networking Central on Prem AP Foundation 1 year Subscription E-STU	R6U63AAE
3, 8	HPE Aruba Networking Central on Prem AP Foundation 3 year Subscription E-STU	R6U64AAE
3, 8	HPE Aruba Networking Central on Prem AP Foundation 5 year Subscription E-STU	R6U65AAE
3, 8	HPE Aruba Networking Central on Prem AP Foundation 7 year Subscription E-STU	R6U66AAE
3, 8	HPE Aruba Networking Central on Prem AP Foundation 10 year Subscription E-STU	R6U67AAE

FedRAMP Services / Access Point Advanced Subscriptions

6, 8	HPE Aruba Networking Central AP Advanced Government 1-year Subscription E-STU	R8K84AAE
6, 8	HPE Aruba Networking Central AP Advanced Government 3-year Subscription E-STU	R8K85AAE
6, 8	HPE Aruba Networking Central AP Advanced Government 5-year Subscription E-STU	R8K86AAE
6, 8	HPE Aruba Networking Central AP Advanced Government 7-year Subscription E-STU	R8K87AAE
6, 8	HPE Aruba Networking Central AP Advanced Government 10-year Subscription E-STU	R8K88AAE

Configuration Rules

Rule #	Description	SKU
2	Add the Central Cloud Skus to the HPE Aruba Networking Catalog as Standalone: HPE Aruba Networking > Network Management > Central > Cloud Services	
3	Add the Central On-Prem Skus to the HPE Aruba Networking Catalog as Standalone: HPE Aruba Networking > Network Management > Central > On-Prem Services	
6	Add the Central FedRAMP Service Skus to the HPE Aruba Networking Catalog as Standalone: HPE Aruba Networking > Network Management > Central > FedRAMP	
8	For OCA: When configuring the following AP 10-Pack, selection condition for this Subscription should be 0(default) or 10	
	HPE Aruba Networking AP-503 (RW) 10-Pack Dual Radio 2x2:2 Wi-Fi 6 Campus Access Point	S1E83A
	HPE Aruba Networking AP-503 (US) 10-Pack Dual Radio 2x2:2 Wi-Fi 6 Campus Access Point	S1E84A

As-a-Service

Cloud Services / Access Point Foundation Subscriptions

7	HPE Aruba Networking Central AP Foundation 1 year Subscription SaaS	Q9Y58AAS
7	HPE Aruba Networking Central AP Foundation 3 year Subscription SaaS	Q9Y59AAS
7	HPE Aruba Networking Central AP Foundation 5 year Subscription SaaS	Q9Y60AAS
7	HPE Aruba Networking Central AP Foundation 7 year Subscription SaaS	Q9Y61AAS
7	HPE Aruba Networking Central AP Foundation 10 year Subscription SaaS	Q9Y62AAS

Configuration Information

Cloud Services / Access Point Advanced Subscriptions

7	HPE Aruba Networking Central AP Advanced 1 year Subscription SaaS	Q9Y63AAS
7	HPE Aruba Networking Central AP Advanced 3 year Subscription SaaS	Q9Y64AAS
7	HPE Aruba Networking Central AP Advanced 5 year Subscription SaaS	Q9Y65AAS
7	HPE Aruba Networking Central AP Advanced 7 year Subscription SaaS	Q9Y66AAS
7	HPE Aruba Networking Central AP Advanced 10 year Subscription SaaS	Q9Y67AAS

Configuration Rules

Rule#	Description	SKU
7	For IRIS reference only. No action required for OCX and Clic	

Technical Specifications

RF performance table		
Band, rate	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
2.4GHz, 802.11b		
1Mbps	18	-98
11Mbps	18	-90
2.4GHz, 802.11g		
6Mbps	18	-93
54Mbps	18	-76
2.4GHz, 802.11n HT20		
MCS0	18	-93
MCS7	16	-75
2.4GHz, 802.11ax HE20		
MCS0	18	-93
MCS11	14	-62
5GHz, 802.11a		
6Mbps	18	-92
54Mbps	18	-75
5GHz, 802.11n HT20		
MCS0	18	-92
MCS7	16	-74
5GHz, 802.11n HT40		
MCS0	18	-90
MCS7	16	-71
5GHz, 802.11ac VHT20		
MCS0	18	-92
MCS9	16	-69
5GHz, 802.11ac VHT40		
MCS0	18	-90
MCS9	16	-65
5GHz, 802.11ac VHT80		
MCS0	18	-87
MCS9	16	-62
5GHz, 802.11ax HE20		
MCS0	18	-93
MCS11	14	-62
5GHz, 802.11ax HE40		
MCS0	18	-90
MCS11	14	-59
5GHz, 802.11ax HE80		
MCS0	18	-87
MCS11	14	-56

Technical Specifications

Wi-Fi Radio Specifications

- AP type: Indoor, dual radio, 5GHz and 2.4GHz 802.11ax 2x2 MIMO
- 5GHz radio: Two spatial stream Single User (SU) MIMO for up to 1.2Gbps wireless data rate with individual 2SS HE80 802.11ax client devices, or with two 1SS HE80 802.11ax MU-MIMO capable client devices simultaneously
- 2.4GHz radio: Two spatial stream Single User (SU) MIMO for up to 574Mbps wireless data rate with individual 2SS HE40 802.11ax client devices or with two 1SS HE40 802.11ax MU-MIMO capable client devices simultaneously
- Support for up to 256 associated client devices per radio, and up to 16 BSSIDs per radio
- Supported frequency bands (country-specific restrictions apply):
    - 2.400 to 2.4835GHz
    - 5.150 to 5.250GHz
    - 5.250 to 5.350GHz
    - 5.470 to 5.725GHz
    - 5.725 to 5.850GHz
- Available channels: Dependent on configured regulatory domain
- 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
- 802.11ax high efficiency (HE) support: HE20/40/80
- 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 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: +21 dBm (18dBm per chain) 5 GHz band: +21 dBm (18 dBm per chain)
      Notes: Conducted transmit power levels exclude antenna gain. For total (EIRP) transmit power, add antenna gain.
- Advanced Cellular Coexistence (ACC) minimizes the impact of interference from cellular networks
- Transmit beamforming (TxBF) increases signal reliability and range
- Passpoint Wi-Fi (Release 2) (Hotspot 2.0) offers seamless cellular-to-Wi-Fi carryover for guests
- Dynamic Frequency Selection (DFS) optimizes use of available RF spectrum
- Maximum Ratio Combining (MRC) improves receiver performance
- Cyclic Delay/Shift Diversity (CDD/CSD) provides greater downlink RF performance
- Space-Time Block Coding increases range and improved reception
- Low-Density Parity Check (LDPC) provides a high-efficiency error correction for increased throughput

Technical Specifications

Other Interfaces

- E0: Ethernet wired network port (RJ-45)
    - Auto-sensing link speed (10/100/1000BASE-T) and MDI/MDX
    - POE-PD: 48Vdc (nominal) 802.3af/at POE (class 3 or 4)
    - 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
- USB 2.0 host interface (Type A connector)
    - Capable of sourcing up to 1A / 5W to an attached device
- Bluetooth Low Energy (BLE5.0) and Zigbee (802.15.4) radio
    - BLE: up to 7dBm transmit power (class 1) and -93dBm receive sensitivity (1Mbps)
    - Zigbee: up to 6dBm transmit power and -96dBm receive sensitivity
    - Integrated vertically polarized omnidirectional antenna with roughly 30 degrees downtilt and peak gain of 3.3dBi
- Visual indictors (two multi-color LEDs): for System and Radio status
- Reset button: factory reset, LED mode control (normal/off)
- Serial console interface (proprietary, micro-B USB physical jack)
- Kensington security slot

Wi-Fi Antennas

- AP-504: Two (female) RP-SMA connectors for external dual band antennas (A0 and A1, corresponding with radio chains 0 and 1). Worst-case internal loss between radio interface and external antenna connectors (due to diplexing circuitry): 0.7dB in 2.4GHz and 1.3dB in 5GHz.
- AP-505: Two integrated dual-band downtilt omni-directional antennas for 2x2 MIMO with peak antenna gain of 4.9dBi in 2.4GHz and 5.7dBi in 5GHz. Built-in antennas are optimized for horizontal ceiling mounted orientation of the AP. The downtilt angle for maximum gain is roughly 30 degrees.
    - Combining the patterns of each of the antennas of the MIMO radios, the peak gain of the combined, average pattern is 4.3dBi in 2.4GHz and 5.6dBi in 5GHz..

Environmental Specifications

- Operating conditions
    - Temperature: 0C to +50C / +32F to +122F
    - Humidity: 5% to 93% non-condensing
    - AP is plenum rated for use in air-handling spaces
    - ETS 300 019 class 3.2 environments
- Storage and transportation conditions
    - Temperature: -40C to +70C / -40F to +158F
    - Humidity: 5% to 93% non-condensing
    - ETS 300 019 classes 1.2 and 2.3 environments

Reliability

Mean Time Between Failure (MTBF): 1.3Mhrs (148yrs) at +25C operating temperature.

Technical Specifications

Power Sources and Power Consumption
- The AP supports direct DC power and Power over Ethernet (POE)
- When both DC and POE power sources are available, DC power takes priority over POE
- Power sources are sold separately; see the HPE Aruba Networking 500 Series Ordering Guide for details
- When powered by DC or 802.3at (class 4) POE, the AP will operate without restrictions.
- When powered by 802.3af (class 3) POE and with the IPM feature disabled, the AP will disable the USB port. In the same configuration but with IPM enabled, the AP will start up in unrestricted mode, but may dynamically apply restrictions depending on the POE budget and actual power. The feature restrictions and order can be programmed.
- Maximum (worst-case) power consumption (without / with a USB device attached)::
    - DC powered: 8.9W / 14.2W.
    - POE powered (802.3at): 11.0W / 16.5W.
    - POE powered (802.3af): 11.0W / 13.5W.
    - This assumes that up to 5W is supplied to the attached USB device.
- Maximum (worst-case) power consumption in idle mode: 4.3W (DC) or 6.1W (POE).
- Maximum (worst-case) power consumption in deep-sleep mode: 1.7W (DC) or 3.3W (POE).

Regulatory Compliance
- FCC/ISED
- CE Marked
- RED Directive 2014/53/EU
- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- UL/IEC/EN 60950
- EN 60601-1-1, EN60601-1-2

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

Regulatory Model Numbers
- AP-504: APIN0504
- AP-505: APIN0505

Certifications
- UL2043 plenum rating
- 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, W-Fi Agile Multiband
    - Wi-Fi Location
    - Passpoint (release 2)
- Bluetooth SIG
- Ethernet Alliance (POE, PD device, class 4)

Minimum HPE Aruba Networking OS Release
- HPE Aruba Networking OS
- HPE Aruba Networking InstantOS 8.6.0.0

Summary of Changes

Date	Version History	Action	Description of Change
03-Feb-2025	Version 15	Changed	Configuration Information section was updated
16-Dec-2024	Version 14	Changed	Configuration Information section was updated
02-Dec-2024	Version 13	Changed	Overview and Standard Features sections were updated.
01-Jul-2024	Version 12	Changed	Configuration Information section was updated
04-Dec-2023	Version 11	Changed	Series name was updated.
05-Sep-2023	Version 10	Changed	Configuration Information section was updated
07-Aug-2023	Version 9	Changed	Configuration Information section was updated.
01-May-2023	Version 8	Changed	Configuration Information section was updated, new SKU added.
01-Aug-2022	Version 7	Changed	Configuration Information was updated.
05-Jul-2022	Version 6	Changed	Configuration Information was updated and new SKU were added.
15-Mar-2021	Version 5	Changed	SKUs were added in Configuration Information section.
08-Sep-2020	Version 4	Changed	Configuration Information was updated. SKU description were updated New SKU was added.
01-Jun-2020	Version 3	Changed	Configuration Information was updated. SKU description were updated New SKU was added.
04-Nov-2019	Version 2	Changed	Configuration Information section was updated. New SKUs were added.
14-Oct-2019	Version 1	New	New QuickSpecs

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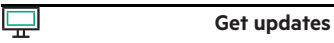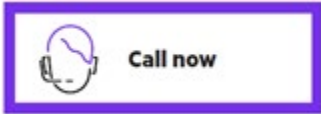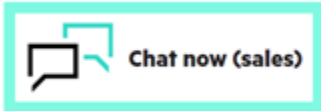
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