

Overview

Aruba 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.



Aruba 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
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Standard Features

Incredible Efficiency

The 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 500 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.

Aruba 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 Aruba'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 Aruba Central for management. Controller-based APs will be supported in a future software release.

Multi-User MIMO (MU-MIMO)

The 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

Aruba'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.

Aruba 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.

Green AP Energy Efficiency

Aruba Wi-Fi 6 APs utilize analytics from NetInsight to automatically transition in and out of a sleep mode based on client density. Learn more in the [Green AP At-A-Glance](#).

IoT Platform Capabilities

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



Standard Features

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..

Aruba Secure Infrastructure

The Aruba 500 Series includes components of Aruba'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 Aruba 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 Aruba APs have an installed TPM for secure storage of credentials and keys, and boot code.

Simple and Secure Access

To simplify policy enforcement, the Aruba 500 Series uses Aruba'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 Aruba 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 Aruba 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. Learn more about Instant mode in [this technology brief](#).

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](#).



Standard Features

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. 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](#).

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
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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 500 Series Ordering Guide for details.
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Configuration Information

Step 1: Select AP Model

Remarks	Description	SKU
	505 Internal Antenna Access Points	
Notes:	Add Mount Kit	
	Aruba AP-505 (EG) Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP	R2H25A
	Aruba AP-505 (IL) Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP	R2H26A
	Aruba AP-505 (JP) Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP	R2H27A
	Aruba AP-505 (RW) Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP	R2H28A
	Aruba AP-505 (US) Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP	R2H29A
	504 External Antenna Access Points	
Notes:	Add Mount Kit, Antenas	
	Aruba AP-504 (EG) Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP	R2H19A
	Aruba AP-504 (IL) Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP	R2H20A
	Aruba AP-504 (JP) Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP	R2H21A
	Aruba AP-504 (RW) Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP	R2H22A
	Aruba AP-504 (US) Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP	R2H23A
	505 Central Managed Internal Antenna Access Points	
	Aruba CM AP-505 (RW) Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP	R2H28ACM
	Aruba CM AP-505 (US) Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP	R2H29ACM
	505 Internal Antenna Access Points - TAA Models	
Notes:	Add Mount Kit	
	Aruba AP-505 (EG) TAA Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP	R2H35A
	Aruba AP-505 (IL) TAA Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP	R2H36A
	Aruba AP-505 (JP) TAA Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP	R2H37A
	Aruba AP-505 (RW) TAA Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP	R2H38A
	Aruba AP-505 (US) TAA Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP	R2H39A
	504 External Antenna Access Points - TAA Models	
Notes:	Add Mount Kit, Antenas	
	Aruba AP-504 (EG) TAA Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP	R2H30A
	Aruba AP-504 (IL) TAA Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP	R2H31A
	Aruba AP-504 (JP) TAA Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP	R2H32A
	Aruba AP-504 (RW) TAA Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP	R2H33A
	Aruba AP-504 (US) TAA Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP	R2H34A



Configuration Information

Step 2: Add Powering Accessories (Optional)

Remarks	Description	SKU
	Select one of the following:	
Notes:	Add AC power cord Most devices are PoE powered from switch so these are optional	
	Compatible with 504 and 505+F63 AP models	
	AP-AC-12V30B 12V/30W AC/DC Desktop Style 2.1/5.5/9.5mm Circular 90 Deg Plug DoE Level VI Adapter	JX990A
	Aruba PD-3510G-AC 15.4W 802.3af PoE 10/100/1000Base-T Ethernet Midspan Injector	JW627A
	Aruba PD-9001GR-AC 30W 802.3at PoE+ 10/100/1000 Ethernet Indoor Rated Midspan Injector	JW629A
	AP-AC2-12B 12V/48W AC/DC desktop style power adapter with 2.1/5.5mm connector	R3K00A
	AP-POE-ATSR 1-Port Smart Rate 802.3at 30W midspan injector	R6P67A
	AP-POE-AFGE 1-Port GbE 802.3af 15.4W midspan injector	R6P68A
	Compatible with 505C AP models	
	Aruba CM AP-AC-12V30B 12V/30W AC/DC desktop style power adapter with type B connector	JX990ACM
	Aruba CM AP-AC2-12B 12V/48W AC/DC desktop style power adapter with 2.1/5.5mm connector	R3K00ACM
	Aruba CM PD-3501G-AC 15.4W 802.3af PoE 10/100/1000Base-T Ethernet Midspan Injector	JW627ACM
	Aruba CM PD-9001GR-AC 802.3at PoE+ 10/100/1000 Ethernet Indoor Rated Midspan Injector	JW629ACM
	Select three-prong AC power cord for injector or AC adapter	
	PC-AC-ARG AC power cord 250V/10A 1.8m C13 to IRAM 2073	JW113A
	PC-AC-AUS AC power cord 250V/10A 1.8m C13 to AS3112	JW114A
	PC-AC-BR AC power cord 250V/10A 1.8m C13 to NBR 14136	JW115A
	PC-AC-CHN AC power cord 250V/10A 1.8m C13 to GB2099	JW116A
	PC-AC-DEN AC power cord 250V/10A 1.8m C13 to AFSNIT 107-2-D1	JW117A
	PC-AC-EC AC power cord 250V/10A 1.8m C13 to CEE7/7	JW118A
	PC-AC-IN AC power cord 250V/6A 1.8m C13 to IS1293	JW119A
	PC-AC-IL AC power cord 250V/10A 1.8m C13 to SI32	JW120A
	PC-AC-IT AC power cord 250V/10A 1.8m C13 to CEI 23-50	JW121A
	PC-AC-JPN AC power cord 125V/12A 1.8m C13 to JISC 8303	JW122A
	PC-AC-KOR AC power cord 250V/7A 1.8m C13 to KSC 8305	JW123A
	PC-AC-NA AC power cord 125V/10A 1.8m C13 to NEMA 5-15P	JW124A
	PC-AC-SWI AC power cord 220V/10A 1.8m C13 to SEV 1011	JW125A
	PC-AC-TW AC power cord 125V/7A 1.8m C13 to CNS 10917	JW126A
	PC-AC-UK AC power cord 250V/10A 1.8m C13 to BS1363	JW127A
	PC-AC-ZA AC power cord 250V/10A 1.8m C13 to SANS 164-1	JW128A

Configuration Information

Step 3: Select Mounting kits

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

Remarks	Description	SKU
	Compatible with 504 and 505 AP models	
	AP-MNT-MP10-A Campus AP mount bracket kit (10-pack) type A: suspended ceiling rail	JZ370A
	AP-MNT-MP10-B Campus AP mount bracket kit (10-pack) type B: suspended ceiling rail	Q9G69A
	AP-MNT-MP10-C Campus AP mount bracket kit (10-pack) type C: suspended ceiling rail	Q9G70A
	AP-MNT-MP10-D Campus AP mount bracket kit (10-pack) type D: solid surface	Q9G71A
	AP-MNT-MP10-E Campus AP mount bracket kit (10-pack) type E: wall-box	R1C72A
Notes:	Qty 1 Mounting kits above should be selected for every 10 Access Points.	
	AP-MNT-A Campus AP mount bracket kit (individual) type A: suspended ceiling rail flat 9/16	R3J15A
	AP-MNT-B Campus AP mount bracket kit (individual) type B: suspended ceiling rail flat 15/16	R3J16A
	AP-MNT-C Campus AP mount bracket kit (individual) type C: suspended ceiling rail profile 9/16	R3J17A
	AP-MNT-D Campus AP mount bracket kit (individual) type D: solid surface	R3J18A
	AP-MNT-E Campus AP mount bracket kit (individual) type E: wall-box	R3J19A
	AP-MNT-MP10-X Campus AP mount adapter kit (10-pack)	R3T20A
	Compatible with 505C AP models	
	Aruba CM AP-MNT-A Campus AP mount bracket kit (individual) type A: flat rail 9/16	R3J15ACM
	Aruba CM AP-MNT-MP10-A Campus AP mount bracket kit (10-pack) type A: flat rail 9/16	JZ370ACM
	Aruba CM AP-MNT-B Campus AP mount bracket kit (individual) type B: flat rail 15/16	R3J16ACM
	Aruba CM AP-MNT-MP10-B Campus AP mount bracket kit (10-pack) type B: flat rail 15/16	Q9G69ACM
	Aruba CM AP-MNT-C Campus AP mount bracket kit (individual) type C: profile rail 9/16	R3J17ACM
	Aruba CM AP-MNT-MP10-C Campus AP mount bracket kit (10-pack) type C: profile rail 9/16	Q9G70ACM
	Aruba CM AP-MNT-D Campus AP mount bracket kit (individual) type D: solid surface	R3J18ACM
	Aruba CM AP-MNT-MP10-D Campus AP mount bracket kit (10-pack) type D: solid surface	Q9G71ACM
	Aruba CM AP-MNT-E Campus AP mount bracket kit (individual) type E: wall-box	R3J19ACM
	Aruba CM AP-MNT-MP10-E Campus AP mount bracket kit (10-pack) type E: wall-box	R1C72ACM
	Aruba CM AP-MNT-MP10-X Campus AP mount adapter kit (10-pack)	R3T20ACM
Notes:	Access Points do not include a Mount. Qty 1 Mount kits should be selected	



Configuration Information

Step 4: Select Antennas (AP-504 only)

Qty	Interface(s)	Target Environment	Mounting	Description	SKU
4	1x RP-SMA male connector	Indoor	Direct-mount	AP-ANT-1W 2.4-2.5GHz (4dBi)/4.9-5.875GHz (6dBi) Hi Gain Dual-band Omni-Dir Indoor Antenna	JW009A
4	1x RP-SMA male pigtail	Indoor	Direct, using pigtails	AP-ANT-13B 2.4-2.5GHz (2.3dBi)/4.9-5.9GHz (4.0dBi) Downtilt Smallest Omni-Dir Single Ant	JW001A
4	1x RP-SMA male pigtail	Indoor/outdoor	Direct, using pigtails	AP-ANT-19 2.4/5G Dual Band Omni-Dir 3dBi/6dBi Indr/Otdr RPSMA Cnctr Ant w/36in Intgrtd Cable	JW004A
4	1x RP-SMA male connector	Indoor	Direct-mount	AP-ANT-20W 2.4-2.5GHz (2dBi)/4.9-5.875GHz (2dBi) Compact Omni-Dir DMt Indr White Antenna	JW011A
1	4x RP-SMA male pigtail	Indoor	Direct, using pigtails	AP-ANT-16 2.4-2.5Ghz (3.9dBi)/4.9-5.9GHz (4.7dBi) 3 Elmt MIMO Ant w/Downtilt Omni-Dir Antenna	JW003A
1	4x RP-SMA male pigtail	Indoor/outdoor	Direct, using pigtails	AP-ANT-25A Dual Band 90x90deg 5dBi +/- 45 Pol 2 Element MIMO 2xRPSMA Pigtail Antenna	JW012A
1	4x RP-SMA male pigtail	Indoor/outdoor	Direct, using pigtails	AP-ANT-28 Dual Band 60x60deg 7.5dBi +/- 45 Pol 2 Element MIMO 2xRPSMA Pigtail Antenna	JW013A

Notes:

- 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

Step 5: Add Antenna Mount Kit (Optional)

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

Remarks	Description	SKU
	AP-ANT-MNT-3 AP-ANT-25A/28/35A/38 Azimuth and Elevation Adjustable Mount Kit	JW020A

Notes: AP-ANT-MNT-3 compatible with AP-ANT-25A and AP-ANT-28

Step 6: Add Cosmetic Snap-on Cover (Optional)

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

Remarks	Description	SKU
	Compatible with 505 AP models	
	AP-MNT-MP10-B1 Campus AP mount bracket kit (10-pack) type B1 - suspended ceiling rail thick 15/16	R6T34A
	AP-505-CVR-20 20-pk for AP-505 White Non-glossy Snap-on Covers	R2H24A
Notes:	Kit contains 20 optional snap-on covers	
	Compatible with 505C AP models	
	Aruba CM AP-505-CVR-20 20-pk White Non-glossy Snap-on Covers	R2H24ACM
Notes:	Kit contains 20 optional snap-on covers	



Configuration Information

Step 7: Add other accessories (Optional)

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

Remarks	Description	SKU
	Compatible with 504 and 505 AP models	
	AP-MOD-SERU Micro-USB TTL3.3V to RJ45 RS232 AP Console Adapter Module	R6Q99A
	AP-CBL-SERU Micro-USB TTL3.3V to USB2.0 AP Console Adapter Cable	JY728A
	Compatible with 505C AP models	
	Aruba CM AP-CBL-SERU AP console adapter cable for custom micro-USB console port	JY728ACM

Step 8: Add Software (Optional)

Remarks	Description	SKU
	Aruba Central AP Foundation 1 year Subscription E-STU	Q9Y58AAE
	Aruba Central AP Foundation 3 year Subscription E-STU	Q9Y59AAE
	Aruba Central AP Foundation 5 year Subscription E-STU	Q9Y60AAE
	Aruba Central AP Foundation 7 year Subscription E-STU	Q9Y61AAE
	Aruba Central AP Foundation 10 year Subscription E-STU	Q9Y62AAE
	Aruba Central AP Advanced 1yr Subscription E-STU	Q9Y63AAE
	Aruba Central AP Advanced 3yr Subscription E-STU	Q9Y64AAE
	Aruba Central AP Advanced 5yr Subscription E-STU	Q9Y65AAE
	Aruba Central AP Advanced 7yr Subscription E-STU	Q9Y66AAE
	Aruba Central AP Advanced 10yr Subscription E-STU	Q9Y67AAE
Notes:	Add the Central Cloud Skus to the Aruba Catalog as Standalone: Aruba > Network Management > Central > Cloud Services	
	Aruba Central On-Premises AP Foundation 1 year Subscription E-STU	R6U63AAE
	Aruba Central On-Premises AP Foundation 3 year Subscription E-STU	R6U64AAE
	Aruba Central On-Premises AP Foundation 5 year Subscription E-STU	R6U65AAE
	Aruba Central On-Premises AP Foundation 7 year Subscription E-STU	R6U66AAE
	Aruba Central On-Premises AP Foundation 10 year Subscription E-STU	R6U67AAE
Notes:	Add the Central On-Prem Skus to the Aruba Catalog as Standalone: Aruba > Network Management > Central > On-Prem Services	



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 indicators (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
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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 (14.8yrs) 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 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).
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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
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For more country-specific regulatory information and approvals, please see your Aruba representative.

Regulatory Model Numbers

- AP-504: APIN0504
 - AP-505: APIN0505
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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)
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Minimum ArubaOS Release

- ArubaOS
 - Aruba InstantOS 8.6.0.0
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Summary of Changes

Date	Version History	Action	Description of Change
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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