ARUBA 630 SERIES CAMPUS ACCESS POINTS

Fast, resilient, and secure Wi-Fi 6E connectivity

For enterprises who need more wireless capacity and wider channels, Aruba 630 Series Campus APs are designed to take advantage of the 6 GHz band via three dedicated radios. By using the 6 GHz band, capacity is more than doubled – so you can meet growing demand due to bandwidth-hungry video, increasing numbers of client and IoT devices and growth in cloud. Unique to Aruba, the 630 Series includes ultra tri-band filtering and dual 2.5 Gbps ethernet ports to eliminate coverage gaps, provide greater resiliency, and deliver fast, secure connectivity.

MORE CAPACITY AND WIDER CHANNELS

The 630 Series APs are designed to take advantage of the 6 GHz band, which translates into far greater speeds, wider channels for multi-gigabit traffic, and less interference. It delivers 3.9 Gbps maximum aggregate data rates Tri-radio, 2x2:2 MIMO in all three bands (3.9 Gbps aggregate peak).

Band	Channel bandwidth	Peak datarate
6 GHz	160 MHz	2.4 Gbps
5 GHz	80 MHz	1.2 Gbps
2.4 GHz	20 MHz	287 Mbps
Total		3.9 Gbps

Advantages of 6GHz

Wi-Fi 6E provides up to 1200 MHz in the 6 GHz band for higher throughput and improved application performance. With up to seven 160 MHz channels, Wi-Fi 6E can better support low-latency, bandwidth hungry applications like high-definition video and artificial reality/virtual reality applications. Only Wi-Fi 6E capable devices can use the 6 GHz band so there is no interference or slowdowns due to legacy devices.

Device class support

The 630 Series APs are part of the low power indoor (LPI) device class. This fixed indoor-only class uses lower power levels and does not require an Automated Frequency Coordination service (AFC) to manage incumbent outdoor services which is required for standard class APs.

KEY FEATURES

- Unlocks the 6 GHz band to more than double the available capacity
- Comprehensive tri-band coverage across 2.4 GHz, 5 GHz, and 6 GHz to deliver 3.9 Gbps maximum aggregate data rate
- Up to seven 160 MHz channels in 6 GHz support low-latency, bandwidth-hungry applications like high-definition video and augmented reality/virtual reality applications
- Unique Ultra Tri-Band (UTB) filtering enables 5 GHz and 6 GHz to operate without restrictions or interference
- High availability with 2.5 Gbps dual ethernets port for hitless failover of Ethernet and power

LESS INTERFERENCE

630 Series Access Points include Aruba's ultra tri-band filtering, which enables enterprises to take advantage of the high end of 5 GHz with the lower end of 6 GHz without experiencing interference. Since there is only 50 MHz between 5 GHz and the 6 GHz, without advanced filtering, enterprises would likely experience problems between the bands and would therefore be limited in the number of channels available. By applying advanced filtering capabilities, enterprises can take full use of available spectrum without creating coverage gaps or islands.

BUSINESS CONTINUITY

The Series 630 APs provide high availability with two HPE Smart Rate ethernet ports for hitless failover for both data and power. Configurable to 1 or 2.5 Gbps, these dual ports provide business continuity for mission critical applications.

GLOBAL READINESS

While the need for more Wi-Fi capacity is recognized across the globe, countries are approaching 6 GHz differently. The 630 Series APs are set up to automatically update regulatory rules once 6E regulations have been approved and certified.

EXTEND THE BENEFITS OF WI-FI 6

The 630 Series APs are based on the 802.11ax standard, which means that all its efficiency and security enhancements are also available on the 6 GHz band. Wi-Fi 6 features such as Orthogonal Frequency Division Multiple Access (OFDMA), BSS coloring etc. are fully supported on the Aruba Wi-Fi 6E access points as well.

Advantages of OFDMA

This capability allows Aruba's APs to handle multiple 802.11ax 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.

WI-FI OPTIMIZATION

Client optimization

Aruba's patented AI-powered ClientMatch technology eliminates sticky client issues by steering a client to the AP where it receives the best radio signal. Client Match steers traffic from the noisy 2.4 GHz band to the preferred 5 GHz or 6 GHz band depending on client capabilities. ClientMatch also dynamically steers traffic to load balance APs to improve the user experience.

Automated Wi-Fi radio frequency management

To optimize the user experience and provide greater stability, Aruba AirMatch allows organization to automate network optimization using machine learning. AirMatch provides dynamic bandwidth adjustments to support changing device density, enhanced roaming using an even distribution of Effective Isotropic Radiated Power (EIRP) to radios, and real-time channel assignments to mitigate co-channel interference.

Application Assurance

With Air Slice, organizations can provide application assurance to their users that goes beyond the traditional capabilities of airtime fairness. After the SLAs are configured, Air Slice monitors network usage, automatically allocates radio resources, and dynamically adjusts radio resources as new users connect and applications sessions begin or end.

Aruba Advanced Cellular Coexistence (ACC)

Unique to Aruba, Advanced Cellular Coexistence 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)

For better insights into energy consumption, Aruba APs continuously monitor and report hardware energy usage. Unlike other vendor's access points, Aruba APs can also be configured to enable or disable capabilities based on available PoE power – ideal when wired switches have exhausted their power budget. Enterprises can deploy Wi-Fi 6E APs and update switching and power at a later if needed based on their actual usage.

APS AS AN IOT PLATFORM

The 630 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. There is also a USB-port extension to provide IoT connectivity to a wider range of devices. These IoT capabilities allows organizations to leverage the Aruba APs as an IoT platform, which eliminates the need for an overlay infrastructure and additional IT resources and can accelerate IoT initiatives.

In addition, Target Wake Time (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, which is ideal for IoT.

ARUBA SECURE INFRASTRUCTURE

The Aruba 630 Series includes build-security capabilities such as:

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 capability requires ClearPass Policy Manager.

SIMPLE AND SECURE ACCESS

To improve security and ease of management, IT can centrally configure and automatically enforce role-based policies that define proper access privileges for employees, guests, contractors, and other user groups – no matter where users connect on wired and WLANs. Dynamic Segmentation eliminates the time consuming and error-prone task of managing complex and static VLANs, ACLs, and subnets by dynamically assigning policies and keeping traffic secure and separated.

SEAMLESS HANDOFFS TO CELLULAR

Built on the technical foundations of Passpoint® and Wi-Fi Calling, Air Pass creates a roaming network across the Aruba enterprise customer footprint, extending cellular coverage and enhancing the visitor and subscriber experience to deliver a great experience for your guests while reducing costs and management overhead for DAS.

FLEXIBLE OPERATION AND MANAGEMENT

Our unified APs can operate as standalone access points or with a gateway for greater scalability, security, and manageability. APs can be deployed using zero touch provisioning – without on-site technical expertise – for ease of implementation in branch offices and for remote work.

Aruba APs can be managed using cloud-based or on premises solutions for any campus, branch, or remote work environment. As the management and orchestration console for Aruba ESP (Edge Services Platform), Aruba Central provides a single pane of glass for overseeing every aspect of wired and wireless LANs, WANs, and VPNs. AI-powered analytics, end-to-end orchestration and automation, and advanced security features are built natively into the solution.

SUMMARY

Aruba 630 Series Access Points are designed to take advantage of the 6 GHz band using three radios for comprehensive tri-band coverage to meet the growing demands of Wi-Fi due to increased use of video, growth in client and IoT devices, and expanded use of cloud. With a maximum aggregate 3.9 Gbps data rate for higher throughput and faster speeds for indoor use, the 630 Series delivers added capacity, wider channels, hitless failover, and less interference between the 5 GHz and 6 GHz bands.

SPECIFICATIONS

Hardware variants
- AP-635: Internal antenna models

Wi-Fi radio specifications
- AP type: Indoor, tri radio, 2.4GHz, 5GHz and 6GHz (concurrent) 802.11ax 2x2 MIMO
- 2.4 GHz radio: Two spatial stream Single User (SU) MIMO for up to 574 Mbps wireless data rate with 2SS HE40 802.11ax client devices
- 5 GHz radio: Two spatial stream Single User (SU) MIMO for up to 1.2 Gbps wireless data rate with 2SS HE80 802.11ax client devices

- 6 GHz radio: Two spatial stream Single User (SU) MIMO for up to 2.4 Gbps wireless data rate with 2SS HE160 802.11ax client devices
- Up to 512 associated client devices per radio, and up to 16 BSSIDs per radio (limited to 4 for the 6GHz radio)
- Supported frequency bands (country-specific restrictions apply):
  - 2.400 to 2.4835 GHz ISM
  - 5.150 to 5.250 GHz U-NII-1
  - 5.250 to 5.350 GHz U-NII-2
  - 5.470 to 5.725 GHz U-NII-2E
  - 5.725 to 5.850 GHz U-NII-3/ISM
  - 5.850 to 5.895 GHz U-NII-4
  - 5.925 to 6.425 GHz U-NII-5
  - 6.425 to 6.525 GHz U-NII-6
  - 6.525 to 6.875 GHz U-NII-7
  - 6.875 to 7.125 GHz U-NII-8
- Available bands and channels: Dependent on configured regulatory domain (country)
- Dynamic frequency selection (DFS) optimizes the use of available RF spectrum in the 5 GHz band
- 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 and 256-QAM (proprietary extension)
  - 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM and 1024-QAM (proprietary extension)
  - 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM and 4096-QAM (proprietary extension)
- 802.11n high-throughput (HT) support: HT20/40
- 802.11ac very high throughput (VHT) support: VHT20/40/80
- 802.11ax high efficiency (HE) support: HE20/40/80/160

- 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 (proprietary extension)
  - 802.11ac: 6.5 to 867 (MCS0 to MCS9, NSS = 1 to 2, VHT20 to VHT80); 1,083 with 1024-QAM (MCS10 and MCS11, proprietary extension)
  - 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)
  - 802.11ax (6GHz): 3.6 to 2,402 (MCS0 to MCS11, NSS = 1 to 2, HE20 to HE160); 2,882 with 4096-QAM (MCS12 and MCS13, proprietary extension)
- 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):
  - Per radio/band (2.4 GHz/5 GHz/6 GHz): +21 dBm (18 dBm per chain)
  - Note: 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
- Ultra Tri-Band (UTB) enables ultimate flexibility in 5 GHz and 6 GHz channel selection without performance 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

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*The UTB feature is not supported on the initial AP-635 hardware, and will be phased in after release

Wi-Fi antennas

- AP-635: Integrated downtilt omni-directional antennas for 2x2 MIMO with peak antenna gain of 4.6 dBi in 2.4 GHz, 7.0 dBi in 5 GHz and 6.3 dBi in 6 GHz. Built-in antennas are optimized for horizontal ceiling mounted orientation of the AP. The downtilt angle for maximum gain is roughly 30 to 40 degrees.
  - Combining the patterns of each of the antennas of the MIMO radios, the peak gain of the combined, average pattern is 2.9 dBi in 2.4 GHz, 4.9 dBi in 5 GHz and 4.3 dBi in 6 GHz.

Other interfaces and features

- E0, E1: Two Ethernet wired network ports (RJ-45)
  - Auto-sensing link speed (100/1000/2500BASE-T) and MDI/MDX
  - 2.5 Gbps speed complies with NBase-T and 802.3bz specifications
  - PoE-PD: 48Vdc (nominal) 802.3at/bt PoE (class 4 or higher)
  - 802.3az Energy Efficient Ethernet (EEE)
  - Link aggregation (LACP) support between both network ports for redundancy and increased capacity
- 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 5 dBm transmit power (class 1) and -100 dBm receive sensitivity (125 kbps)
  - Zigbee: up to 5 dBm transmit power and -97 dBm receive sensitivity (250 kbps)
  - Integrated omnidirectional antenna with roughly 30 to 40 degrees downtilt and peak gain of 3.0 dBi
- Advanced IoT Coexistence (AIC) allows concurrent operation of multiple radios in the 2.4 GHz band
- Built-in Trusted Platform Module (TPM) for enhanced security and anti-counterfeiting
- Visual indicators (four multi-color LEDs): for System (1x) and Radio (3x) status
- Reset button: factory reset, LED mode control (normal/off)
- Serial console interface (proprietary, micro-B USB physical jack)
- Kensington security slot
- Automatic thermal shutdown and recovery function

Power sources and power consumption

- The AP supports direct DC power and Power over Ethernet (PoE) on port E0 and/or E1
- When both DC and PoE power sources are available, DC power takes priority over PoE
- When PoE power is supplied to both Ethernet ports, either port can be configured as the active power source
- Inactive/standby PoE power sources can be used to deliver hitless failover
- Power sources are sold separately; see the 630 Series Ordering Guide for details
- When powered by DC or 802.3bt (class 5) 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.
- Operating the AP with an 802.3af (class 3 or lower) POE source is not supported.
- With IPM enabled, the AP will start up in unrestricted mode but may dynamically apply restrictions depending on the available power budget and actual consumption. The feature restrictions and order in which these get applied are configurable.
- Maximum (worst-case) power consumption (without/with a USB device attached):
  - DC powered: 20.7W/26.4W.
  - PoE powered: 23.8W/29.4W.
  - This assumes that up to 5W is supplied to the attached USB device.
- Maximum (worst-case) power consumption in idle mode: 8.7W/14.2W (DC) or 11.7W/17.2W (PoE).
- Maximum (worst-case) power consumption in deep-sleep mode: 1.1W (DC) or 1.9W (PoE).

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 630 Series Ordering Guide for details.

Mechanical specifications

- Dimensions/weight (AP-635; unit without mount bracket):
  - 220mm (W) x 220mm (D) x 51mm (H)
  - 1300g
- Dimensions/weight (AP-635; shipping):
  - 250mm (W) x 240mm (D) x 85mm (H)
  - 1650g

Environmental specifications

- Operating conditions
  - Temperature: 0C to +50C/+32F to +122F
  - Relative humidity: 5% to 95%
  - ETS 300 019 class 3.2 environments
  - AP is plenum rated for use in air-handling spaces
- Storage conditions
  - Temperature: -25C to +55C / +13F to +131F
  - Relative humidity: 10% to 100%
  - ETS 300 019 class 1.2 environments
- Transportation conditions
  - Temperature: -40C to +70C/-40F to +158F
  - Relative humidity: up to 95%
  - ETS 300 019 class 2.3 environments

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
- IEC/EN 62368-1
- EN 60601-1-1, EN60601-1-2

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

Reliability

- Mean Time Between Failure (MTBF): 520 khrs (59 yrs) at +25C operating temperature

Regulatory model numbers

- AP-635 (all models): APIN0635

Certifications

- UL2043 plenum rating
- Wi-Fi Alliance (WFA)*:
  - Wi-Fi CERTIFIED a, b, g, n, ac
  - Wi-Fi CERTIFIED 6E (ax, 6GHz)
  - 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**
- Zigbee Alliance
- Ethernet Alliance (PoE, PD device, class 5)***

WARRANTY

Aruba's hardware limited lifetime warranty.

MINIMUM OPERATING SYSTEM SOFTWARE VERSIONS

ArubaOS and Aruba InstantOS 8.9.0.0

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* Targeting the fourth quarter of 2021 for WFA certification
** Targeting the third quarter of 2021 for Bluetooth SIG certification
*** Targeting the fourth quarter of 2021 for Ethernet Alliance certification

| RF PERFORMANCE TABLE		
Band, rate	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
2.4 GHz, 802.11b		
1Mbps	18.0	-96.0
11Mbps	18.0	-88.0
2.4 GHz, 802.11g		
6Mbps	18.0	-92.0
54Mbps	16.0	-74.0
2.4 GHz, 802.11n HT20		
MCS0	18.0	-91.0
MCS7	16.0	-73.5
2.4 GHz, 802.11ax HE20		
MCS0	18.0	-91.0
MCS11	14.0	-61.0
5 GHz, 802.11a		
6Mbps	18.0	-88.0
54Mbps	16.0	-71.5
5 GHz, 802.11n HT20/HT40		
MCS0	18.0/18.0	-88.0/-85.0
MCS7	15.0/15.0	-70.0/-67.0
5 GHz, 802.11ac VHT20/VHT40/VHT80		
MCS0	18.0/18.0/18.0	-88.5/-85.5/-82.5
MCS9	14.0/14.0/14.0	-64.5/-61.5/-58.5
5 GHz, 802.11ax HE20/HE40/HE80		
MCS0	18.0/18.0/18.0	-88.5/-85.5/-82.5
MCS11	14.0/14.0/14.0	-59.0/ 56.0/-53.0
6 GHz, 802.11ax HE20/HE40/HE80/HE160		
MCS0	18.0/18.0/18.0/18.0	-90.0/-87.0/-84.0/-81.0
MCS11	14.0/14.0/14.0/14.0	-63.5/-60.5/-57.5/-54.5
MCS13	12.0/12.0/12.0/12.0	-56.0/-53.0/-50.0/-47.0

ANTENNA PATTERNS AP-635
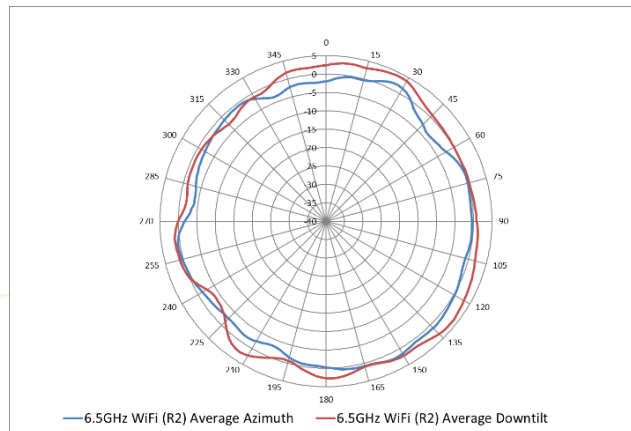
Horizontal planes (top view)

Showing both azimuth (0 degrees) and 30 degrees downtilt patterns (averaged patterns for all applicable antennas)
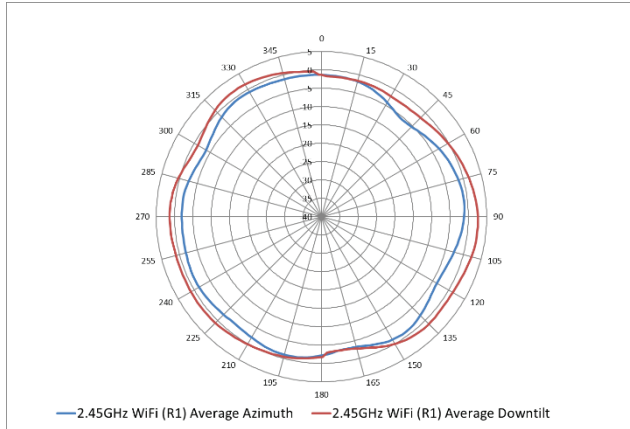
2.45GHz Wi-Fi antenna patterns (horizontal)
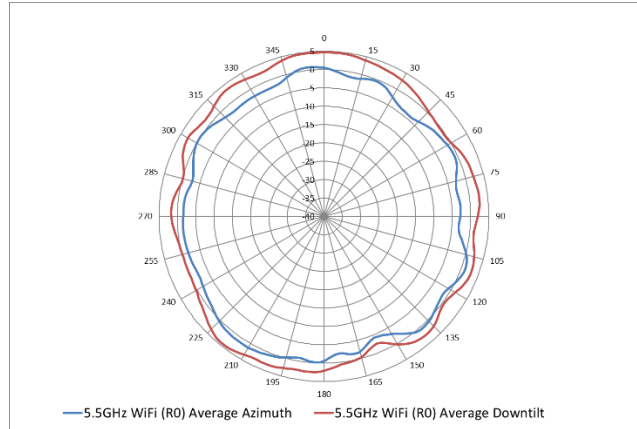
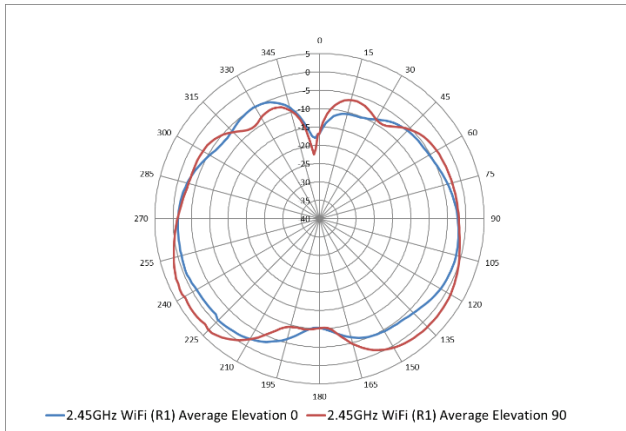**5.5GHz Wi-Fi antenna patterns (horizontal)**

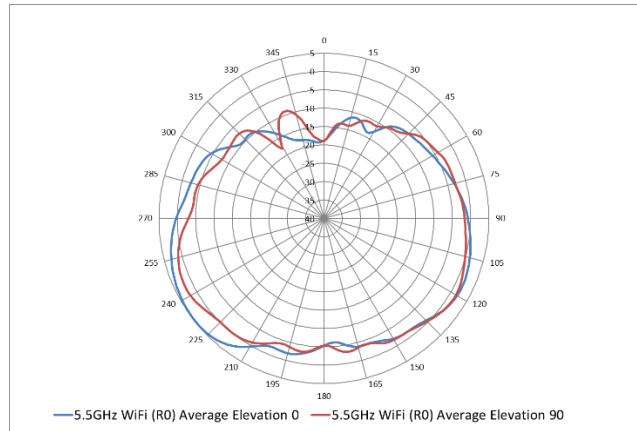**6.5GHz Wi-Fi antenna patterns (horizontal)**
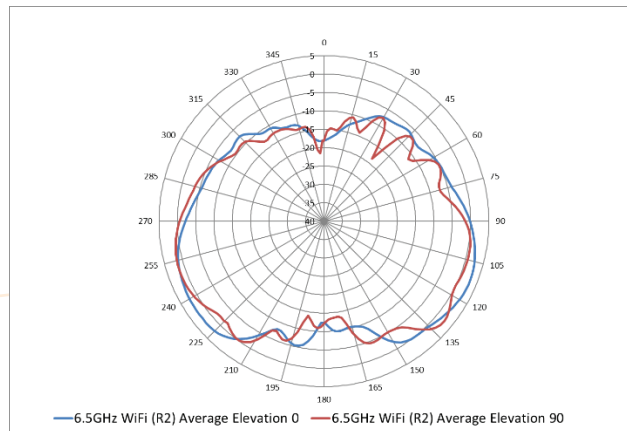
Vertical (elevation) planes (side view, AP facing down)

Showing side view with AP rotated 0 and 90 degrees (averaged patterns for all applicable antennas)

2.45GHz Wi-Fi antennas patterns (vertical)

5.5GHz Wi-Fi antenna patterns (vertical)

6.5GHz Wi-Fi antennas patterns (vertical)

ORDERING INFORMATION AP-635	
Part number	**Description**
R7J24A	Aruba AP-635 (EG) Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J25A	Aruba AP-635 (IL) Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J26A	Aruba AP-635 (JP) Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J27A	Aruba AP-635 (RW) Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J28A	Aruba AP-635 (US) Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J29A	Aruba AP-635 (EG) TAA Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J30A	Aruba AP-635 (IL) TAA Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J31A	Aruba AP-635 (JP) TAA Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J32A	Aruba AP-635 (RW) TAA Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP
R7J33A	Aruba AP-635 (US) TAA Tri-radio 2x2:2 802.11ax Wi-Fi 6E Internal Antennas Campus AP

Note: All hardware SKUs can be managed by Aruba Central. Central Managed (CM) SKUs are used for simplified ordering within US and Canada only.

For more ordering information and compatible accessories, please refer to the ordering guide.

a Hewlett Packard
Enterprise company

DS_AP630Series_SK_102521   a00114648enw

Contact us at www.arubanetworks.com/contact