



EURÓPSKA ÚNIA

Európsky fond regionálneho rozvoja
OP Integrovaná infraštruktúra 2014 – 2020



MINISTERSTVO

DOPRAVY A VÝSTAVBY
SLOVENSKEJ REPUBLIKY

Dodatok č. 1 k ZMLUVE O DODANÍ TOVAROV

zo dňa 20.03.2020

Zmluvné strany

Objednávateľ: **Obec Medzibrodie nad Oravou**

So sídlom Medzibrodie nad Oravou č. 122, 026 01 Medzibrodie nad Oravou

Zastúpený: Mgr. Michal Janota, starosta obce

Bankové spojenie: Prima banka

IBAN: SK78 5600 0000 0040 0797 0008

IČO: 00314650

DIČ: 2020561741

d ďalej ako „objednávateľ“

a

Dodávateľ: **NetWare s.r.o**

So sídlom Hradská 78/B, Bratislava – mestská časť Vrakuňa 821 07

Zastúpený: Ing. Martin Bednár

Bankové spojenie: VÚB banka

IBAN: SK36 0200 0000 0040 2990 1353

IČO: 46 478 868

DIČ: 2820012360

d ďalej ako „dodávateľ“



EURÓPSKA ÚNIA

Európsky fond regionálneho rozvoja
OP Integrovaná infraštruktúra 2014 – 2020



MINISTERSTVO
DOPRAVY A VÝSTAVBY
SLOVENSKEJ REPUBLIKY

1. Zmluvné strany sa na základe vzájomnej dohody rozhodli uzatvoriť tento dodatok k ZMLUVE O DODANÍ TOVAROV zo dňa 20.03.2020, v zmysle §18 ods. 1 písm. e) Zák. č. 343/2015 Z. z., Zákon o verejnom obstarávaní a o zmene a doplnení niektorých zákonov.
2. Predmetom dodatku je zmena pôvodnej zmluvy. Dôvodom zmeny a podpísania dodatku je zosúladienie zmluvných podmienok s podmienkami výzvy na predkladanie žiadostí o NFP OP11-2018/7/1-DOP - "WiFi pre Teba", v rámci ktorej je projekt realizovaný.
3. V Čl. III Predmet zmluvy sa dopĺňa bod 2. v nasledovnom znení:

Opis predmetu zákazky:

K pokrytiu verejných priestranstiev WiFi pripojením bude dodanie tovarov - prístupových hodov zahrňujúcich potrebné nevyhnutné príslušenstvo s inštaláciou a montážou WiFi siete. Vybudovaná WiFi sieť bude používať označenie siete (SSID) WiFi pre Teba a poskytovať internetovú konektivitu s minimálnou rýchlosťou sťahovania 30 Mbps bezplatne všetkým občanom a návštevníkom obce.

Umiestnenie access pointov :

- Access point AP1-1in obecný úrad
- Access point AP1-2in obecný úrad
- Access point AP1-3in obecný úrad
- Access point AP1-4in obecný úrad
- Access point AP1-1in obecný úrad - materská škola
- Access point AP1-2in obecný úrad - materská škola
- Access point AP1-3in obecný úrad - materská škola
- Access point AP2-1in požiarna zbrojnica
- Access point AP2-2in požiarna zbrojnica
- Access point AP367-1out Multifunkčné ihrisko
- Access point AP367-2out Multifunkčné ihrisko

Prístupové body, ktoré budú umiestnené na uvedených verejných priestranstvách musia spĺňať minimálne nasledujúce technické parametre:

- Kompaktné dvoj pásomové WiFi zariadenia (2,4 GHz - 5 GHz), ktoré sú certifikované pre európsky trh,
- Životný cyklus použitých produktov vyšší ako 5 rokov,
- Stredná doba medzi poruchami (MTBF) minimálne 5 rokov,
- Možnosť centrálného manažmentu pre riadenie, monitoring a konfiguráciu siete (single point of management),
- Súlad s „802.11ac Wave I, Inštitúte of Electrical and Electronics Engineers“ (IEEE) štandardom,
- Podpora 802.1x IEEE štandardu,
- Podpora 802.11r IEEE štandardu,
- Podpora 802.11k IEEE štandardu,
- Podpora 802.11v IEEE štandardu,
- Schopnosť AP obsluhovať naraz aspoň 50 rôznych užívateľov bez zníženia kvality služby,
- Minimálne 2x2 MIMO (multiple-input-multiple-output),
- Súlad s Hotspot 2.0 (Passpoint WiFi Alliance certification program).

Sumár aktivít a výstupov:

Projektová dokumentácia, ktorá bude obsahovať sieťové zapojenie aktívnych prvkov siete s IP adresným plánom, simuláciu pokrytia priestoru, meranie skutočného pokrytia, technické listy aktívnych prvkov, funkčný popis a vyobrazenie obsahu hotspot portálu s umiestneným logom (logo je súčasťou výzvy č. OP11-2018/7/1 -POP, časť „Iné dokumenty výzvy“ č. 7).



EURÓPSKA ÚNIA

Európsky fond regionálneho rozvoja
OP Integrovaná infraštruktúra 2014 – 2020



MINISTERSTVO
DOPRAVY A VÝSTAVBY
SLOVENSKEJ REPUBLIKY

4. Pôvodné znenie Čl. VI Záručná doba, zodpovednosť za vady bod 1. sa mení nasledovne:

Zmluvné strany sa dohodli na záručnej dobe za vybudované bezplatné Wi-Fi pripojenie pre občanov a návštevníkov obce Medzibrodie nad Oravou prostredníctvom bezdrôtových prístupových bodov na verejných priestranstvách v zmysle špecifikácie uvedenej v prieskume trhu v trvaní 60 mesiacov od dátumu ich odovzdania a prevzatia. Dodávateľ zodpovedá za vady diela, ktoré vznikli porušením jeho povinností.

5. Zmluvné strany sa dohodli na aktualizácii/zosúladení nasledovných príloh v ZMLUVE O DODANÍ TOVAROV, v súlade s výsledkami kontroly verejného obstarávania:
- Príloha č. 1 – Cenová ponuka úspešného uchádzača zo dňa 24.02.2020
 - Príloha č. 2 - Test splnenia technických parametrov
 - Príloha č. 3 - Technické listy dodávaných aktívnych prvkov
6. Zmluvné strany sa dohodli na doplnení nasledovnej prílohy k ZMLUVE O DODANÍ TOVAROV, v súlade s výsledkami kontroly verejného obstarávania:
- Príloha č. 4 - Podrobný popis prístupových bodov (AP) s väzbou na finančné limity

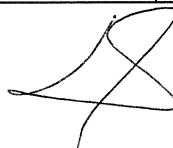
V Bratislave, dňa 18.01.2021

www.netware.sk
dodávateľ

V Medzibrodí nad Oravou, dňa 18.01.2021

objednávateľ

HW	ks/m/h	cena/ks/m/h (bez DPH)	cena spolu (bez DPH)
AP-305	9	€ 365.00	€ 3,285.00
Airwave Lic	9	€ 22.00	€ 198.00
AP-držiak	9	€ 19.00	€ 171.00
FG-30E -bezpečnostná brána	1	€ 320.00	€ 320.00
8x5 Care 1YR	1	€ 79.00	€ 79.00
24G PoE+ 4SFP - switch	1	€ 620.00	€ 620.00
8G PoE+ 2SFP - switch	2	€ 590.00	€ 1,180.00
Cat5e kábel	250	€ 0.60	€ 150.00
Optický kábel DROP FTTx	820	€ 0.90	€ 738.00
úchytky na optiku	10	€ 6.00	€ 60.00
robota - káblovanie	50	€ 25.00	€ 1,250.00
AP Outdoor	2	€ 610.00	€ 1,220.00
1Y FC NBD Exch AP SVC	2	€ 160.00	€ 320.00
AP Outdoor držiak	2	€ 92.00	€ 184.00
AP Outdoor napájanie	2	€ 40.00	€ 80.00
AP Outdoor európska zástrčka	2	€ 5.00	€ 10.00
Dátový rozvádzač	3	€ 93.00	€ 279.00
konfigurácia siete	5	€ 65.00	€ 325.00
SPOLU BEZ DPH			€ 10,469.00
SPOLU s DPH			€ 12,562.80



Test splnenia technických parametrov (TSTP) v rámci "Wifi pre Teba"

TSTP slúži pre žiadateľa ako podklad pre špecifikáciu riešenia spĺňajúcu minimálne technické parametre požadovaných výzvu.

Technické parametre riešenia sú navrhnuté v súlade so schválenou Štúdiou uskutočniteľnosti <https://metais.finance.gov.sk/studia/detail/8c95df2d-700e-47ce-a1b0-4cbf3334b453?tab=documents> a musia spĺňať požiadavky Robustného, Spoľahlivého a Bezpečného produktu, ktorý poskytne občanom bezplatný prístup na internet prostredníctvom Wifi pripojenia.

- Robustný:** definuje minimálne technické parametre Prístupového bodu (Access pointu), resp. ostatného HW vybavenia,
- Spoľahlivý:** definuje minimálne podmienky pre poskytnutie kvalitného internetového pripojenia,
- Bezpečný:** definuje minimálne podmienky pre sieťovú a fyzickú bezpečnosť.

Upozornenie: výsledky tohto testu slúžia výlučne pre potreby žiadateľa a nie sú zárukou výsledku v procese schvaľovania žiadosti o NFP.

Otázka č.	Znenie otázky	Odkaz na relevantnú časť Technických listov (žiadateľ uvedie predmetnú časť technických listov, resp. iného relevantného zdroja zodpovedajúceho konkrétnemu parametru)	Odpoveď (po kliknutí na bunku vyberte jednu z možností)
1.	Kompaktné dvojpásmové WiFi zariadenia (2,4GHz - 5 GHz), ktoré sú certifikované pre európsky trh?	AP500 Series-Technical Specification str.4 https://www.arubanetworks.com/assets/ds/DS_AP500Series.pdf AP360 Series-Wireless Radio Spec. Str.2 https://www.arubanetworks.com/assets/ds/DS_AP360Series.pdf	Áno
2.	Životný cyklus použitých produktov vyšší ako 5 rokov?	AP500 Series-Reliability str.6 https://www.arubanetworks.com/assets/ds/DS_AP500Series.pdf Pre AP 360 Series - Garantované výrobcu	Áno
3.	Stredná doba medzi poruchami (MTBF) minimálne 5 rokov?	AP500 Series-Reliability str.6 https://www.arubanetworks.com/assets/ds/DS_AP500Series.pdf Pre AP 360 Series - Garantované výrobcu	Áno
4.	Možnosť centrálného manažmentu pre riadenie, monitoringu a konfiguráciu siete (single point of management)?	AP500 Series-Flexible Operation and Management str.3 https://www.arubanetworks.com/assets/ds/DS_AP500Series.pdf AP360 Series-Flexib. Operation and Mgmt str.2 https://www.arubanetworks.com/assets/ds/DS_AP360Series.pdf	Áno
5.	Súlad s „802.11ac Wave 1, Institute of Electrical and Electronics Engineers“ (IEEE) štandardom?	AP500 Series-Technical Specification str.4 https://www.arubanetworks.com/assets/ds/DS_AP500Series.pdf AP360 Series-Wireless Radio Spec. Str.2 https://www.arubanetworks.com/assets/ds/DS_AP360Series.pdf	Áno
6.	Podpora 802.1x IEEE štandardu?	Enabling 802.1x str.165 (Platí pre AP500 a tiež pre AP367) https://www.arubanetworks.com/techdocs/Instant_83x_WebHelp/Content/PDFs/Aruba%20Instant%208.3.0.x%20User%20Guide.pdf	Áno
7.	Podpora 802.11r IEEE štandardu?	Fast roaming str.99 (Platí pre AP500 a tiež pre AP367) https://www.arubanetworks.com/techdocs/Instant_83x_WebHelp/Content/PDFs/Aruba%20Instant%208.3.0.x%20User%20Guide.pdf	Áno
8.	Podpora 802.11k IEEE štandardu?	Fast roaming str.99 (Platí pre AP500 a tiež pre AP367) https://www.arubanetworks.com/techdocs/Instant_83x_WebHelp/Content/PDFs/Aruba%20Instant%208.3.0.x%20User%20Guide.pdf	Áno
9.	Podpora 802.11v IEEE štandardu?	Fast roaming str.99 (Platí pre AP500 a tiež pre AP367) https://www.arubanetworks.com/techdocs/Instant_83x_WebHelp/Content/PDFs/Aruba%20Instant%208.3.0.x%20User%20Guide.pdf	Áno
10.	Schopnosť AP obsluhovať naraz aspoň 50 rôznych užívateľov bez zníženia kvality služby?	AP500 Series-High Density connectivity str.2 https://www.arubanetworks.com/assets/ds/DS_AP500Series.pdf AP360 Series-Practical MaxClient Count https://www.arubanetworks.com/products/networking/access-points/compare/#19280,74523	Áno
11.	Minimálne 2x2 MIMO (multiple-input-multiple-output)?	AP500 Series-Technical Specification str.4 https://www.arubanetworks.com/assets/ds/DS_AP500Series.pdf AP360 Series-Wireless Radio Spec. Str.2 https://www.arubanetworks.com/assets/ds/DS_AP360Series.pdf	Áno
12.	Súlad s Hotspot 2.0 (Passpoint WiFi Alliance certification program)?	technický súlad garantujeme	Áno
13.	Súčasťou dodávky bude: projektová dokumentácia ktorá bude obsahovať sieťové zapojenie aktívnych prvkov siete s IP adresným plánom, Simuláciu pokrytia priestoru, Meranie skutočného pokrytia, technické listy aktívnych prvkov, funkčný popis a vyobrazenie obsahu hotspot portálu s umiestneným logom?	Áno	Áno

Všetky otázky sú zodpovedané

Minimálne technické podmienky sú zadefinované.

Net Ware s.r.o.
Hradská 78/B, 821 07 Bratislava
IČO: 46 476 868 ZČS: 2620012360
www.netware.sk

Počet odpovedí "nie"	0
Počet nezodpovedaných otázok	0

DATA SHEET

ARUBA 360 SERIES OUTDOOR ACCESS POINTS

Entry-level outdoor and warehouse connectivity with Wi-Fi 5 (802.11ac Wave 2)

Multi-functional 360 Series 802.11ac Wave 2 outdoor access points deliver cost-effective wireless connectivity to mobile and IoT devices in a wide range of outdoor and warehouse environments.

With a maximum aggregate data rate of 1.2 Gbps (1.167 Gbps), the 360 Series comes with multi-user MIMO (MU-MIMO), 4 spatial streams (4SS), and optional 160MHz channel bandwidth (VHT160) to quickly add performance and capacity to existing or wireless networks.

EXTREME WEATHER RESILIENCY

Able to survive in harsh outdoor environments and provide connectivity in warehouses and distribution centers, the 360 Series can withstand exposure to high and low temperature extremes, wind speeds up to 165 mph, and tolerate persistent moisture, precipitation, and dust and salt sprays for extended periods of time. All electrical interfaces include industrial strength surge protection.

MU-MIMO AWARE CLIENT OPTIMIZATION

The 360 Series includes Aruba's patented ClientMatch technology to eliminate sticky client issues while optimizing 802.11ac Wave 2 performance. These APs continuously gather session performance metrics to steer mobile devices to the best-available AP - even while users roam. With MU-MIMO awareness, ClientMatch can group MU-MIMO capable devices together to increase network capacity and efficiency. ClientMatch also participates in Aruba's **AI-powered Mobility** solution.

IOT-READY

The 360 Series includes an integrated Bluetooth Low Energy radio to simplify the deployment and management of location services, asset tracking services, security solutions and IoT sensors. This allows organizations to leverage the 360 Series as an IoT platform, which eliminates the need for an overlay infrastructure and additional IT resources.



KEY FEATURES

- Deliver gigabit Wi-Fi to outdoor and extreme environments.
- 1.2 Gbps of maximum throughput
- WPA3 and Enhanced Open security
- Patented ClientMatch technology resolves sticky client issues and optimizes Wave 2 performance
- AI-powered AirMatch automates RF optimization
- IoT-ready with integrated Bluetooth Low Energy (BLE)
- Participates in Aruba's Dynamic Segmentation solution

ARUBA SECURE INFRASTRUCTURE

The Aruba 360 Series includes components of Aruba's 360 Secure Fabric to help protect user authentication and wireless traffic. Select capabilities include:

WPA3 and Enhanced Open

Support for stronger encryption and authentication is provided via the latest version of WPA for enterprise protected networks.

Enhanced Open offers seamless new protection for users connecting to open networks where each session is automatically encrypted to protect user passwords and data on guest networks.

WPA2-MPSK

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

VPN Tunnels

In Remote AP (RAP) and IAP-VPN deployments, the Aruba 360 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 360 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](#).

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](#).

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.

ADDITIONAL FEATURES

Zero Touch Provisioning

APs can be factory-shipped and zero-touch provisioned through Aruba Central or AirWave using a cloud-based service to reduce deployment time, centralize configuration, and manage inventory.

Advanced Cellular Coexistence (ACC)

Minimizes interference from 3G/4G LTE cellular networks, distributed antenna systems (DAS), and commercial small cell or femtocell equipment

Hardened, industrial design

Extends the temperature range capabilities of indoor access points for environments that lack heating and cooling. It also provides sealed connector interfaces to protect against dust and moisture

AP-360 SERIES SPECIFICATION

- AP-365
 - 2.4-GHz (300 Mbps max) and 5-GHz (867 Mbps max) radios, each with 2x2 MIMO and integrated omni-directional antennas.
- AP-367
 - 2.4-GHz (300 Mbps max) and 5-GHz (867 Mbps max) radios, each with 2x2 MIMO and integrated directional antennas.

WIRELESS RADIO SPECIFICATIONS

- AP type: outdoor, dual radio, 5 GHz 802.11ac and 2.4 GHz 802.11n
- 2x2 MIMO with two spatial streams and up to 1,266 Mbps wireless data rate
- Supported frequency bands (country-specific restrictions apply):
 - 2.4000 GHz to 2.4835 GHz
 - 5.150 GHz to 5.250 GHz
 - 5.250 GHz to 5.350 GHz
 - 5.470 GHz to 5.725 GHz
 - 5.725 GHz to 5.875 GHz
- Available channels: Dependent upon configured regulatory domain
- Dynamic Frequency Selection (DFS) compliant to radar coexistence requirements
- Supported radio technologies:
 - 802.11b: Direct-sequence spread-spectrum (DSSS)
 - 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM)
 - 802.11n/ac: 2x2 MU-MIMO with up to two spatial streams
- Supported modulation types:
 - 802.11b: BPSK, QPSK, CCK
 - 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM
 - 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
- Transmit power: Configurable in increments of 0.5 dBm



- Maximum (conducted aggregate) transmit power (limited by local regulatory requirements):
 - 2.4-GHz band: +26 dBm (23 dBm per chain)
 - 5-GHz bands: +25 dBm (22 dBm per chain)
- Maximum EIRP (limited by local regulatory requirements):
 - 2.4 GHz band
 - > 365 28.7 dBm EIRP
 - > 367 32.3 dBm EIRP
 - 5 GHz Band
 - > 365 29.3 dBm EIRP
 - > 367 31.5 dBm EIRP
- Advanced cellular coexistence (ACC) feature to effectively deal with interference from cellular systems
- Maximum ratio combining (MRC) for improved receiver performance
- Cyclic delay diversity (CDD) for improved downlink RF performance
- Short guard interval for 20-MHz, 40-MHz and 80-MHz channels
- 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 reliability in signal delivery
- 802.11ac wave 2 MU-MIMO
- 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)
 - 802.11ac: 6.5 to 867 (MCS0 to MCS9, NSS = 1 to 2)
- 802.11n high-throughput (HT) support: HT 20/40
- 802.11ac very high throughput (VHT) support: VHT 20/40/80
- 802.11n/ac packet aggregation: A-MPDU, A-MSDU Power
- Maximum power consumption: 12.5 watts
- Power over Ethernet (PoE): 48 Vdc (nominal) 802.3af-compliant source

ANTENNAS

Supports 802.11ac TxBF which provides an effectively infinite variety of antenna patterns

- AP-365: Integrated Omni antennas (H and V polarized)
 - 2.7 dBi @ 2.4 GHz
 - 4.3 dBi @ 5.x GHz
- AP-367: Integrated Directional antennas (+/-45 polarized)
 - 6.3 dBi @ 2.4 GHz (90° Vertical x 90° Horizontal)
 - 6.5 dBi @ 5.x GHz (90° Vertical x 100° Horizontal)

OTHER INTERFACES

- One 10/100/1000BASE-T Ethernet network interfaces (RJ-45)
 - Auto-sensing link speed and MDI/MDX
 - 802.3az Energy Efficient Ethernet (EEE)
 - PoE-PD: 802.3af PoE
- Serial console interface (micro USB)
- Reset button
- Visual indicator (LED):
 - Power/system status

MOUNTING

- Ordered separately
- Optional mounting kits:
 - AP-270-MNT-V1: Outdoor AP long mount kit for pole/wall mounting. Reduces impact of obstruction by pole or extends away from corner
 - AP-270-MNT-V2: Outdoor AP short mount kit for pole/wall mounting
 - AP-270-MNT-H1: Outdoor AP mount kit for hanging from inclined/horizontal structures
 - AP-270-MNT-H2: Outdoor AP flush mount kit for hanging from inclined/horizontal structures

MECHANICAL

- Dimensions/weight (unit, excluding mount accessories):
 - 165mm (W) x 165mm (D) x 110mm (H), 6.5" (W) x 6.5" (D) 4.3" (H)
 - 807g/1.78lbs (AP-365)
 - 815g/1.80lbs (AP-367)
- Dimensions/weight (shipping):
 - 198mm (W) x 200mm (D) x 128mm (H), 7.8" (W) x 7.9" (D) x5.0" (H)
 - 1,115g/2.46lbs (AP-365)
 - 1,123g/2.48lbs (AP-367)

ENVIRONMENTAL

- Operating:
 - Temperature: -40° C to +55° C (-40° F to +131°F) ambient in full sun
 - Humidity: 5% to 95% non-condensing
- Max Elevation 3000m
- Storage and transportation:
 - Temperature: -40° C to +70° C (-40° F to +158°F)
 - EN 300 019 Storage and Transportation
- Shock, vibration, and earthquake
 - IEC 60068-2-64/-27/-6



- Weather resistance
 - Wind Survivability: Up to 165 mph
 - IP66/67
 - ASTM B117-07A: Salt spray testing per UL50 NEMA 4x
 - EN 300 019 Environmental testing
 - » Non-weather protected locations
 - » Full solar exposure

REGULATORY/COMPLIANCE

- FCC/Industry of Canada
- CE Marked
- RED Directive 2014/53/EU
- EMC Directive 2014/30/EU
- Low Voltage Directive 2014/35/EU
- EN 300 328
- EN 301 489
- EN 301 893
- UL/IEC/EN 60950
- EN 60601-1-1, EN60601-1-2
- AP-365:
 - EN 50121-1
 - EN 50121-3-2
 - EN 50121-4
 - EN-50155

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

REGULATORY MODEL NUMBERS

- AP-365: APEX0365
- AP-367: APEX0367

CERTIFICATIONS

- CB Scheme Safety, cTUVus
- Wi-Fi CERTIFIED™ a,b,g,n
- Wi-Fi CERTIFIED™ ac (with wave 2 features)
- WPA, WPA2 and WPA3 – Enterprise with CNSA option, Personal (SAE), Enhanced Open (OWE)

WARRANTY

- Limited lifetime warranty

MINIMUM OPERATING SYSTEM SOFTWARE VERSION

- Unified ArubaOS and InstantOS 6.5.2.0 and 8.2.0



RF PERFORMANCE TABLE

	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
802.11b 2.4 GHz		
1 Mbps	23.0	-91.0
11 Mbps	18.0	-88.0
802.11g 2.4 GHz		
6 Mbps	23.0	-91.0
54 Mbps	18.0	-73.0
802.11n HT20 2.4 GHz		
MCS0/8	23.0	-91.0
MCS7/15	18.0	-72.0
802.11n HT40 2.4 GHz		
MCS0/8	18.0	-88.0
MCS7/15	18.0	-69.0
802.11ac VHT20 2.4 GHz		
MCS0 Nss1&Nss2	23.0	-91.0
MCS8 Nss1&Nss2	18.0	-67.0
802.11ac VHT40 2.4 GHz		
MCS0 Nss1&Nss2	18.0	-88.0
MCS9 Nss1&Nss2	17.0	-63.0
802.11a VHT80 5 GHz		
6 Mbps	22.0	-91.0
54 Mbps	20.0	-74.0
802.11n HT20 5 GHz		
MCS0/8	22.0	-91.0
MCS7/15	20.0	-72.0
802.11n HT40 5 GHz		
MCS0/8	22.0	-88.0
MCS7/15	20.0	-69.0
802.11ac VHT20 5 GHz (SU-MIMO)		
MCS0 Nss1&Nss2	22.0	-91.0
MCS8 Nss1&Nss2	19.0	-68.0
802.11ac VHT40 5 GHz (SU-MIMO)		
MCS0 Nss1&Nss2	22.0	-87.0
MCS9 Nss1&Nss2	19.0	-63.0
802.11ac VHT80 5 GHz (SU-MIMO)		
MCS0 Nss1&Nss2	22.0	-85.0
MCS9 Nss1&Nss2	19.0	-59.0

Note: please check with your country manager for regional product schedules.



ORDERING INFORMATION

Part Number	Description
AP-360 Series Access Points	
JX963A	Aruba AP-365 (EG) 802.11n/ac Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
JX964A	Aruba AP-365 (IL) 802.11n/ac Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
JX965A	Aruba AP-365 (JP) 802.11n/ac Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
JX966A	Aruba AP-365 (RW) 802.11n/ac Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
JX967A	Aruba AP-365 (US) 802.11n/ac Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
JX968A	Aruba AP-365 (RW) TAA 802.11n/ac Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
JX969A	Aruba AP-365 (US) TAA 802.11n/ac Dual 2x2:2 Radio Integrated Omni Antenna Outdoor AP
JX970A	Aruba AP-367 (EG) 802.11n/ac Dual 2x2:2 Radio Integrated Directional Antenna Outdoor AP
JX971A	Aruba AP-367 (IL) 802.11n/ac Dual 2x2:2 Radio Integrated Directional Antenna Outdoor AP
JX972A	Aruba AP-367 (JP) 802.11n/ac Dual 2x2:2 Radio Integrated Directional Antenna Outdoor AP
JX973A	Aruba AP-367 (RW) 802.11n/ac Dual 2x2:2 Radio Integrated Directional Antenna Outdoor AP
JX974A	Aruba AP-367 (US) 802.11n/ac Dual 2x2:2 Radio Integrated Directional Antenna Outdoor AP
JX975A	Aruba AP-367 (RW) TAA 802.11n/ac Dual 2x2:2 Radio Integrated Direct Antenna Outdoor AP
JX976A	Aruba AP-367 (US) TAA 802.11n/ac Dual 2x2:2 Radio Integrated Direct Antenna Outdoor AP
JX966ACM	Aruba CM AP-365 (RW) 802.11n/ac Dual 2x2:2 Integ Omni Antenna Outdoor AP
JX967ACM	Aruba CM AP-365 (US) 802.11n/ac Dual 2x2:2 Integ Omni Antenna Outdoor AP
JX973ACM	Aruba CM AP-367 (RW) 802.11n/ac Dual 2x2:2 Integ Directional Antenna Outdoor AP
JX974ACM	Aruba CM AP-367 (US) 802.11n/ac Dual 2x2:2 Integ Directional Antenna Outdoor AP

For more ordering information and compatible accessories, please refer to the [ordering guide](#).

DATA SHEET

ARUBA 500 SERIES WIRELESS 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 real-world aggregate data rate of 1.49 Gbps (HE80/HE20), they deliver the speed and reliability needed for venues and workplaces such as schools, midsize offices and retailers.

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



KEY FEATURES

- 1.49 Gbps maximum real-world speed (HE80/HE20)
- 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

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.

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:

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](#).

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.

ADDITIONAL WI-FI FEATURES

Each AP also includes the following standards-based technologies:

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



TECHNICAL SPECIFICATIONS

Model	AP-504	AP-505
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 (287 Mbps) wireless data rate with individual 2SS HE40 (HE20) 802.11ax client devices or with two 1SS HE40 (HE20) 802.11ax MU-MIMO capable client devices simultaneously	
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 2.4835GHz • 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	
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/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: +21 dBm (18dBm 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.	



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 duplexing 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.

OTHER INTERFACES

Model	AP-504	AP-505
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	
Security slot	Kensington security slot	

POWER SOURCES AND POWER CONSUMPTION

Model	AP-504	AP-505
Power Sources: The AP supports direct DC power and Power over Ethernet	- 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 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 6.2W (POE).	
Maximum (worst-case) power consumption in deep-sleep mode:	1.7W (DC) or 3.7W (POE).	



MECHANICAL SPECIFICATIONS

Model	AP-505
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.

ENVIRONMENTAL SPECIFICATIONS

Model	AP-504	AP-505
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

Model	AP-504	AP-505
Mean Time Between Failure (MTBF):	1.3Mhrs (148yrs) at +25C operating temperature.	

REGULATORY AND SAFETY COMPLIANCE

Model	AP-504	AP-505
Regulatory model numbers	APIN0504	APIN0505
Minimum ArubaOS Release	ArubaOS and Aruba InstantOS 8.6.0.0	
Regulatory compliance (For more country-specific regulatory information and approvals, please see your Aruba representative.)	• 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	
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, Wi-Fi Agile Multiband - Wi-Fi Location - Passpoint (release 2) • Bluetooth SIG • Ethernet Alliance (POE, PD device, class 4)	



RF PERFORMANCE TABLE

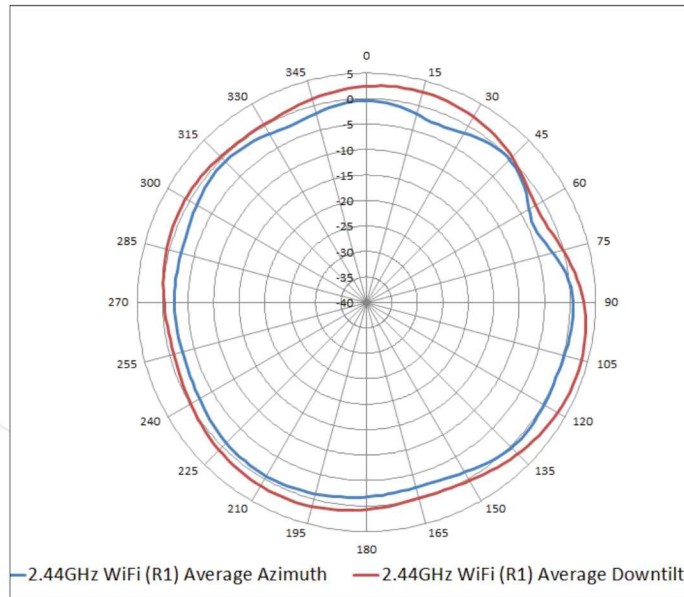
Band, rate	Maximum transmit power (dBm) per transmit chain	Receiver sensitivity (dBm) per receive chain
2.4GHz, 802.11b		
1Mbps	18	-98
11Mbps	18	-90
2.4GHz, 802.11g		
6Mbps	18	-93
54Mbps	18	-76
2.4GHz, 802.11n HT20		
MCS0	18	-93
MCS7	16	-75
2.4GHz, 802.11ax HE20		
MCS0	18	-93
MCS11	14	-62
5GHz, 802.11a		
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



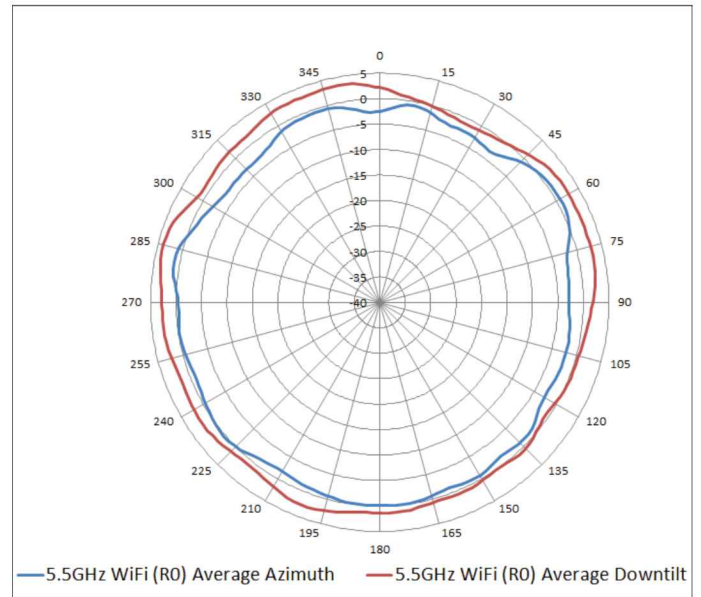
ANTENNA PATTERNS

Horizontal planes (top view)

Showing azimuth (0 degrees) and 30 degrees downtilt patterns (averaged patterns for all applicable antennas)



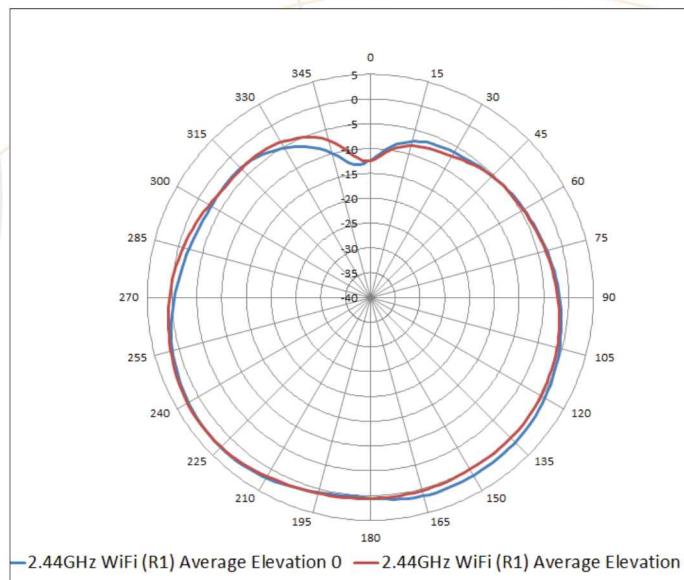
2.44GHz Wi-Fi (antennas 1, 2)



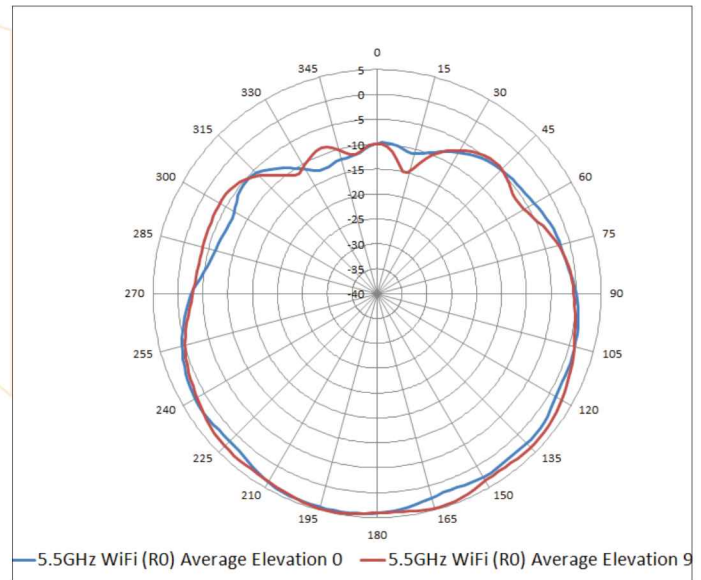
5.5GHz Wi-Fi (antennas 1, 2)

Vertical (elevation) planes (side view, AP facing down)

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



2.44GHz Wi-Fi (antennas 1, 2)



5.5GHz Wi-Fi (antennas 1, 2)



ORDERING INFORMATION

Part number	Description
Aruba 500 Series Campus Access Points	
Internal antenna access points	
R2H25A	Aruba AP-505 (EG) Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP
R2H26A	Aruba AP-505 (IL) Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP
R2H27A	Aruba AP-505 (JP) Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP
R2H28A	Aruba AP-505 (RW) Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP
R2H28ACM	Aruba CM AP-505 (RW) Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP
R2H29ACM	Aruba CM AP-505 (US) Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP
R2H29A	Aruba AP-505 (US) Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP
External antenna access points	
R2H19A	Aruba AP-504 (EG) Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP
R2H20A	Aruba AP-504 (IL) Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP
R2H21A	Aruba AP-504 (JP) Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP
R2H22A	Aruba AP-504 (RW) Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP
R2H23A	Aruba AP-504 (US) Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP
Internal antenna access points – TAA models	
R2H35A	Aruba AP-505 (EG) TAA Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP
R2H36A	Aruba AP-505 (IL) TAA Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP
R2H37A	Aruba AP-505 (JP) TAA Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP
R2H38A	Aruba AP-505 (RW) TAA Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP
R2H39A	Aruba AP-505 (US) TAA Dual Radio 2x2:2 802.11ax Internal Antennas Unified Campus AP
External antenna access points – TAA models	
R2H30A	Aruba AP-504 (EG) TAA Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP
R2H31A	Aruba AP-504 (IL) TAA Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP
R2H32A	Aruba AP-504 (JP) TAA Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP
R2H33A	Aruba AP-504 (RW) TAA Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP
R2H34A	Aruba AP-504 (US) TAA Dual Radio 2x2:2 802.11ax External Antennas Unified Campus AP
For compatible accessories, see the 500 Series Ordering Guide	

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

Resources:

1. 500 Series Ordering Guide
2. Aruba Access Points webpage

Príloha č. 1 Príručky pre prijímateľa DOP Wifi pre Teba - príloha k ŽoP: Podrobný popis prístupového bodu (AP) s väzbou na finančné limity

Položka	Merná jednotka	Počet jednotiek	Jednotková cena (v EUR bez DPH)	Vysúťážená suma celkom (v EUR s DPH)	Limity podľa Príručky pre oprávnenosť výdavkov PO7 OP II pre dopytovo orientované projekty „Wifi pre Teba“ (max. suma za 1 AP v EUR s DPH)
Externý prístupový bod (AP) č. 1-2:	(nevypĺňa sa)			3501.6	1,500.00
rozpísať všetky nákladové položky daného AP, ktoré sú uvedené na faktúre:	(nevypĺňa sa)				
Prístupový bod	ks	2	782	1876.8	(nevypĺňa sa)
Inštalácia a konfigurácia AP	hod	22	30	792	(nevypĺňa sa)
Centrálne komponenty (switch, router, optické káble, ...)	súbor	1	694	832.8	(nevypĺňa sa)
Interný prístupový bod (AP) č. 1-9:	(nevypĺňa sa)			9061.2	1,000.00
rozpísať všetky nákladové položky daného AP, ktoré sú uvedené na faktúre:	(nevypĺňa sa)				
Prístupový bod	ks	9	415	4482	(nevypĺňa sa)
Inštalácia a konfigurácia AP	hod	81	30	2916	(nevypĺňa sa)
Centrálne komponenty (switch, router, optické káble, ...)	súbor	1	1386	1663.2	(nevypĺňa sa)
Celkom				12562.8	


Net Ware s.r.o.
 Hradská 78/B, 821 07 Bratislava
 IČO: 46 478 868 DIČ: 2020012360
 www.netware.sk