

# ARUBA AP-93H ACCESS POINT



The multifunctional enterprise-class AP-93H 802.11n access point (AP) easily mounts to an Ethernet wall plate and uses the existing structured cabling system to provide secure wired and Wi-Fi network access in dormitories, classrooms, hotels, medical clinics and multitenant environments.

Capable of delivering high-performance Wi-Fi services to multiple rooms, the AP-93H greatly simplifies RF coverage planning and significantly reduces wireless LAN (WLAN) deployment costs. The AP-93H is built to provide years of trouble-free operation and is backed by a limited lifetime warranty.

Delivering wire-like performance at data rates up to 300 Mbps, the AP-93H features a single 2x2 MIMO 2.4-GHz or 5-GHz dual-band radio with internal antennas. For wired connectivity, it features four 10/100BASE-T switch ports, an additional pass-through RJ-45 port and a 10/100/1000BASE-T uplink port that can operate from an 802.3af power-over-Ethernet (PoE) source or a 12-volt DC power supply.



Working with centralized Aruba Mobility Controllers, the AP-93H delivers secure, high-speed network services that move users to a “wireless where possible, wired where necessary” network access model. The network can then be rightsized by eliminating unused Ethernet switch ports, which reduces operating costs.

The AP-93H leverages wireless as a primary connection with speed and reliability comparable to a wired LAN. High performance is maintained using channel bonding, block acknowledgement and MIMO radios, while advanced antenna technology increases range and reliability.

The AP-93H also supports Adaptive Radio Management™ and spectrum analysis to maximize client performance and mitigate RF interference across the 2.4-GHz and 5-GHz radio bands.

In addition to wired and wireless connectivity, the multifunctioning AP-93H supports a variety of operating modes, including wireless LAN (WLAN) access with part-time air monitoring, dedicated air monitoring for wireless intrusion protection and spectrum analysis, Remote AP (RAP) functionality and secure enterprise mesh.

## OPERATING MODES

- 802.11a/b/g/n AP
- Remote AP (RAP)
- Air Monitor (AM)
- Spectrum monitor
- Secure enterprise mesh

## RADIOS

- Software-configurable single radio capable of supporting 2.4 GHz or 5 GHz
- 802.11n capable, implementing 2x2 MIMO with 2 spatial streams, providing up to 300 Mbps data rate

## RF MANAGEMENT

- Automatic transmit power and channel management control with automatic coverage-hole correction via Adaptive Radio Management (ARM)
- Spectrum analysis remotely scans the 2.4-GHz and 5-GHz radio bands to identify sources of RF interference. This provides visibility into non-802.11 RF interference sources and their effect on 802.11 channel quality.

## ADVANCED FEATURES

- Integrated RAP, secure enterprise mesh point or portal, wireless intrusion detection and prevention
- Integrated Trusted Platform Module (TPM) for secure storage of credentials and keys

## WIRELESS RADIO SPECIFICATIONS

- AP type: Single radio, dual-band 802.11n indoor
- Supported frequency bands (country-specific restrictions apply):
  - 2.400 to 2.4835 GHz
  - 5.150 to 5.250 GHz
  - 5.250 to 5.350 GHz
  - 5.470 to 5.725 GHz
  - 5.725 to 5.875 GHz
- Available channels: Controller-managed, dependent upon configured regulatory domain
- Platform supports Dynamic Frequency Selection (DFS) to allow optimal usage of available RF spectrum

- Supported radio technologies:
  - 802.11b: Direct-sequence spread-spectrum (DSSS)
  - 802.11a/g/n: Orthogonal frequency division multiplexing (OFDM)
  - 802.11n: 2x2 MIMO with 2 spatial streams
- Supported modulation types:
  - 802.11b: BPSK, QPSK, CCK
  - 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM
- Transmit power: Configurable in increments of 0.5 dBm
- Maximum (aggregate) transmit power:
  - 2.4 GHz: 21 dBm (limited by local regulatory requirements)
  - 5 GHz: 21 dBm (limited by local regulatory requirements)
- Maximum ratio combining (MRC) for improved uplink RF performance
  - Cyclic Delay Diversity (CDD) for improved downlink RF performance
- Association rates (Mbps):
  - 802.11b: 1, 2, 5.5, 11
  - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
  - 802.11n: MCS0 - MCS15 (6.5 Mbps - 300 Mbps)
- 802.11n high-throughput (HT) support: HT 20/40
- 802.11n packet aggregation: A-MPDU, A-MSDU

## POWER

- 48 volts DC 802.3af Power over Ethernet
- 12 volts DC for external AC supplied power (power adapter sold separately)
- Maximum power consumption (worst case):
  - When powered from PoE: 9 watts
  - When powered from DC: 8 watts

## ANTENNAS

- Integrated, omni-directional antenna elements (supporting up to 2x2 MIMO with spatial diversity)
  - 2.4 GHz/2.5 dBi
  - 5 GHz/4.0 dBi

## INTERFACES

- Network:
  - 1 x 10/100/1000BASE-T Ethernet (RJ-45), auto-sensing link speed and MDI/MDX
  - 4 x 10/100BASE-T Ethernet (RJ-45), auto-sensing link speed and MDI/MDX
  - 1 x passive RJ-45 pass-through interface
- Power:
  - 1 x DC power connector
- Other:
  - 1 x RJ-45 serial console interface

## MOUNTING

- Mount plate, supporting various worldwide electrical wall box standards.

## MECHANICAL

- Dimensions/weight (unit, with mount bracket):
  - 130 mm x 143 mm x 35 mm
  - 425 g
- Dimensions/weight (shipping):
  - 200 mm x 170 mm x 58 mm
  - 580 g

## ENVIRONMENTAL

- Operating:
  - Temp: 0° C to 40° C (+32° F to +104° F)
  - Humidity: 5% to 95% non-condensing
- Storage and transportation temperature range:
  - Temp: -40° C to +70° C (-40° F to +158° F)

## REGULATORY

- FCC/Industry of Canada
- CE Marked
- R&TTE Directive 1995/5/EC
- Low Voltage Directive 72/23/EEC
- EN 300 328
- EN 301 489
- EN 301 893
- UL/IEC/EN 60950
- EN 60601-1-1, EN60601-1-2

## CERTIFICATIONS

- CB Scheme Safety, cTUVus
- Wi-Fi certified 802.11a/b/g/n

## WARRANTY

- Aruba Limited lifetime warranty

## MINIMUM ARUBAOS VERSION

- 6.1.3.0

## PRODUCT SHIPS WITH

- AP-93H access point
- Short CAT5e Ethernet cable (2x)
- Universal mount plate
- Installation guide

## Ordering Information

Part Number	Description
AP-93H	Aruba 93H AP (802.11a/n or 802.11b/g/n, integrated antennas, built-in switch)
AP-AC-UN	Aruba 12 V DC Universal AC Power Adapter Kit – North America, Japan, United Kingdom, Italy, EC (Europlug), Australia, China, India, Korea
AP-AC-12V18	12 V DC/ 18 W AC power adapter. Does not include country specific power cord.

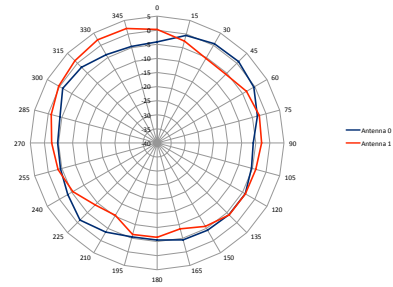
<b>RF Performance Table</b>				
	Max TX power per active TX chain (dBm)	RX Sensitivity (dBm)	Max TX power per active TX chain (dBm)	RX sensitivity (dBm)
	<b>2.4 GHz</b>		<b>5 GHz</b>	
<b>802.11b</b>				
1Mbps	18	-94		
2 Mbps	18	-94		
5.5 Mbps	18	-93		
11 Mbps	18	-91		
<b>802.11a/g</b>				
6 Mbps	18	-92	18	-92
9 Mbps	18	-91	18	-91
12 Mbps	18	-87	18	-87
18 Mbps	18	-86	18	-86
24 Mbps	18	-84	18	-84
36 Mbps	15	-82	15	-82
48 Mbps	14	-79	14	-79
54 Mbps	14	-76	14	-76
<b>802.11n HT20</b>				
MCS0	18	-92	18	-92
MCS1	17	-90	17	-90
MCS2	17	-88	17	-88
MCS3	16	-85	16	-85
MCS4	16	-81	16	-81
MCS5	15	-79	15	-79
MCS6	15	-77	14	-77
MCS7	14	-73	13	-73
MCS8	18	-92	18	-92
MCS9	17	-90	17	-90
MCS10	17	-88	17	-88
MCS11	16	-85	16	-85
MCS12	16	-81	16	-81
MCS13	15	-79	15	-79
MCS14	15	-77	14	-77
MCS15	14	-73	13	-73
<b>802.11n HT40</b>				
MCS0	18	-92	18	-92
MCS1	17	-90	17	-90
MCS2	17	-88	17	-88
MCS3	16	-85	16	-85
MCS4	16	-81	16	-81
MCS5	15	-79	15	-79
MCS6	15	-77	14	-77
MCS7	14	-73	13	-73
MCS8	18	-92	18	-92
MCS9	17	-90	17	-90
MCS10	17	-88	17	-88
MCS11	16	-85	16	-85
MCS12	16	-81	16	-81
MCS13	15	-79	15	-79
MCS14	15	-77	14	-77
MCS15	14	-73	13	-73

Maximum capability of the hardware provided. Maximum transmit power will be limited by local regulatory settings.

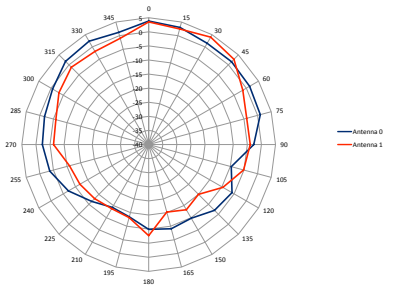
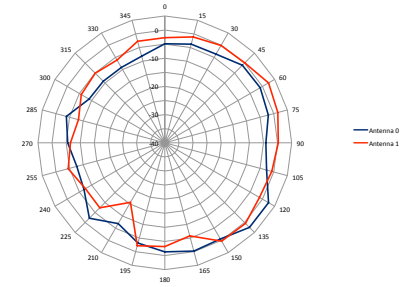
Antenna Gain Plots

H-plane (top view)

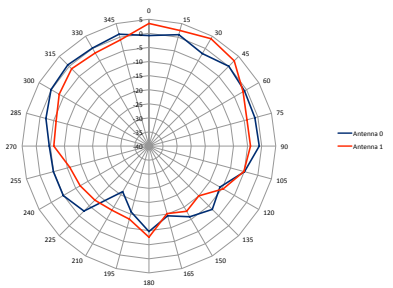
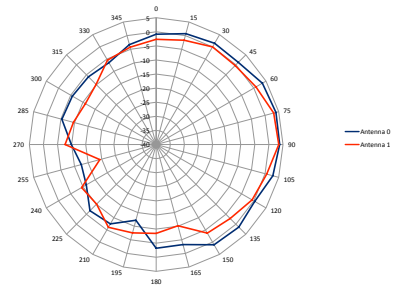
E-plane (side view)



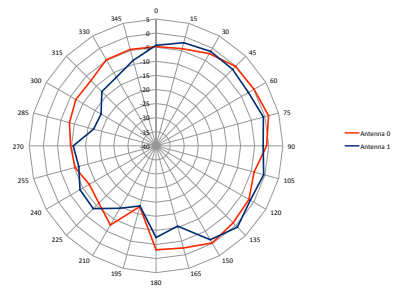
2.45 GHz



5.2 GHz



5.8 GHz



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