

# ARUBA AP-92 AND AP-93 ACCESS POINTS

Provides Secure Remote Network Connectivity



The multifunction AP-92 and AP-93 are entry-level indoor 802.11n access points (APs) designed for low-density deployments in offices, hospitals, schools and retail stores. These compact, high-speed APs deliver wire-like performance at data rates up to 300 Mbps.

The AP-92 features a single 2x2 MIMO dual-band 2.4-GHz/5-GHz radio with external antennas while the AP-93 features the same radio with internal antennas. Both APs are built to provide years of trouble-free operation and are backed by a limited lifetime warranty.

Working with Aruba's line of centralized Mobility Controllers, the AP-92 and AP-93 deliver 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 and thereby reducing operating costs.

802.11n enables the use of wireless as a primary connection with speed and reliability comparable to a wired LAN. It also increases performance by utilizing techniques such as channel bonding, block acknowledgement and MIMO radios. Advanced antenna technology also increases range and reliability.

The key to ensuring wire-like performance and reliability is Aruba's unique Adaptive Radio Management and spectrum analysis\* capabilities, which manage the 2.4-GHz and 5-GHz radio bands to deliver maximum client performance while mitigating any RF interference.

The multifunction AP-92 and AP-93 can be configured through the Mobility Controller to provide WLAN access with part-time air monitoring, dedicated air monitoring for wireless IPS and spectrum analysis, Remote AP (RAP) functionality or secure enterprise mesh. The AP-92 and AP-93 each feature a 10/100/1000BASE-T Ethernet interface and can operate from standard 802.3af power-over-Ethernet (PoE) sources or a 12-volt DC power supply.

## APPLICATION

- Entry-level indoor 802.11n single-radio, dual-band AP for low-density deployments in offices, hospitals, schools and retail stores.

## OPERATING MODE

- 802.11a/b/g/n AP, air monitor (AM) and Remote AP (RAP)
- Spectrum monitor, AM and RAP
- AM and RAP
- RAP
- 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 300Mbps data rate

## RF MANAGEMENT

- Automatic transmit power and channel management control with auto 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 transmit power:
  - 2.4GHz: 21 dBm (limited by local regulatory requirements)
  - 5 GHz: 21 dBm (limited by local regulatory requirements)
- Maximum ratio combining (MRC) for improved receiver performance
- Cyclic Delay Diversity 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 V DC 802.3af Power over Ethernet
- 12 V DC for external AC supplied power (adapter sold separately)
- Maximum power consumption: 10 watts

## ANTENNA

- AP-92: dual, RP-SMA interfaces for external antenna support
- AP-93: integrated, omni-directional antenna elements (supporting up to 2x2 MIMO with spatial diversity)
  - 2.4 GHz/2.5 dBi
  - 5 GHz/5.8 dBi

## INTERFACES

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

## MOUNTING

- Standard:
  - Tool-less ceiling tile rail (15/16")

- Optional mounting kit:
  - Wall mount adapter
  - Ceiling tile rail adapters (15/16" and 9/16" recessed or non-recessed)

## MECHANICAL

- Dimensions/weight (unit):
  - 120 mm x 130 mm x 35 mm (4.7" x 5.1" x 1.4")
  - 255 g (9 oz)
- Dimensions/weight (shipping):
  - 180 mm x 155 mm x 45 mm (7.1" x 6.1" x 1.8")
  - 375 g (13.2 oz)

## ENVIRONMENTAL

- Operating:
  - Temp: 0° C to 50° C (+32° F to +122° 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
- CB Scheme Safety, cTUVus
- Japan MIC/VCCI
- Korea KCC
- Brazil ANATEL
- Mexico NOM/COFETEL
- China SRRC/CCC
- UL2043 compliant
- AS/NZS 4260, 4771, 3548

## CERTIFICATIONS

- Wi-Fi certified 802.11a/b/g/n



## WARRANTY

- Limited lifetime warranty

## MINIMUM AOS VERSION

- 5.0.4.2, 6.0.2.1, 6.1.2.0

## Ordering Information

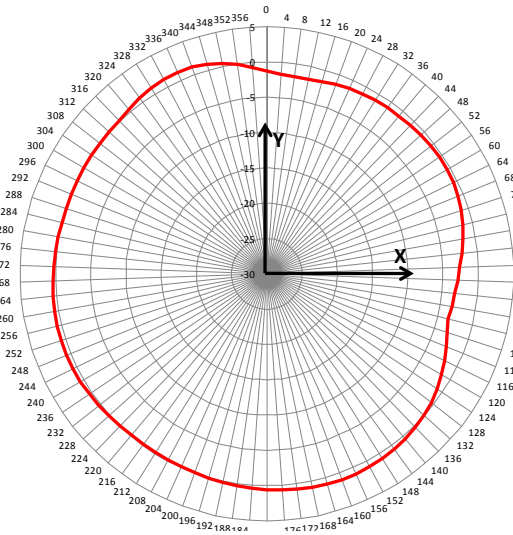
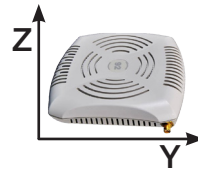
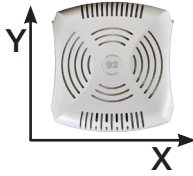
Part Number	Description
AP-92	Aruba 92 AP (802.11a/n or 802.11b/g/n: antenna connectors)
AP-93	Aruba 93 AP (802.11a/n or 802.11b/g/n: integrated antenna)
AP-AC-UN	Aruba 12 V DC Universal AC Power Adapter Kit - North America, Japan, United Kingdom, Italy, EC (Europlug), Australia, China, India, Korea
AP-AC-12V18	12 V DC/ 18W AC Power Adapter. Does not include country specific power cord.
AP-90-MNT	Aruba 90 Series Access Point Mounting Kit

**AP-93 RF PERFORMANCE TABLE**

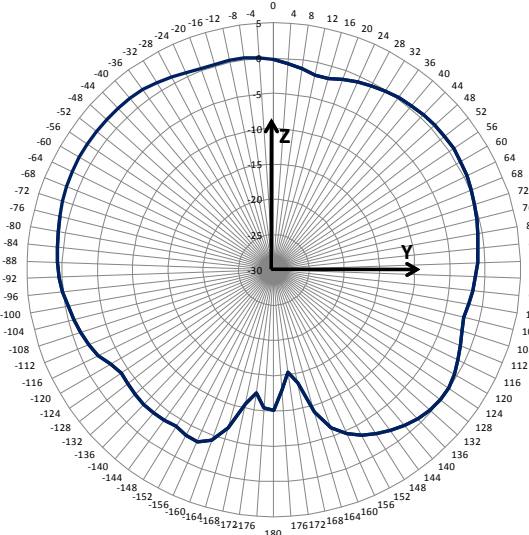
	Max TX power per active TX chain (dBm)	RX Sensitivity (dBm)	Max TX power per active TX chain (dBm)	RX Sensitivity (dBm)
	2.4 GHz		5 GHz	
<b>802.11b</b>				
1Mbps	18	-96		
2Mbps	18	-96		
5.5Mbps	18	-94		
11Mbps	18	-93		
<b>802.11a/g</b>				
6Mbps	18	-93	18	-93
9Mbps	18	-93	18	-93
12Mbps	18	-87	18	-87
18Mbps	18	-87	18	-87
24Mbps	18	-85	18	-85
36Mbps	15	-82	15	-82
48Mbps	14	-80	14	-80
54Mbps	14	-80	14	-80
<b>802.11n HT20</b>				
MCS0	18	-93	18	-93
MCS1	17	-93	17	-93
MCS2	17	-87	17	-87
MCS3	16	-87	16	-87
MCS4	16	-83	16	-83
MCS5	15	-80	15	-80
MCS6	14	-77	14	-77
MCS7	13	-75	13	-75
MCS8	18	-93	18	-93
MCS9	17	-93	17	-93
MCS10	17	-87	17	-87
MCS11	16	-87	16	-87
MCS12	16	-83	16	-83
MCS13	15	-80	15	-80
MCS14	14	-77	14	-77
MCS15	13	-75	13	-75
<b>802.11n HT40</b>				
MCS0	18	-90	18	-90
MCS1	17	-90	17	-90
MCS2	17	-87	17	-87
MCS3	16	-84	16	-84
MCS4	16	-80	16	-80
MCS5	15	-77	15	-77
MCS6	14	-77	14	-77
MCS7	13	-73	13	-73
MCS8	18	-90	18	-90
MCS9	17	-90	17	-90
MCS10	17	-87	17	-87
MCS11	16	-84	16	-84
MCS12	16	-80	16	-80
MCS13	15	-77	15	-77
MCS14	14	-77	14	-77
MCS15	13	-73	13	-73

Maximum capability of the hardware provided. Maximum transmit power will be limited by local regulatory settings.  
RF performance numbers for AP-92 slightly lower due to additional internal RF circuitry.

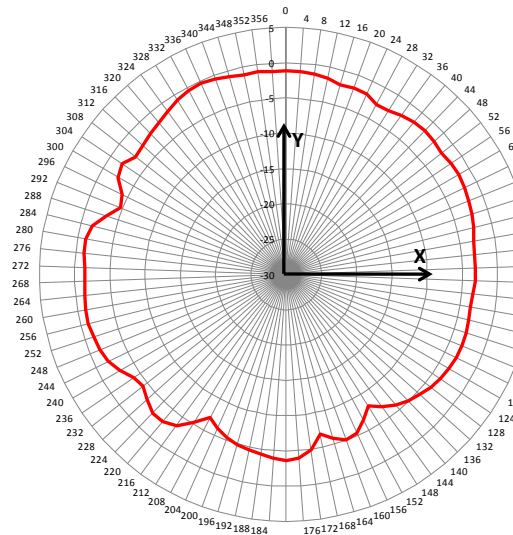
ANTENNA PLOTS



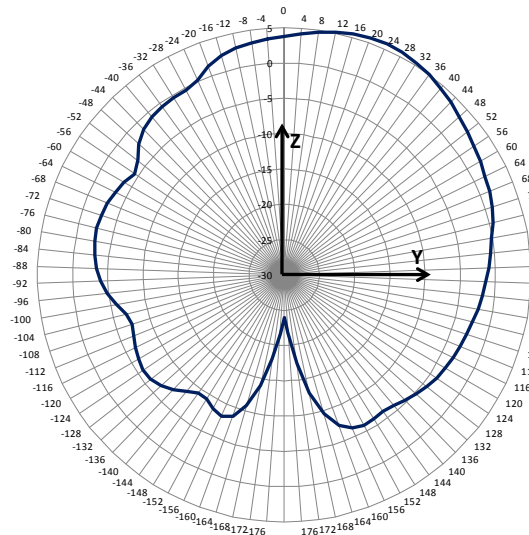
H-plane – 2.45 GHz



E-plane – 2.45 GHz



H-plane – 5.5 GHz



E-plane – 5.5 GHz



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