ARUBA AP-104 AND AP-105 ACCESS POINTS

Designed for High-Density Deployments

The multifunction AP-104 and AP-105 are affordable indoor 802.11n access points (AP) designed for high-density deployments in offices, hospitals, schools and retail stores.

The AP-105 features two 2x2 MIMO dual-band 2.4-GHz/5-GHz radios with two internal omni-directional downtilt antennas, which make it ideal for warehouses and other high-ceiling facilities. The AP-104 features the same radios with external antenna connectors.

These compact, high-speed APs deliver wire-like performance at data rates up to 300 Mbps per radio. With ceiling- and wall-mount options, they 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-104 and AP-105 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, which reduces 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 RF signal range and reliability.

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

The AP-104 and AP-105 can be configured through the Mobility Controller to provide WLAN access with part-time air monitoring, dedicated air monitoring for wireless intrusion protection and spectrum analysis, Remote AP (RAP) functionality or secure enterprise mesh.

The APs feature a 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

- Indoor 802.11n dual-radio, dual-band AP for high-density deployments in warehouses, 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
- Remote AP
- Secure enterprise mesh

RADIOS

- Software-configurable dual radio capable of supporting 2.4 GHz and 5 GHz
- Both radios 802.11n capable, implementing 2x2 MIMO with two spatial streams, providing up to 300 Mbps data rate per radio

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 802.11n channel quality.

ADVANCED FEATURES

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

WIRELESS RADIO SPECIFICATIONS

- AP type: Dual-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

ARUBA networks

- 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: 23 dBm (limited by local regulatory requirements)
  - 5 GHz: 23 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 PoE
- 12 V DC for external AC supplied power (adapter sold separately)
- Maximum power consumption: 12.5 watts

ANTENNA

- RF interconnect attenuation (between radio and connectors or antennas): 0.5dB
- AP-104: 4 x RP-SMA antenna interface connectors for external antenna support (2 per band)
- AP-105: 4 x integrated, omni-directional antenna elements (supporting 2x2 MIMO). Maximum antenna gain:
  - 2.4GHz / 3.0dBi
  - 5GHz / 4.5dBi

INTERFACES

- Network:
  - 1 x 10/100/1000Base-T Ethernet (RJ45), auto-sensing link speed and MDI/MDX
- Power:
  - 1 x DC power connector
- Other:
  - 1 x RJ45 console interface

MOUNTING

- Standard:
  - Wall
  - Tool-less ceiling tile rail (15/16")
- Optional mounting kit:
  - Solid wall mount bracket
  - Wall box mount bracket (fits standard US single gang wall boxes)
  - Ceiling tile rail adapters (15/16" and 9/16" recessed or non-recessed)

MECHANICAL

- Dimensions/weight (unit):
  - 132 mm x 135 mm x 45 mm (5.2" x 5.3" x 1.8")
  - 0.3 kg (10.56 oz)
- Dimensions/weight (shipping):
  - 195 mm x 170 mm x 55 mm (7.7" x 6.7" x 2.2")
  - 0.44 kg (15.52 oz)

ENVIRONMENTAL

- Operating:
  - Temperature: 0° C to 50° C (+32° F to +122° F)
  - Humidity: 5 to 95% non-condensing
- Storage and transportation temperature range:
  - Temperature: -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
- UL2043 Plenum rating
- Wi-Fi certified 802.11a/b/g/n

WARRANTY

- Limited lifetime warranty

MINIMUM AOS VERSION

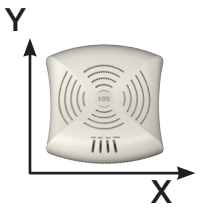
- AP-104: 6.1.3.0
- AP-105: 3.4.1.0

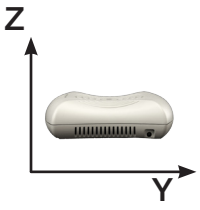
AP-104 AND AP-105 RF PERFORMANCE TABLE

	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	
802.11b				
1 Mbps	20	-96		
2 Mbps	20	-96		
5.5 Mbps	20	-94		
11 Mbps	20	-93		
802.11a/g				
6 Mbps	20	-96	20	-96
9 Mbps	20	-96	20	-96
12 Mbps	20	-96	20	-96
18 Mbps	20	-95	20	-95
24 Mbps	20	-92	20	-91
36 Mbps	19	-89	19	-88
48 Mbps	18	-85	18	-84
54 Mbps	17	-83	17	-83
802.11n HT20				
MCS0	20	-96	20	-96
MCS1	20	-95	20	-94
MCS2	20	-93	20	-92
MCS3	20	-90	20	-89
MCS4	19	-87	19	-86
MCS5	18	-82	18	-82
MCS6	17	-81	17	-80
MCS7	15	-80	15	-79
MCS8	20	-95	20	-95
MCS9	20	-93	20	-92
MCS10	20	-91	20	-90
MCS11	20	-87	20	-87
MCS12	19	-84	19	-84
MCS13	18	-81	18	-80
MCS14	17	-80	17	-78
MCS15	15	-77	15	-77
802.11n HT40				
MCS0	20	-93	20	-92
MCS1	20	-93	20	-92
MCS2	20	-90	20	-89
MCS3	20	-86	20	-86
MCS4	19	-83	19	-83
MCS5	18	-79	18	-80
MCS6	17	-77	17	-77
MCS7	15	-76	15	-76
MCS8	20	-92	20	-92
MCS9	20	-89	20	-90
MCS10	20	-87	20	-87
MCS11	20	-84	20	-84
MCS12	19	-82	19	-81
MCS13	18	-76	18	-77
MCS14	17	-76	17	-75
MCS15	15	-73	15	-73

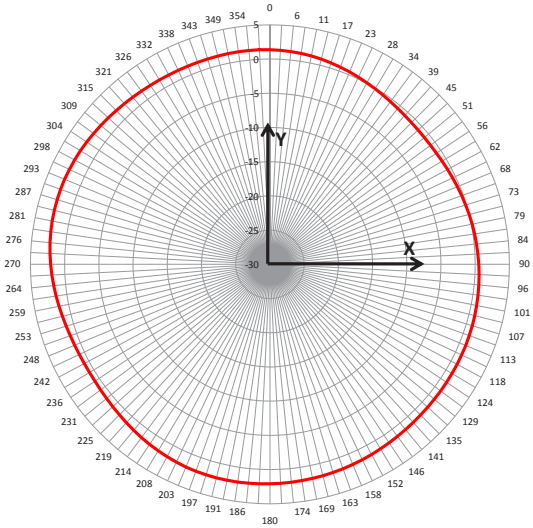
Maximum capability of the hardware provided. Maximum transmit power will be limited by local regulatory settings.

AP-105 ANTENNA PATTERN PLOTS

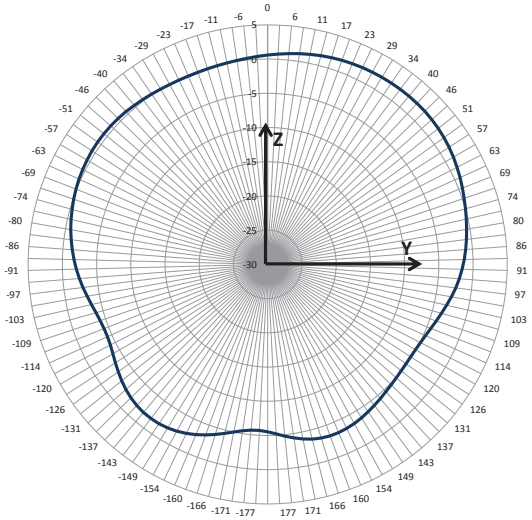




2.45 GHz

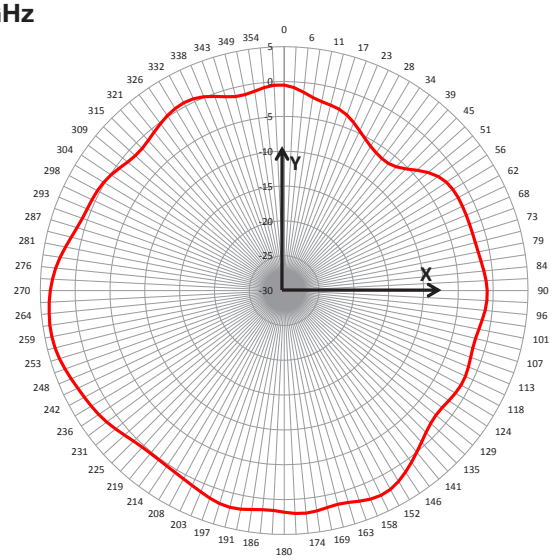


Horizontal (azimuth) plane

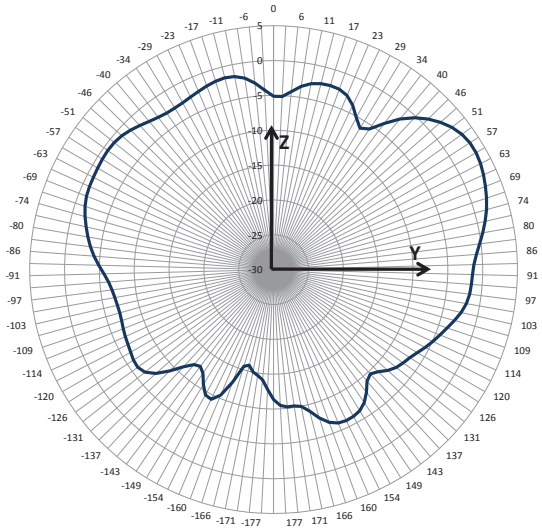


Vertical (elevation) plane

5.5 GHz



Horizontal (azimuth) plane



Vertical (elevation) plane

Ordering Information	
Part Number	**Detscription**
AP-104	Aruba 104 AP (802.11a/n and 802.11b/g/n) – antenna connectors
AP-105	Aruba 105 AP (802.11a/n and 802.11b/g/n) – integrated antennas
AP-AC-UN	Aruba 12 V DC Universal AC Power Adapter Kit - North America, Japan, United Kingdom, Italy, EC (Schuko), Australia, China, India, Korea
AP-AC-12V18	12 V DC/ 18W AC Power Adapter. Does not include country specific power cord.
AP-105-MNT	Aruba 105 Access Point Mounting Kit for flat surfaces or wall boxes (note: covers DC power interface)
AP-105-MNT-C	Aruba 105 Access Point Ceiling Mounting Kit (rail adapters)
AP-105-MNT-DC	Aruba 105 Access Point Mounting Kit for flat surfaces or wall boxes (leaves DC power interface exposed)

www.arubanetworks.com

1344 Crossman Avenue. Sunnyvale, CA 94089
1-866-55-ARUBA | Tel. +1 408.227.4500 | Fax. +1 408.227.4550 | info@arubanetworks.com