ARUBA® AP-134 AND AP-135 ACCESS POINTS

The AP-134 and AP-135 indoor 802.11n access points (APs) maximize performance for mobile devices in extremely high-density Wi-Fi environments and ensure strong threat protection using integrated MACSec* security.

These multifunctional APs deliver wire-like performance at data rates up to 450 Mbps per radio. Taking advantage of 802.11n technology, the AP-134 and AP-135 employ three spatial streams to deliver 50% more throughput and support 50% more mobile devices in high-density environments compared to previous-generation APs.

The AP-134 features two 3x3 MIMO dual-band 2.4-GHz/5-GHz radios with external antenna interfaces, while the AP-135 features the same radios with internal antennas. Both are built to provide years of trouble-free operation and are backed by a limited lifetime warranty.

MACSec authentication and encryption on Ethernet ports enable secure AP deployment by interoperating with the MACSec capability on Aruba Mobility Access Switches and other wiring closet devices.

The AP-134 and AP-135 feature dual 10/100/1000BASE-T Ethernet interfaces and operate from standard 802.3af and 802.3at power-over-Ethernet (PoE) sources. The secondary Ethernet interface (active only when supplying 802.3at PoE or DC power to the access point) enables secure authorized backhaul for wired network-attached devices.

Working with Aruba's line of centralized Mobility Controllers, the AP-134 and AP-135 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.

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-134 and AP-135 can be configured through the Mobility Controller to provide WLAN access with part-time air monitoring for wireless IPS and spectrum analysis. They can be configured as dedicated air monitors within the campus WLAN or can be remotely located. They can enable wireless mesh networking for high performance network backhaul where wired cabling is not available.

APPLICATION

802.11n indoor APs designed to support maximum performance for maximum client density, with maximum deployment flexibility and security.

OPERATING MODE

- Campus AP, air monitor (AM) and spectrum monitor
- Remote AP, AM and spectrum monitor

RADIOS

- Software-configurable dual radio capable of supporting 2.4 GHz and 5 GHz

RF MANAGEMENT

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

ADVANCED FEATURES

- Remote AP, spectrum analysis, secure enterprise mesh and wireless intrusion protection
- MACSec security for authorization and data encryption between the AP ports and the wired access layer (requires MACSec support on the wired edge switch)
- Integrated Trusted Platform Module (TPM) for secure storage of credentials and keys
- SecureJack-capable for secure tunneling of wired Ethernet traffic

ANTENNA

- AP-134: Three RP-SMA antenna interfaces for external dual-band antennas
- AP-135: Six internal downtilt omni-directional antennas; three per frequency band
  - 2.4 to 2.5 GHz/3.5 dBi
  - 5.150 to 5.875 GHz/4.5 dBi

Available in the second half of 2011

WIRELESS RADIO SPECIFICATIONS

- AP type: Dual-radio, dual-band 802.11n indoor
- Supported Frequency Bands (country-specific restrictions apply):
    - 2.400 - 2.4835 GHz
    - 5.150 - 5.250 GHz
    - 5.250 - 5.350 GHz
    - 5.470 - 5.725 GHz
    - 5.725 - 5.850 GHz
- Available Channels:
- Controller-managed, dependent upon configured regulatory domain Supported Radio Technologies:
    - 802.11b: Direct-sequence spread-spectrum (DSSS)
    - 802.11a/g/n: Orthogonal frequency division multiplexing (OFDM)
    - 802.11n: 3x3 MIMO with up to three 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 (aggregated for three active transmit chains):
    - 2.4 GHz: 23 dBm (limited by local regulatory requirements)
    - 5 GHz: 23 dBm (limited by local regulatory requirements)
- Maximum Ratio Combining (MRC) for improved receiver performance
- Short guard interval for 20-MHz and 40-MHz channels
- Space Time Blocking Code (STBC) for increased range and improved reception
- Low Density Parity Check (LDPC) for high efficiency error correction and increased throughput
- Transmit Beam-forming (TxBF) ready platform for increased reliability in signal delivery
- Association Rates (Mbps):
    - 802.11b: 1, 2, 5.5, 11
    - 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54
    - 802.11n: MCS0 – MCS23 (6.5 Mbps to 450 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 or 802.3at PoE+
- 12 V DC external AC supplied power (adapter sold separately)
- Maximum power consumption: 15 watts

INTERFACES

- Network:
    - 2x10/100/1000BASE-T Ethernet (RJ-45), auto-sensing link speed and MDI/MDX
    - Supports MACSec encryption, 802.3az (EEE)
    - 48 V DC 802.3af PoE or 802.3at PoE+ interoperable with intellisource power sourcing equipment (both ports)
- Antenna (model AP-134 only):
    - 3 x RP-SMA antenna interfaces (supports up to 3x3 MIMO)
- Other:
    - 1 x RJ-45 console interface

MOUNTING

- Standard:
    - Wall mounting using built-in mount features
    - Recessed ceiling-tile rail mounting using one of two adapters supplied with the AP (9/16" and 15/16" rails)
- Optional mounting kit:
    - Wall-mount bracket for offset wall mounting, providing spacing between wall and unit (cable bend radius)
- Security:
    - Kensington security lock point

MECHANICAL

- Dimensions / Weight:
    - Unit: 760 g (1.68 lb), 170 mm x 170 mm x 45 mm (6.69" x 6.69" x 1.77")
    - Shipping box: 1,050 g (2.31 lb), 285 mm x 240 mm x 70 mm (11.22" x 9.45" x 2.76")

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
- R&TTE Directive 1995/5 EC
- EN 300 328
- EN 301 893
- CB Scheme Safety, cTUVus
- Korea KCC
- Mexico NOM/COFETEL
- UL2043 compliant
- CE Marked
- Low Voltage Directive 72/23/EEC
- EN 301 489
- UL/IEC/EN 60950
- Japan MIC/VCCI
- Brazil ANATEL
- China SRRC/CCC
- AS/NZS 4260, 4771, 3548

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

CERTIFICATIONS

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

WARRANTY

- Limited lifetime warranty

AP-135 RF Performance Table

Rate	2.4GHz		5GHz	
	Transmit power (per active transmit chain)	Receive sensitivity	Transmit power (per active transmit chain)	Receive sensitivity
802.11b				
1 Mbps	18	-97		
11 Mbps	18	-92		
802.11a/g				
6 Mbps	18	-94	18	-94
54 Mbps	16	-81	16	-82
802.11n HT20				
MCS0/8/16	17	-94	17	-94
MCS7/15/23	12	-78	12	-78
802.11n HT40				
MCS0/8/16	17	-92	17	-92
MCS7/15/23	11	-75	11	-74

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

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The scale may vary depending upon the deployment scenario and features enabled.   DS_AP134_135_110216